



CHAPTER 16

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

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INTRODUCTION

The growth of e-learning or online learning, in which education is delivered and supported through computer networks, is transforming academic libraries. E-learners and traditional learners have access to a universe of digital information, which frequently removes the need to visit a physical library. 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 provided services to distance learners that are equivalent to those available to on-campus learners (Slade & Kascus, 1998); 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) (see <http://www.cla.ca/about/distance.htm>) and the Association of College and Research Libraries' *Guidelines for Distance Learning Library Services* (2004) (see

<http://www.ala.org/ala/acrl/acrlstandards/guidelinesdistancelearning.htm>). Both the Canadian and American *Guidelines* recognize that distance learners frequently do not have direct access to the full range of library services and materials, and that this necessitates equitable services that are more personalized than might be expected on campus. The library literature provides a rich record of service models and best practices; as such, there has been an explosion of publications as librarians consider ways to support learners in a networked environment (Slade, 2000).

What do e-learners need from librarians? Suggestions advocating changes to 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, as teachers and learners, 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 provide remote access to, and electronic delivery of, library resources, and use 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 others. The library is seen as a source of training and guidance to a community of learners 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 librarian serves as a facilitator by offering ongoing support which enables 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 endeavour to make available rich collections of online scholarly information resources.

This chapter examines how libraries are responding to the challenges of delivering core services and library resources to e-learners. We look at library practices and technologies being applied in the development and maintenance of virtual libraries. We also consider the challenges and opportunities that 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 the 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, including library and academic resources, the sites of governments, non-governmental organizations, corporations and professionals, mainstream and alternative news, and an immense

blogosphere. Librarians have traditionally selected and organized limited collections of resources with great care and provided assistance and instruction to their patrons in accessing and using these collections. Their task in the information age is to rescue e-learners from information overload, and to foster the competencies and critical reflection required to navigate an information environment characterized not by scarcity but by abundance and a multiplicity of formats and voices. A virtual library links e-learners to library catalogues, licensed journal databases, electronic book collections, selected Internet resources, electronic course reserves, tutorials, and to opportunities for communication and interaction with librarians. The virtual library permits e-learners to access and use 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 inequalities such as access to computing equipment, the availability, speed, and stability of Internet connections, and the information skills required 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.

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, 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, 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 portal and an entry point to a range of online resources, with the library catalogue and journal databases as key components. Most online catalogues permit the integration of electronic books and electronic journals, enabling users 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.

A number of electronic tools have come into play recently in the provision of distance library services. Federated search tools such as *WebFeat* (see <http://www.webfeat.com/home/index.cfm>); *dbWiz* (see <http://dbwiz.lib.sfu.ca/dbwiz/>), an open-source product created at Simon Fraser University Library (n.d.); and *Google Scholar* (see <http://scholar.google.com>) allow users to search a number of electronic resources simultaneously, using one interface. Libraries have the capability to customize the federated-search tool so that it searches a given set of electronic resources. Federated-search solutions offer e-learners a faster and easier way to search multiple resources, but they can also be a good starting point for researching a topic, in that they can help to identify the most suitable databases (McCaskie, 2004), a task which is often extremely challenging in the world of ever-expanding digital resources.

Google Scholar searches for scholarly articles, books, and other resources. Indexed items come from a variety of sources, including “academic publishers, pre-print societies, universities and other scholarly organizations” (Google Scholar, 2007). These items may be available online, or they may only be available in print. While having the ability to search for multiple resource types in one place is beneficial to the user, what makes *Google Scholar* so important is that it allows users to choose which libraries they want to search. *Google Scholar*’s Library Links program allows libraries that use *link-resolving software* to make their library holdings available in *Google Scholar*’s results lists. An e-learner, wishing to access a particular article, clicks on the link to the library to retrieve a list of databases that hold the article; the e-learner must then provide identifying information to enter the database via the library’s authentication process in order to access the article. *Google Scholar*’s Library Links program also makes it possible to search library catalogues for items held by local libraries. Through a partnership with Online

Computer Library Center (OCLC)'s Open WorldCat project (<http://www.worldcat.org/whatis/default.jsp>), it is possible to search the collections of libraries whose holdings are in OCLC. A more recent addition is the ability to search AMICUS, the catalogue of Libraries and Archives Canada (see <http://www.collectionscanada.ca/amicus/>).

Link-resolving software products, such as *SFX* from *ExLibris* (see <http://www.exlibrisgroup.com/sfx.htm>), and *WebBridge* from *Innovative Interfaces Inc.* (see <http://www.iii.com>), allow users to *link out* from one database to another to retrieve full-text articles. Link resolvers or *link servers* work with open URL-compliant databases, and pass the user's library authentication information from one database to another, thereby allowing seamless access to full-text content without requiring the user to log in again. If an item is not available from an open URL-compliant database, link resolvers can direct users to search other library resources, including library catalogues and A-Z serials lists. All learners benefit from these products because they allow greater access to full-text materials without needing to search a number of databases; however, for online learners – and in particular those who are internationally based – the immediacy of retrieval is especially important. Providing easy online access and reducing the need to request print copies of articles enables libraries to provide better service to e-learners, and increases the e-learners' sense of connectedness to their library.

Personalized digital libraries have become another way to increase the connectedness of e-learners. While the tools mentioned above provide e-learners with greater access to resources, personalized digital libraries “streamline access to frequently used resources and create a friendlier online environment by permitting users to build their own digital collections in a personal workspace” (Johnson & Magusin, 2005, p. 129). One of the earliest instances of a personalized digital library was *MyLibrary@NCState*, which was released in 1998 as a way to combat the information overload that learners were facing, due to the library's recent expenditures on electronic resources (Morgan & Reade, 2000). The system requires learners to choose an area of academic interest during the account creation process (Morgan, 1999) and was developed in a way that can assist librarians in making collection management decisions, as it is possible to study the usage patterns of subscribers. The Open University of the UK has developed a pilot project called *MyOpenLibrary* (see <http://myopenlibrary.open.ac.uk/>), a personalized environment for their learners that uses the *MyLibrary@NCState* software, which was made public in 2000. According to the web site, *MyOpenLibrary*

is “a personal library page, which knows who you are, what you are studying and presents the relevant electronic library resources...selected from Open Library” (Open University Library, 2005). It allows learners to select their own resources, as well as having resources supplied to them, based on the courses which they are registered in. Other examples include *MyCybrary* at the University of Winnipeg Library (see <http://cybrary.uwinnipeg.ca/myCybrary/index.cfm>), which offers learners opportunities to check their library account, keep up to date on new resources, and manage personal information services.

Librarians have become increasingly creative in enhancing their web sites. Because not all e-learners have physical access to reference tools – quick fact-finding tools that are the staple of library collections – libraries can perform a valuable service by providing learners with pointers to online versions. Athabasca University Library’s Digital Reference Centre (see <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 Open University Library’s *ROUTES* database (1999; 2004) contains quality-assessed, course-related Internet resources (see <http://routes.open.ac.uk/>).

It is impossible to ignore the phenomenon called “Web 2.0.” There has been an explosion in the number of web users who are creating social content through weblogs, wikis, social bookmarking, podcasting, and other means (see Anderson, Chapter 12 in this volume). Librarians are increasingly cognizant of these tools, and have been investigating how they can be used within the library to provide services and instruction to learners, as “Library 2.0.”

Weblogs are used by librarians in a number of ways. Blogs, such as *The Distant Librarian* (see <http://distlib.blogs.com/distlib/>) and *The Shifted Librarian* (see <http://www.theshiftedlibrarian.com/>), are designed as professional development tools for librarians. In other instances, blogs are used by librarians to keep patrons up to date on issues in the library, and to answer frequently asked questions. An example is *Frequently Asked Questions* (see <http://frequanq.blogspot.com/>), a blog maintained by the distance education librarian at Southern Connecticut State University. Weblogs can also be used for instructional purposes. Georgia State University Library (see <http://www.library.gsu.edu/news/>) has created subject-specific blogs that provide information about new resources in particular subject areas.

Social bookmarking, or social tagging, is a way for users to classify and share resources with others. Users assign tags, or keywords, to the sites that they bookmark, and these tags are then used in finding materials. This *folksonomy*, or informal classification, has exploded in popularity on the Web. A number of different social bookmarking sites are available, including del.icio.us (see <http://del.icio.us/>), CiteULike (see <http://www.citeulike.org>) and FURL (see <http://www.furl.net>). Some scholars and librarians are choosing to use these tools as a way to classify materials in their area of interest. Social tagging is used in academic libraries as a way to allow users to add content to the library web site. These resources may be in the form of web sites, bibliographies in specific content areas, or other items. The University of Pennsylvania Libraries created *PennTags* (see <http://tags.library.upenn.edu/>), a service that can be used by members of the University of Pennsylvania community. In addition to allowing users to tag web sites, *PennTags* allows users to tag resources from library catalogues, magazines, journals, and newspapers. It is possible to annotate resources, which can increase the pedagogical benefits associated with the use of social bookmarking. Integrated library system vendors are also beginning to explore the possibilities created by social tagging. For example, Innovative Interfaces Inc. is in the process of developing a new product called *Encore* (see http://www.iii.com/encore/main_index2.html), which allows librarians and patrons to tag resources found in library catalogues, including e-resources.

As libraries work to enhance their presence on the Web, a growing number have incorporated 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 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 (see <http://ecr.sdsu.edu/>). SDSU uses *Docutek ERes* (2000-2007), a system that provides access to course readings, chat rooms, and bulletin boards. Many other libraries have initiated their own projects, using commercially available products or systems developed in-house. The library literature points to a diversity of approaches (Calvert, 2000; Lowe & Rumery, 2000; Algenio, 2002; Wilson, 2002; Warner, 2006).

Athabasca University Library’s Digital Reading Room (DRR) (see <http://library.athabascau.ca/drr/>) is an e-reserves system developed

in-house at Athabasca University, using open-source software. Scanning and mounting hardcopy materials is time consuming and requires securing of copyright permissions. The DRR encourages optimizing the value available from the library's electronic subscriptions through direct, persistent linking to content from the subscribed databases. Each course in the DRR has a *digital reading file*. The licensed contents, such as journal database articles, require authentication through the library's proxy server, permitting only Athabasca University's 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 courses, providing a multidisciplinary approach to course reserves. By encouraging the inclusion of resources in a variety of digital formats, such as video, audio, and simulations, the DRR supports a wide range of learning objectives and styles.

Managing the remote access and authentication issues involved in making digital resources available has become a significant area of support to users of virtual libraries (Hulshof, 1999). Librarians may be called upon to respond to questions concerning login 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 is 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 to contact the library, including email, web forms, and a toll-free telephone number.

LIBRARY SERVICES: CHALLENGES AND OPPORTUNITIES

The provision of appropriate and meaningful reference and instructional services to e-learners is fraught with both challenges and opportunities.

Reference

E-learners require more than access to e-resources. Traditionally, a reference librarian acts as an additional resource, someone 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 email, 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 email enables e-learners to connect with librarians beyond the walls of library buildings and outside the usual hours of operation. Email 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 email reference services is their impact on traditional face-to-face reference interviews, particularly the absence of verbal and non-verbal cues, which typically assist a librarian in effectively responding to a question.

A well designed reference web form, such as that provided on the Athabasca University Library’s “Ask about a Research Topic” web page (see <http://library.athabascau.ca/about/contacts.php>), encourages e-learners to include full identifying and course information. This web page encourages users to clearly describe their research problem and search terminology, and to state the parameters of their assignment. The feature also clarifies requests for librarians and reduces the need for email (Sloan, 1998). Automated email replies sent out in response to the receipt of a message reassure e-learners that their messages have been received and lets them know what to expect in terms of service.

Email reference service can be enhanced and supplemented with additional technologies that raise the level of interaction via real-time 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. A number of issues surround the use of chat in the provision of reference services to remote users. Choosing the appropriate program for the library’s specific needs and resources is essential if the virtual reference initiative is to be successful. Available programs range from vendor-based systems that offer features such as “co-browsing, patron queuing, sharing files, and the ability to keep more extensive statistics” (Ward & Kern, 2006, p. 417-418), to instant messaging programs, which are freely available. Some chat programs require downloads on the part of users, which can be problematic and may also discourage e-learners from using the service. In an effort to reach more e-learners, some libraries have begun using instant messaging programs such as AOL’s *AIM* product, MSN’s *Messenger*, and *Yahoo!*

Messenger, primarily because many e-learners are already using these systems. More recently, libraries have begun experimenting with programs such as *Trillian* (see <http://www.ceruleanstudios.com/>) and *Pidgin* (formerly Gaim; see <http://www.pidgin.im>), which log into a number of instant messaging accounts simultaneously and allow librarians the flexibility to respond to instant messaging questions coming into the library, no matter which system the e-learner is using. This reduces the need to monitor several different instant messaging programs at the same time.

Virtual reference consortia have the potential to expand the library's abilities to serve its community of users effectively. Libraries in the consortia answer questions from e-learners in other parts of the consortium service area. Traditionally, chat reference services are only available during specified hours, so virtual reference consortia are beneficial for e-learners in different time zones than their home institution, because they increase the likelihood of a librarian being available to answer questions immediately. Even if the initial reference transaction is received through chat, however, it may ultimately prove difficult to provide a complete answer using this method. If a user requires assistance in learning how to use a particular library resource, it may be possible to provide a complete response via chat. However, if the user is requesting assistance to find information on a complex topic, the librarian may need time to determine appropriate search strategies before responding. In these cases, the follow-up response is often done by email. 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 many different interfaces and search tools, and the need for evaluation and critical thinking when using the Internet for research, information literacy skills are essential. Information literacy has been defined in relation to competencies, with information sources in a variety of formats. According to the Association of College and Research Libraries (2000), an information-literate student

1. determines the nature and extent of the information needed.
2. accesses needed information effectively and efficiently.

3. evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.
4. individually, or as a member of a group, uses information effectively to accomplish a specific purpose.
5. understands many of the economic, legal, and social issues surrounding the use of information, and accesses and uses 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). A discussion is also emerging around the need to promote critical reflection in relation to information and knowledge, to conceptualize a *critical information literacy* that goes beyond a focus on competencies. Critical information literacy draws on scholarship in critical theory and critical education to provide librarians with a theoretical framework that acknowledges their responsibility to help students see that knowledge is not neutral but socially constructed and contested (Luke & Kapitzke, 1999; Simmons, 2005; Elmborg, 2006). Teaching the value of incorporating peer-reviewed journals in research papers, for example, need not preclude a discussion about how alternative voices may be silenced by the peer-review process and how to find alternative literature.

As an extension of their traditional role in providing library instruction sessions and developing instructional materials, librarians design online tutorials and courses that promote information literacy and encourage active learning. Particularly fine examples are the University of Texas System Digital Library's (1998-2004) TILT – Texas Information Literacy Tutorial (see <http://tilt.lib.utsystem.edu/>); and Utah Academic Library Consortium's (2001) Internet Navigator (see <http://medlib.med.utah.edu/navigator/>), a multi-institutional online course developed by a team of librarians and web developers. The Open University Library created SAFARI (2001) (see <http://www.open.ac.uk/safari>), a freely available interactive tutorial, as well as an information literacy course called Making Sense of Information in the Connected Age or, more commonly, MOSAIC (Needham, Parker, & Baker, 2001). Athabasca University offers the undergraduate course, Information Systems 200: Accessing Information (see <http://www.athabascau.ca/courses/infos/200/>).

Many libraries provide instruction to e-learners by making information available on their web pages, including research guides and “how-to” pages. See, for example, Athabasca University Library's Help

Centre (see <http://library.athabascau.ca/help.php>). An awareness of the importance of context-specific help has grown and it is quite common to find links to tutorials at the point of need. Software packages for developing animated tutorials, such as ViewletBuilder (see <http://www.qarbon.com/>), Camtasia (see <http://www.techsmith.com/camtasia.asp>), and Captivate (see <http://www.adobe.com/products/captivate/>) enable librarians to demonstrate effective database searching techniques asynchronously. Brief tutorials that incorporate voice-over and demonstrate database features within the context of real searches are particularly effective. Joining an existing, collaborative initiative reduces workload and removes the need to “reinvent the wheel.” The Council of Prairie and Pacific University Libraries (COPPUL), a consortium of twenty university libraries located in Manitoba, Saskatchewan, Alberta, and British Columbia, is responsible for the *Animated Tutorial Sharing Project (ANTS)*. Participating libraries, including libraries outside of COPPUL, access a wiki where they can adapt databases for tutorial development, upload tutorials, and download tutorials developed by other libraries (see <http://www.brandonu.ca/Library/COPPUL/>).

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 a “live” group instruction to e-learners (Viggiano & Ault, 2001). Librarians can be incorporated through the learning management system, participating in online courses as teaching assistants, co-instructors, or co-designers. This ‘embedded librarian’ approach increases learner awareness of the value of the library in research and scholarship, and improves access to the expertise of librarians within the context of course needs and assignments (Matthew & Schroeder, 2006; Ramsay & Kinnie, 2006).

In addition, podcasting and video clips have become a popular choice in the delivery of instructional materials to remote users, as libraries recognize the popularity of mobile devices such as the *iPod*®. According to a Pew Internet and American Life survey, “more than 22 million American adults own iPods® or MP3 players, and 29% of them have downloaded podcasts” (2005, p.1). These methods allow e-learners to access the materials “anytime, anywhere,” while still providing them with the type of instruction that their on-campus counterparts may receive. Tutorials range from a simple orientation to the library and

its services to more in-depth tutorials on the research process or searching specific databases. For example, Mount Allison University Library (2006) makes audio *libcasts* available (see <http://www.mta.ca/library/libcasts.html>). These libcasts can be downloaded or subscribed to and listened to, using *iTunes*® or a similar product.

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 the 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. Although technology is the key infrastructure of the virtual library – a tool used to support library goals – human factors are the most important determinant of the success of the virtual library. As noted by Colgate, Buchanan-Oliver, and Elmsly (2005), technology could cause problems in building relationships because of the difficulty in developing a successful rapport between people via remote contact. One of the major challenges that virtual libraries face is the lack of opportunity for face-to-face reference service and communication. Combine this with a lack of awareness of library services (Nicholas & Tomeo, 2005) and the end result is poor communication between library staff and e-learners.

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. One method which can be effective in the development of strong relationships with faculty is the librarian-liaison role, where a librarian liaises with specific departments regarding resources, library services, and the provision of instructional support for students in those departments (Glynn & Wu, 2003). When the liaison focuses on building effective channels of communication and understands the effects of technology on communication, it becomes easier to share knowledge and information among institutional stakeholders. In addition, the 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. This approach considers the library as an active partner of the learning community, helping e-learners to become “information literates” by integrating information literacy skills into the curriculum. The library can help e-learners to think critically about information, offer reference and instructional support, mentor their work by offering one-to-one communication and interaction, and work collaboratively with them to achieve a deeper level of understanding of what e-learners need.

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 select, describe, and ensure access to quality digital resources, providing e-learners with content from a wide range of resources and publications, including peer-reviewed journals. Within this framework, the library works with faculty, researchers, scholarly societies, and publishers to develop and manage 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 providing library resources to meeting the ongoing support needs of the parties involved. The library also fosters research skills by encouraging e-learners to search, investigate, discover, and take advantage of these valuable online resources.

Further, senior management support and involvement is as much a key to success in developing the virtual library as in any other project. They need to work closely with the library staff to understand the nature of services, values, and support the library should be offering, and to adopt successful communication and interaction strategies. An institution providing distance and online education has an ethical obligation to ensure that its learners have access to appropriate library support. The Canadian Library Association *Guidelines* (2000) categorize responsibilities in terms of funding, administration, personnel, facilities, resources, services, publicity, and professional development of librarians. The *Guidelines* note as essential advance planning by the library in consultation with faculty, program administrators, and other appropriate campus personnel, and with librarians at unaffiliated libraries. The *Guidelines* also advocate that leadership should come from all levels of the institutional administration, but particularly from the library.

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.

The home institution has primary responsibility for library support, but can benefit from external partnerships, collaborative efforts, and consortia in supporting 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., n.d.; see <http://www.coppul.ca/rb/rbindex.html>). There are also initiatives to share virtual reference desks, such as the Library and Archives Canada's Virtual Reference Canada (see <http://www.collectionscanada.ca/vrc-rvc/index.html>), through which e-learners benefit from the range of information resources and staff expertise available at a variety of participating institutions. Consortia approaches to database subscriptions enable libraries to expand the scope of the electronic resources they are able to offer their e-learners in a time of shrinking budgets and escalating journal costs. *The Lois Hole Campus Alberta Digital Library (LHCADL)* initiative, through funding provided by the Government of Alberta, provides participating post-secondary institutions in Alberta with digital information resources for teaching, learning, and research (The Alberta Library, 2006; see <http://www.thealbertalibrary.ab.ca/viewChannel.asp?channelID=3>). *LHCADL* includes an information literacy and awareness component dedicated to sharing expertise and training resources with participating libraries.

CONCLUSION

In summary, library services are an essential component of a quality online learning experience. As access to online 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 or severely limited. 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 other partners, and approach their tasks creatively.

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