CHAPTER 14

LIBRARY SUPPORT FOR ONLINE LEARNERS: E-RESOURCES, E-SERVICES AND THE HUMAN FACTORS

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Introduction

The growth in online learning or e-learning, in which education is delivered and supported through computer networks such as the Internet, has posed new challenges for library services. E-learners and traditional learners now have access to a universe of digital information through the information superhighway. New information and communications technologies, as well as new educational models, require librarians to re-evaluate the way they develop, manage and deliver resources and services.

Historically, librarians have sought to provide services to distance learners that are equivalent to those available to on-campus learners (Slade & Kascus, 1998), and this aspiration is grounded in the philosophical frameworks of the Canadian Library Association’s Guidelines for Library Support of Distance and Distributed Learning in Canada (2000) (http://www.cla.ca/about/distance.htm) and the Association of College and Research Libraries’ Guidelines for Distance Learning Library Services (2000) (http://www.ala.org/Content/NavigationMenu/ACRL/Standards_and_Guidelines/Guidelines_for_Distance_Learning_Library_Services.htm).

Both the Canadian and the American Guidelines recognize that distance learners frequently do not have direct access to the full range of library services and materials, and that in this situation, the goal of equity makes it necessary that librarians services that are more “personalized” than might be expected on campus. The library literature provides a rich record of service models and best practices, and there has been an explosion in publication as librarians consider ways to support learners in a networked environment (Slade, 2000).
What do e-learners need from librarians? Suggestions advocating change in librarians’ roles in support of distance learning in the information age appear throughout the literature: librarians “must assert themselves as key players in the learning process thereby changing their roles from information providers to educators” (Cooper & Dempsey, 1998); they have become providers of technical support (Hulshof, 1999); and they have been transformed from “information gatekeepers” to “information gateways” (Haricombe, 1998). Lippincott (2002) advocates librarian involvement in learning communities: “The librarian can shift the focus from explaining library resources to meeting the ongoing information needs of the students in the broad information environment” (p. 192).

In responding to the need to provide ongoing online library support, librarians have worked at translating what they do in a traditional library into virtual or digital environments, while customizing their services and resources for e-learners. Traditionally, libraries offer circulation services, interlibrary loans, course reserves, an information desk, a reference desk, and library instruction. To serve learners connected to their institutional library primarily through a computer network, librarians are providing remote access to, and electronic delivery of, library resources, and are using communication technologies to deliver electronic reference services and instructional support.

When we speak of providing support to e-learners, we are referring to a wider community of learners than the term “student” suggests. An academic library’s learners may include students, faculty, staff, researchers, and so on. The library is seen as a source of training and guidance to a community of learners who are concerned with navigating the complexities of locating and using digital resources and services. Moreover, the move toward an online environment has resulted in a shift from the systematic one-to-one information flow of the past to a new model in which the users and the providers of information are able to relate in a many-to-many, dynamic relationship. For example, in the traditional model, a librarian provides a bridge between learners and information providers by selecting and cataloguing resources and by providing assistance with these resources. In the new model, the library serves as a facilitator by offering ongoing support enabling learners to interact and exchange knowledge with others, to
communicate directly with the publishers and vendors of information resources, and to participate in a collaborative endeavor to make available rich collections of online scholarly information resources.

This chapter examines how libraries are responding to the challenges of delivering core services to e-learners. We look at library practices and technologies being applied in the construction of virtual libraries. We also consider challenges and opportunities virtual libraries bring to the support of e-learners, as well as the importance of providing support within a collaborative environment, which stresses human factors, such as communication and interaction.

Defining the Virtual Library

Gapen (1993) defines the virtual library as

the concept of remote access to the contents and services of libraries and other information resources, combining an on-site collection of current and heavily used materials in both print and electronic form, with an electronic network which provides access to, and delivery from, external worldwide library and commercial information and knowledge sources. (p. 1)

Additional terms for the virtual library include the “digital library,” the “electronic library,” and the “library without walls.” Many libraries are hybrids, providing virtual access to electronic resources and services, while maintaining and supporting use of a physical collection housed in a library building.

With the tremendous growth of the Internet, e-learners have access to an overwhelming range of information sources available at the click of a mouse: library resources; government information; news sites; advertising; even whole Web sites devoted to Elvis sightings, crop circles, and JFK conspiracy theories. Librarians have traditionally selected and organized resources with great care. In building virtual libraries, librarians have the opportunity to provide e-learners with direction and to rescue them from information overload. A virtual library can link e-learners to library catalogues, licensed journal databases, electronic book collections, selected
Internet resources, electronic course reserves, and tutorials, and to forums for communication and interaction with librarians. The virtual library permits e-learners to access library and networked resources and services anytime and anywhere that an Internet connection and computing equipment are available.

The Landscape of Library Resources

Technology offers opportunities to be innovative, as the following discussion of electronic resources and services demonstrates, but it is important to bear in mind that not all e-learners are equal when it comes to access to computing equipment; the availability, speed, and stability of Internet connections; or the information skills that are needed to make optimum use of virtual libraries.

Access to print-based library materials continues to be important, because not all of the information resources that e-learners need are available in electronic format: many of our most valuable research materials are still print-based. The Digital Library Federation and the Council on Library and Information Resources commissioned a survey of the use of print and electronic scholarly information resources at institutions of higher education across the United States. The survey found that, although almost half of undergraduates report using electronic resources all or most of the time for their coursework, this was the case for only 35.2% of graduate students. Only 34.7% of faculty indicated that they use electronic resources all or most of the time for their research, and just 22.7% said this of their teaching (Friedlander, 2002, Tables 23, 17, & 20).

Although there has been a shift away from purchasing print materials to be housed in a physical building and toward providing access to licensed digital resources made available over a computer network, librarians continue to work to resolve issues pertaining to distance delivery of resources that are unavailable in digital format. Online catalogues and indexing and abstracting systems provide e-learners with convenient access to bibliographic information about valuable scholarly documents. When those documents are not available in full-text form online, a demand is generated for delivery from a library’s print collection or from the collections of other libraries through interlibrary loans. Typical solutions for
delivery of non-digital formats include the use of mail and courier services, the establishment of collections at designated sites, and the negotiation of agreements with other libraries through consortia.

Given that a growing number of learners are accessing library collections online, librarians are working to develop an integrated approach to providing access to electronic resources that facilitates retrieval and reduces confusion. A library Web site can function as an information gateway, an entry point to a range of online resources, with key components being the library catalogue and journal databases. Most online catalogues permit the integration of electronic books and electronic journals, enabling learners to locate items from digital and physical collections with one search. User services—such as the ability to check due dates, renew materials, and request materials online—are also provided. Gateways may also organize collections and incorporate directories like that provided by Athabasca University’s Journal Databases: List Databases by Subject page (http://library.athabascau.ca/journals/subject.htm).

Librarians have become increasingly creative in enhancing their Web sites. Because not all e-learners have physical access to reference tools—the quick fact-finding tools that are the staple of library collections—libraries can perform a valuable service by providing pointers to online versions. Athabasca University Library’s Digital Reference Centre (http://library.athabascau.ca/drc), for example, offers a digital version of an academic library’s reference collection, including almanacs and directories, atlases and maps, data and statistics, and dictionaries and encyclopedias. Librarians select quality Internet resources to help e-learners navigate the Web. For example, the British Open University Library’s ROUTES database contains quality-assessed, course-related Internet resources “selected by course teams and the Library’s Information Specialists” (http://routes.open.ac.uk).

As libraries work to enhance their presence on the Web, a growing number are investigating the potential of electronic course reserves (e-reserves). The traditional course reserves desk of an academic library, with its limited copies, short loan periods, and high late fines, can be a considerable source of frustration for students. In the e-reserves model, the library makes available, through the World Wide Web, items that faculty have selected and “placed on reserve” for students in a particular course. San Diego
State University (SDSU) pioneered e-reserves in the early 1990s (http://ecr.sdsu.edu). SDSU uses Docutek’s ERes, a system that provides access to course readings, chat rooms, and bulletin boards.

Many other libraries have initiated their own projects. Electronic delivery of course reserve material has become a hot topic in the library literature (Butler, 1996; Soete, 1996; Algenio, 2002; Wilson, 2002; Calvert, 2000; Lowe & Rumery, 2000). The Association of Research Libraries (ARL) maintains the Electronic Reserves Listserv, and an archive of the discussion can be accessed on the Web (http://www.cni.org/Hforums/arl-ereserve).

Most e-reserves operate on a password-protected model: one must be affiliated with the institution, or even registered in the course, to view course reserves. A typical e-reserve solution is to employ an electronic course reserve module that permits full integration with the library’s online catalogue. Content in e-reserves databases varies. Scanning and mounting readings in portable document format (PDF) is time-consuming and requires copyright clearance. Other options for content include incorporating institution-produced materials (e.g., lecture notes and video or audio clips), using licensed digital resources through direct linking to items by means of a persistent URL, and including selected resources freely available through the World Wide Web.

Librarians can take a creative, pro-active approach to e-reserves. Athabasca University Library has developed a platform for e-reserves that operates on a somewhat different model than do other e-reserves systems. The Digital Reading Room (http://library.athabascau.ca/drr) offers a digital solution for course readings and supplementary materials. An in-house storage and retrieval system was developed for the DRR using open source software. The model operates along the principle of open access to collection creation tools, thus permitting course content creators, educational media developers, and librarians to develop a multidisciplinary knowledge database.

Each course in the Digital Reading Room has a Digital Reading File (DRF). The licensed contents, such as journal database articles, require authentication through the Library’s proxy server, permitting only the Athabasca University community of users to access them; non-licensed resources, such as Web sites, are freely available to the public. A search engine permits e-learners to search.
across the DRFs, providing a multidisciplinary aspect to course reserves that is not typically encountered. By encouraging the inclusion of resources in a variety of formats, including text, graphics, video, audio, simulations, and games, the DRR supports a wide range of learning objectives and styles. The DRR accommodates the inclusion of non-digital resources by providing e-learners with a means to request them from the Library. The DRR is being developed using metatags that conform to the IEEE LOM standards and use the CanCore implementation guidelines to insure consistency and search capability across database collections such as MERLOT (http://www.merlot.org).

Managing the remote access and authentication issues involved in making digital resources available has become a significant area of support to users of the electronic library (Hulshof, 1999). Librarians may be called upon to respond to questions concerning log-in and password information, browser configuration, software installation, and a range of troubleshooting needs. Access problems are hugely frustrating for e-learners, and must be resolved quickly. Ensuring that front-line library staff are adequately trained, providing clear instructions on the library’s Web site, and coordinating support activities with computing services personnel can contribute to effective technical support. E-learners also benefit from having a variety of means of contacting the library, including e-mail, Web forms, and a toll-free telephone number.

Library Services: Challenges and Opportunities

Reference

E-learners require more than access to e-resources. Traditionally, a reference librarian acts as an additional type of resource, one who can be counted upon to provide expertise in making sense of library systems and research tools, and to offer a helping hand along that often slippery path known as the research process. Virtual library users face additional challenges in mining relevant information out of a computer system that “obstinately” returns zero hits in response to a query that does not match the character strings in its database files.
The most common means of providing electronic reference services to remote users has been e-mail, the advantages and disadvantages of which have been well documented in the literature (Slade, 2000). The around-the-clock and around-the-world accessibility of e-mail allows users to connect with librarians beyond the walls of library buildings and outside the usual hours of operation. E-mail provides a written record of requests and responses, permits the electronic transmission of search results, and allows librarians time to reflect on requests. One of the most serious concerns about e-mail reference services is their impact on the traditional face-to-face reference interview, particularly the absence of the verbal and non-verbal cues that typically assist a librarian in effectively responding to a question.

Hulshof (1999) identifies three issues related to the use of electronic communication in serving virtual patrons (e-learners): immediacy, intricacy, and interaction. Because it is so easy for a learner to send a request electronically and have it arrive at the library instantly, there is a perception that the librarian's response will be as immediate. The learner may become frustrated, not realizing that the process of locating information and developing a response takes the librarian just as long when the request is made electronically as when it is made in person or in any other way. The more intricate or complex the request, the longer it will take for the librarian to clarify it and respond appropriately: a series of e-mail messages may be required, which will further reduce the immediacy of the e-mail request. Immediacy and intricacy relate to the lack of interaction: the opportunity to discuss and clarify inquiries that occurs in person or over the telephone is not so easily accommodated by e-mail.

There are ways to deal with some of these issues. A well-designed reference Web form, such as that provided on the Ask AU Library: Ask about a Research Topic Web page (http://library.athabascau.ca/contacts/refinquiry.htm), which encourages e-learners to include full identifying and course information, to describe clearly their research problem and search terminology, and to state the parameters of the assignment, can clarify requests for librarians and reduce the need to e-mail back and forth (Sloan, 1998). Automated replies, which are sent out by the e-mail program in response to the receipt of a message, can be used to
reassure e-learners that their messages are being received, and can let them know what to expect in terms of service.

E-mail reference service can be enhanced and supplemented with additional technologies that raise the level of interaction with real-time or live communication. Chat technology allows e-learners and librarians to send text messages back and forth instantly, using a form of communication that is familiar to most Internet users. There have been a number of library experiments with Web contact center software, which is modeled on the private sector’s online solution to providing customer support. Web contact center software provides a higher level of interaction than does basic chat software, allowing for queuing and routing of messages, as well as enabling librarians to “push” Web pages to users (Kimmel & Heise, 2001; McGlamery & Coffman, 2000). Providing e-learners with a toll-free telephone number remains an effective and convenient reference services strategy, particularly for intricate inquiries. The telephone reference interview works best when both librarian and e-learner are working in front of computers connected to the Internet.

Instruction

E-learners are frequently silent and invisible as they search and explore a library’s online resources, and they do not have the same access that on-campus learners have to formal library instruction sessions. With the array of digital resources available to them, the multiplicity of interfaces and search tools, and the need for evaluation and critical thinking when using the Internet for research, “information literacy” skills are a must-have for e-learners. Information literacy refers to competencies with information sources in a variety of formats. According to the Association of College and Research Libraries (2001),

an information literate individual is able to

• Determine the extent of information needed
• Access the needed information effectively and efficiently
• Evaluate information and its sources critically
• Incorporate selected information into one’s knowledge base
• Use information effectively to accomplish a specific purpose
- Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally

Supporting the integration of information literacy skills training into the core curriculum has become an important issue for libraries (Slade, 2000). As an extension of their traditional role of providing library instruction sessions and developing instructional materials, librarians are designing online tutorials and courses that promote information literacy and encourage active learning. Particularly fine examples are the University of Texas System Digital Library’s TILT—Texas Information Literacy Tutorial (http://tilt.lib.utsystem.edu); and Utah Academic Library Consortium’s Internet Navigator (http://medlib.med.utah.edu/navigator), a multi-institutional online course developed by a team of librarians and Web developers. The British Open University Library has developed SAFARI (http://www.open.ac.uk/safari), a freely available interactive tutorial, as well as an information literacy course called MOSAIC (Making Sense of Information in the Connected Age) (Needham, Parker, & Baker, 2001).

Many libraries provide instruction to e-learners by making information available on their Web pages, including frequently asked questions, library glossaries, research guides, and “how-to” pages. Athabasca University Library’s Digital Reference Centre integrates resources with contextual instruction and provides links to instructional resources, including a detailed guide to Internet searching that encourages e-learners to think critically about Internet resources (http://library.athleteascan.ca/drc/intro.htm), and library research guides such as the AU Library Guide to Researching Topics in Women’s Studies (http://library.athleteascan.ca/help/wmst/intro_wmst.htm).

Online tutorials usually operate on a model in which the e-learner interacts in isolation with a computer. Their effectiveness can be enhanced by the addition of more interactive forms of instruction. The librarians at the Florida Distance Learning Reference and Referral Center, for example, have experimented with chat software to simulate a virtual classroom and open up “live” group instruction to e-learners (Viggiano & Ault, 2001). Librarians can also work with faculty to develop a library thread in
a course discussion area, or to open a discussion forum on the library Web pages.

The Successful Virtual Library: Partnership and Collaboration

In reviewing definitions of the virtual library, Sloan (1998) identifies an emphasis on the technological and informational building blocks, and a neglect of human components, such as the service tradition and human interaction. The continuing changes in technology have been truly astonishing, and the scope for building new information services and new ways of representing content seem unlimited. However, it is very important to remember that investment in human capital is also a strategic investment, especially when introducing new technologies, procedures, and processes. Although technology is the key infrastructure of the virtual library—a tool used to support library goals—human factors are the most important determinants of the success of the virtual library.

The digital library serves mainly as a facilitator in organizing and providing knowledge and resources to its users. Sharing knowledge and information among library staff, researchers, faculty, students, and other departments within the institution encourages them to work together, develop their skills, and form strong and trusting relationships.

A focus on collaboration between the library and the faculty promotes a responsive approach to course design and supports teaching and learning objectives, particularly when this collaboration incorporates student contributions and feedback. All parties must have a common vision in which each one participates actively by contributing their skills and perspectives to the building of a genuine partnership. This new approach considers the library as an active partner of the learning community, helping learners to become “information literates” by integrating information literacy skills into the curriculum. For example, the library can help learners to evaluate critically the authority and authenticity of the resources they find, and to enhance their critical thinking skills. The library can also offer support to learners, and can mentor their
work by offering one-to-one communication and interaction, and by achieving a deeper level of understanding of what learners need.

From a research perspective, a number of models can be involved in creating an environment that is responsive to the scholarly information needs of a diverse group of e-learners. Librarians locate, select and describe quality Internet resources, and provide access to journal databases and electronic book collections, providing e-learners with full-text content from a wide range of online resources and publications, including peer-reviewed journals. Within this framework, the library works with faculty, researchers, scholarly societies, and publishers in developing and managing a collection of enriched online scholarly resources. Such a partnership enables researchers to interact with others, exchange experiences, and publish their works online. The library role is thus transformed from simply being a provider of library resources, into meeting the ongoing support needs of the parties involved. The library also serves to foster research skills by encouraging students and other learners to search, investigate, discover, and take advantage of these valuable online resources.

Management support is as much a key to success in developing the virtual library as in any other project. Athabasca University’s strategic plan incorporates a distinct section related to library strategies and projects, and explains how these strategies are aligned with the overall mission of the University. A virtual library should have a high profile leader, a key person who can work to obtain the support of the institution’s management and promote a climate of change.

In addition, the leader must work with different groups within the institution to ensure that the project responds to their specific needs and goals. For example, when Athabasca University Library initiated the Digital Reading Room project as an enhanced electronic course reserves system, the Library entered into partnership with the Educational Media Development unit to ensure a best practices approach to Web- and visual-design aspects. Consultation with faculty has been an ongoing element of the project, with faculty selecting content and acting as consultants in evaluating the design and functionality of the DRR in relation to their course development and delivery needs.

All staff involved in providing library support to e-learners must be included in the partnership. Technological changes have been
the dominant force reshaping library services. Instilling a culture of sharing, motivation, equity, and active partnering encourages library staff to respond positively to the changing roles, responsibilities, and skills that the integration and use of technology requires. A well-designed, ongoing training program enables library staff to upgrade their skills to their new assignments, and helps them to understand and control fear of change.

External partnerships, collaborative efforts, and consortia form another important bridge to the effective support of e-learners. Within Canada, university libraries extend in-person borrowing privileges to students, faculty, and staff from across the country through the Canadian University Reciprocal Borrowing Agreement (Council of Prairie and Pacific University Libraries et al., 2003) (http://www.coppul.ca/rb/rbindex.html). There are also initiatives to share virtual reference desks, such as the National Library of Canada's Virtual Reference Canada (http://www.nlc-bnc.ca/vrc-rvc), which allow learners to benefit from the range of information resources and staff expertise available at a variety of participating institutions. Consortial approaches to database subscriptions enable libraries to expand the scope of the electronic resources they are able to offer their learners in a time of shrinking budgets and escalating journal costs. The Canadian National Site Licensing Project (http://www.cnslp.ca) negotiates licensing agreements that permit participating universities across Canada to access a suite of research databases in the science, engineering, health and environmental disciplines.

Conclusion

In summary, library services are an essential component of a quality online learning system. As access to Internet-based courses grows, an increasing number of e-learners are dispersed around the globe, often in parts of the world where physical access to the collections of large academic and research libraries is impossible. These learners are largely dependent on the quality and academic usefulness of services that the library can offer electronically. The strength of virtual libraries and digital collections depends on the relationships libraries develop and maintain with the creators,
publishers, and aggregators of e-resources, as well as with those who use, learn from, and evaluate these resources. Providing ongoing technical, reference, and instructional support to e-learners requires that libraries redefine their values and services, collaborate with their users, and approach their tasks creatively.

References


