DISTANCE LEARNING AND DIGITAL LIBRARIES: THE UP OPEN UNIVERSITY EXPERIENCE*

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Abstract

Libraries have enjoyed a long and colorful history in their efforts to deliver information services to patrons outside the library. Since library support is an integral part of quality education and a vital service that should be available to all students whether on-campus or off-campus, librarians have sought to provide services to distance learners that are equivalent to those available to on-campus learners. 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 and the Association of College and Research Libraries Guidelines for Distance Learning Library Services, which recognized that distance learners frequently do not have direct access to the full range of library services and materials. In this situation, the goal of equity makes it necessary that librarians provide services that are more "personalized" – tailored to the needs of the online learners – than those provided on campus. This paper tackles several issues on online library support such as: access to library resources and services, the interaction of library to its users and other information providers and how these library resources and services can be delivered to online learners. In addition, the experience of the UP Open University library was described through its mission-vision, collection status, infrastructure, online services and delivery in the light of points mentioned.

INTRODUCTION

What is Distance Learning?

We shall first look briefly at the nature of distance learning, then focus more on the role of digital libraries in its delivery. We start with a definition of distance learning, or distance education.

According to the Commission on Higher Education [CHED] Policy on Transnational Education Memo No.6 s2003, distance learning or distance education is "a mode of educational delivery whereby teacher and learner are separated in space and time and instruction is delivered through specially designed materials and methods and is supported by organizational and administrative structures and arrangements. Distance education may utilize various types and combinations of print- and non-print-based learning methods. Face-to-face tutorials or virtual discussion groups may support learning."

ICTs in the Delivery of Distance Learning

To bridge the barriers of time and space, distance education must necessarily use a variety of ICTs to present the learning materials and provide for interaction, as well as student support.

The term "information and communication technologies" is used here as an embracing concept that includes the systems, processes, and people that are involved with technologically mediated communication. ICTs refer to "a diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information (Blurton, 1999, p. 46). The concept is not limited to the popular perception that ICTs are the hardware devices or that ICTs refer to the newer forms of technology associated with the Internet revolution.

Generation of ICTs in Delivering Distance Learning

The development of distance learning in the Philippines can be divided into five phases or generations, reflecting the influence of the advancements in information and communication technologies. There is no clear demarcation as to the end or start of a particular generation but, rather, the characterization is based mainly on the dominant technology used in delivering instructional content and support services to students. It should be noted, however, that central to all these generations and explorations and innovations in the use of technologies is the effort to reach as many students as possible.

First Generation Distance Learning

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Before the establishment of the University of the Philippines Open University (UPOU), the use of radio to deliver instructional content to farmers, housewives, out of school youths and other targeted sectors, also known as the school on the air, can be said to be the first generation distance education in the Philippines. This was the prevalent system of distance learning since the early 50's up to the pre-UPOU years.

Second Generation Distance Learning

Second generation distance learning came about with the implementation of degree programs delivered through the distance mode and characterized mainly by the use of print for the instructional materials supplemented by once-a-month face-to-face study sessions. This was the system initially used by the UPOU with face-to-face study sessions held in Learning Centers located in strategic areas of the country. The main course materials were print course modules written especially for the distance learner, with accompanying course guides, study guides, and assignment guides, all in printed form. Supplementary materials are readings were made available through the UPOU Library in Los Baños and in the various Learning Center mini-libraries.

Third Generation Distance Learning.

In 1997, UPOU started using the teletutorial format, where learners gather around a speaker phone (starfish) to interact with their lecturer or tutor. With the teletutorial, UPOU was able to offer programs in all Learning Centers even if the number of enrollees per course was small. For more cost efficient operations, two to three learning centers were linked during tutorials through the telephone with the tutor in just one area or learning center, usually university-based. Course materials were very like those used in the 2nd generation, that is, print modules and adjunct materials. Digital materials were now used, in the form of supplementary materials in CDs.

At this stage, it was observed that more and more students were taking greater responsibility for their own learning. Also, more and more were making use of other information and communication technologies to consult their professors and do other course/academic-related activities.

Fourth Generation Distance Learning

Thus, UPOU went into the fourth stage, with program and course delivery now done through a mixture of multimedia materials and the application of various ICTs. The dominance of these technologies in

UPOU's operations became pronounced in 2001 when the decision was made to put in place an online tutorial system for most of the courses of the university. In addition to learner-instructor, learner-learner, and learner-material interaction, there is learner-interface interaction through a Learning Management System, which is also supplemented by a lot of online activity such as email and chatting, as well as webcasts and podcasts.

Convergence

One of the most important reasons for shifting our focus to the potential of digital ICTs concerns the concept of "convergence" of technology. The *convergence of technology"* refers to the meeting place between advances in telecommunications and advances in computing that are made possible by storing and communicating data in a binary digital format that is characterized by openness, integration, connectivity, and flexibility. To date, almost 100% of UPOU courses are delivered online, and students make use of a variety of ICTs in one or more study-related concerns.

Fifth Generation Distance Learning

Currently, we are moving into what might be called as Stage 5 distance learning. Online courses are still delivered through a Learning Management System but we are increasingly moving towards resource-based course packages. This means that instead of having a main textbook or set of course modules authored by one writer or team of writers, instructors now look for various resources to help them achieve course goals. Many such resources are Web-based publications and other materials in digital format such as podcasts, webcasts. And, increasingly, we are making use of the features of Web 2.0 such as blogs, wikis, shareware, and virtual communities. We are also looking at the potential of mobile technology in the course delivery process.

Needless to say, with the advent of Stages 4 and 5 of distance learning, digital libraries are becoming more and more vital in the delivery of online courses and programs.

Role of Libraries in Distance Learning

Library support is an integral part of quality education and a vital service that should be available to all students whether on-campus or off-campus (Kascus & Aguilar, 1988). Libraries have enjoyed a long and colorful history in their efforts to deliver information services to patrons outside the library. These services have ranged from bookmobiles to remote airdrops.

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The advent of electronic networks and interlibrary cooperation now permits vast mounts of information to be delivered to patrons who do not have to set foot in the institution where the information originated. Faxes, phone lines, computers and satellites all constitute an awesome telecommunications infrastructure that stretches around the globe to link individuals effectively and efficiently (Ferrel, 1983).

Historically, librarians have sought to provide services to distance learners that are equivalent to those available to on-campus learners, and these 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) *and the Association of College and Research Libraries Guidelines for Distance Learning Library Services* (2000).

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. In this situation, the goal of equity makes it necessary that librarians provide services that are more "personalized" – tailored to the needs of the online learners – than those provided on campus. This brought about several issues on online library support such as: access to library resources and services, the interaction of library to its users and other information providers and how these library resources and services can be delivered to online learners. Library literature provides a rich record of service models and best practices, and there has been an explosion in publication as librarians consider way to support learners in a networked environment.

ISSUES

Access

Adequate access to good library facilities is important to distance learners despite the provision of self-study materials. A study by Unwind in 1994 reports that distance learning students wish to see themselves as "real students" and that using the library is regarded as an important component of an authentic learning experience. Students need to go beyond the provided materials in order to develop investigative skills and adequate subject matter expertise (Stephens, Unwind & Bolton, 1997).

Provision of library support for distance learners is a responsibility that rests with the institution offering courses or programs. The 1998

revision of the ACRL Guidelines for Distance Learning Library Services states:

> *Library resources and services in institutions of higher education must meet the needs of all their faculty, students and academic support staff, wherever these individuals are located, whether on a main campus, off campus, in distance education or extended campus programs, or in the absence of a campus at all ... Students and faculty involved in distance learning programs are entitled to library services and resources equivalent to those provided for students and faculty in traditional campus settings. (ACRL, 1998).*

Interaction of key players

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.

Johnson, Travels and Tin (2004) state that "providing support to e-learners", refers to a wider community of learners that the term "student" suggests. Students, faculty, staff, researchers, and so on may be considered an academic library's learners. 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. To illustrate, in the traditional model, the librarian or the library provides a bridge between learners and information providers by selecting and cataloguing resources and by providing assistance with these resources (See Figure 1). 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 collection of online scholarly information resources (See Figure 2).

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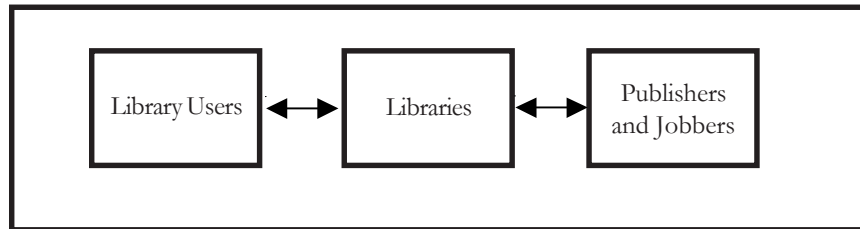
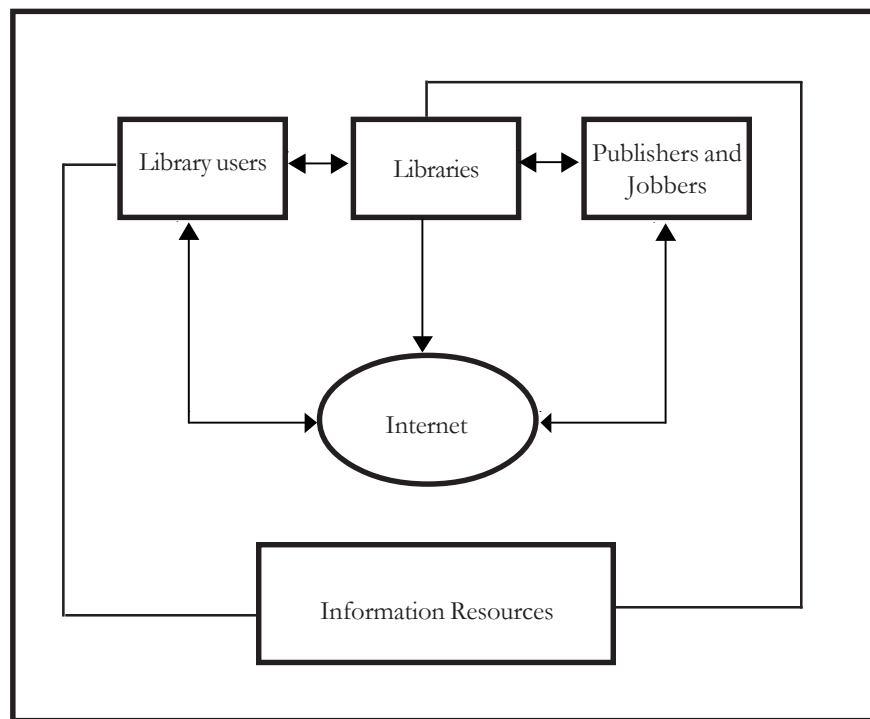**Figure 1.** Traditional model of interaction of the library with users and suppliers of information.

Figure 2 New Model of Interaction of the library with users and suppliers of information

Delivery of services

Libraries have always been collectors and preservers of information. Until the early 1900's almost all of these information materials were in print, microform or audiovisual formats. Bound by these publication formats, library service was limited to onsite information delivery and assistance in accessing the materials housed in the library.

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 and a whole lot more. Again, traditionally, librarians have selected and organized resources with great care. The move from the traditional library to a something that is virtual or digital sometimes electronic in nature library, allows the librarian the opportunity to provide e-learners with direction and rescue them from information overload. In a virtual library, defined as the concept of remote access to the contents and services of libraries and information resources combining an on-site collection of current and heavily used materials both print and electronic form with electronic network which provides access to and deliver from external worldwide library and commercial information and knowledge sources, e-learners are directed by links 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 delivery of services is majority through the Internet within the bound of Copyrights.

CHALLENGES

According to Nicholas (2004) "Librarians have responded to the challenge of supporting e-learners in a number of now familiar ways: remote access to online databases, virtual reference services, online tutorials, e-reserves, document delivery, and the development of web- based portals and gateways." However, 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.

E-mail has been the most common means of providing electronic reference services to remote users. (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, allows electronic transmission of search results, and permits librarians time to reflect on requests.

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However, one of the most serious concerns about e-mail reference services is their impact on the traditional face-to-face reference interview, wherein the verbal and non-verbal cues that typically assist a librarian in effectively responding to a question is absent. 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. The introduction of the chat technology allows e-learners and librarians to send text messages back and forth instantly, using a form of communication that is most familiar to Internet users. Provision of toll-free telephone number to e-learners can be 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.

UP Open University Experience

The UPOU Library is envisioned as a service for distance learners, as it is one of the most heavily used units in the university. It is one of the key components of a scholarly communication system. Thus, the following mission and goals of the UPOU Library were conceptualized:

Mission

The mission of the UPOU Library is to provide library resources that meet the information needs of the UPOU faculty, staff and students wherever these individuals are located; and to provide an information service to UPOU constituents that is responsive and innovative.

Vision

The UPOU Library shall have goals and objectives that are consistent with the broader institutional mission and services that are supportive of the needs of the distance learning community. The UPOU Library shall provide fast access to information resources required by the distance learning community. It will provide services that will enable the onsite and offsite users to retrieve information in various formats and receive information literacy instruction. The UPOU Library will be an

electronic library with collections in multimedia formats that are accessible to all the members of the UPOU community and will have pointers to other information sites where information could be downloaded either for free or for a minimal fee.

Present Status

In the absence of local standards, The ACRL guidelines has served as UPOU main reference in the conceptualization, delivery and improvement of the library services to distance learners.

Collection

Since the establishment of the UPOU in 1995, its management has provided funding for the acquisitions of library materials in support of the courses offerings of the university. However, it was only in 1999 that an exclusive library space was constructed. Today, the UPOU library houses around 4,400 volumes of book, audio visual materials, local and foreign modules carefully selected and acquired through the assistance of full time and affiliate faculty members from the three (3) Faculty offices of UPOU. These materials are bar coded before cataloged using the Library of Congress Classification Scheme and are directly added to the library database through the Local Area Network. Bibliographic information of these library materials, some including their table of contents, is accessible through the UPOU Library homepage at http://library.upou.org. As of December 2006, the top ten check out by class of library users is illustrated in Figure 3.

Infrastructure

In 2002, an integrated library system software database, "The Library Solution" was acquired by the UP System for its modernization project which was given to nine (9) constituent university libraries except UP Diliman which acquired Maelisa. In the same year, the library homepage was published in the web. UPOU learners all over the Philippines and some abroad, faculty and affiliate faculty not within a few meters from the UPOU library, staff and other library patrons can access the UPOU library online public access catalog anytime they want and anywhere they are, making physical visit to the library less necessary. The software acquired by the UP System provided for easy access and delivery of services to residential and remote users that needs appropriate information at the right time when they need it.

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Top Ten Check Outs by Class	
1. LB class (Theory and Practice of Education	178
2. H class (Social Science in General)	89
3. HD class (Management)	88
4. P class (Language and Literature – Mass Comm)	86
5. QA class (Mathematics and Computer Science)	79
6. LC Class (Special Aspects of Education)	67
7. HQ class (Natural History, Biology, Statistics, Genetics)	32
8. GE class (Environmental Sciences)	29
9. T class (Technology)	26
10. R class (Medical)	26

Figure 3. Top ten checkouts of distance learners by class

Online services and delivery

1. UPOU Library Webpage

The UPOU Library homepage does not only serve as Online Public Access Catalog (OPAC) where searching by title, author or subject can be done but it also provides links to the UPOU Homepage; library policies and flowcharts to assist students how to go about availing library services offered; online resources that is password protected which allow enrolled students to access subscribed electronic journals, course readings and on trial databases; patron review link that allows students to view their patron record, check due dates of books, reserve or put a hold on a book online; e-resources link that directs you to several Internet resources arranged by subject matter contributed by faculty members; and an Ask the Librarian link that send an email to the librarian for whatever query the user has in mind.

2. Access to all UP Constituent University Libraries

With the institution of the library fee to UPOU learners in Academic Year 2004-2005, UPOU learners became authorized library users of all other UP libraries. They have access to a variety of library resources and services by virtue of being part of the UP System bounded however by the respective UP libraries rules and regulations. However, not all learners are affiliated to a UP learning center unit. For learners where there is no UP unit close to their vicinity or learning center, UPOU books can be requested

online for delivery to their respective learning centers. For other UP books, the librarians undertakes interlibrary loan and the document delivery is either through email or uploading certain pages from the materials in the library homepage so that those remote users can view them online. Copyrights law bound all materials uploaded to the library homepage.

3. Subscription to online database re: Philippine e-lib.

In addition to the traditional services that were somehow "customized" to accommodate the diverse learners, UPOU has subscribed to the Philippine e-library and students where given access to the EBSCO online databases wherever they are located. UserID and password were distributed to students so they can download some full texts of articles they have chosen from the database.

4. Online reservation and request for delivery of books to their respective learning center

Students can also request one to two UPOU books to be delivered to the Learning Center to which they are affiliated. These books are loaned out to them for a maximum of 3-4 weeks depending on the demand for the book. Required readings of UPOU courses are restricted to room use only since enrolled students in that particular course needs to access the book. In cases where students abroad need to have a copy of that book, portion of the book within the bound of copyright are scanned and save in pdf then emailed to students. Figure 4 shows the top ten most circulated book of 2006.

1. Laws of women edited by M.S. Feliciano, F.C. Vargas-Trinidad
2. English grammar for ESL learners by Ed Swick
3. Focus group kit
4. Fundamentals of organic chemistry by J. McMurry
5. Essential manager's manual by R.Heller & Tim Hindle
6. Focus groups in social research by M. Bloor et al.
7. Handbook of research on educational communications and technology edited by D.H. Jonassen
8. Measurement and assessment in teaching by R.L. Linn, N.E. Gronlund
9. The new handbook of organizational communication: advances in theory, research and methods edited by F.M. Jablin, L.L. Putnam
10. 500 tips for open and online learning by P. Race

Figure 4. Top Ten Most circulated titles in UPOU Library

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Opportunities

A lot has been said about library resources and services. However, one major component in the concept of providing library support which has been neglected for quite a time is the human component of rendering traditional services, i.e., face-to-face interaction with e-learners. 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 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 import determinants of the success of any library specially the virtual/digital 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 fine, 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. 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.

All staff involved in providing library support to e-learners must be included in the partnership that the host institution will undertake 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. Consortia 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.

Conclusion

Library service is indeed 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.

Online learning or e-learning's growth, by which education is delivered and supported through computer networks such as the Internet, has posed new challenges for library services. Through the information superhighway, e-learners and traditional learners have access to a universe of digital information. Librarians are required to re-evaluate the way they develop, manage and deliver resources and services because of the new information and communications technologies, as well as new educational models that have emerged.

What can librarians do for the e-learners? Suggestions advocating change in librarians' role 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). It is a challenge not only for librarians but to information providers as well to be proactive in providing library support to the online learners today. Are we technologically ready to reach out and provide on-campus equivalent service to online learners or just stand by and wait till they demand library services from us?

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