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**Utilizing Technology**

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Overview: Technology and library instruction are viewed from every angle in this chapter. It examines the technology skills of students on, in particular, distance education students. The chapter looks at how librarians are incorporating technology into library instruction at a distance and examines the newest technology tools available for distance instruction.

INTRODUCTION

Librarians interweave technology into the planning and development of library instruction whether a student is on campus or at a distance. However, technology has become vital to bringing equal access to students that are at a distance. Librarians are bringing their services, collections, and themselves to distance students in order to facilitate assignments and integrate library information literacy into the curriculum. Moreover, as librarians plan and develop resources for distance education students using technology, they need to understand who their students are, how they can develop library resources for them, the roadblocks that might be in the way of a student’s success in accomplishing a research goal, and continue to enhance the student educational experience through library information literacy.

Once I heard a librarian tell a student that finding something using a computer was like magic. When “non-techies” are thinking about distance education, necessary items such as computers, fiber-optic lines, browsers, IP (Internet protocol) providers, and so forth might give the appearance of these technological parts and pieces coming together like magic. Sometimes the providers of distance education themselves also might believe that to have all the pieces come together for a seamless learning experience, magic might be involved. Through anecdotal experience and a review of the literature, it appears to be evident that there are a lot of non-technical students who are using library resources from a distance with some difficulty. Who are they, what are they finding, and what is going on?
CHARACTERISTICS OF DISTANCE EDUCATION STUDENTS

Recently, Anna Sikora published a summary of the findings from the National Center for Education Statistics survey entitled “National Postsecondary Student Aid Study” (NPSAS). Some of the findings describe characteristics of students who migrate to distance education. Students who participate in distance education were found to be those with family responsibilities and limited time. They were more likely to be enrolled in school part-time and to be working full-time while enrolled. The study specifically noted that

undergraduates usually with those characteristics associated with family and work responsibilities (such as being independent, older, married, or having dependents) were participating with higher rates in distance education. Gender was related to participation as well: females were more likely than males to participate. The participation rates of undergraduates attending public 2-year institutions and those seeking associate’s degrees also tended to be higher than those of their counterparts in other types of institutions and degree programs. Undergraduates majoring in education participated in distance education at a higher rate than did those majoring in most other fields of study. (Sikora, 2003: 4, n4)

Moreover, from anecdotal librarian experiences, some full-time students at four-year or two-year institutions look for distance education classes from their current school or from any college or university around the country that will fit into their schedule, will add another credit, appear to be easier, or will replace a credit lost when they failed a class. Students who enroll in distance education, however, often do not have the technical skills necessary to succeed in the class. What are the computer skills of today’s students?

Computer skills for these groups vary by the time they enter postsecondary education. According to several studies, students in public schools are using computers and the Internet at an early age. They do their homework using a computer at school and at home. According to the report entitled Computer and Internet Use by Children and Adolescents in 2001, the following Internet and computer usage was reported concerning age groups between five and seventeen years of age:

- 90% of children and adolescents aged five to seventeen (forty-seven million persons) use computers and about 59% (thirty-one million persons) use the Internet.
- Computer and Internet use is divided along demographic and socioeconomic lines. Uses of technologies are higher among whites than among blacks and Hispanics. Five- to seventeen-year-olds living with more highly educated parents are more likely to use technologies than those living with less well educated parents, and those living in households with higher family incomes are more likely to use computers and the Internet than those living in lower income households.
A majority (59%) use home computers to play games, and over 40% use computers to connect to the Internet and to complete school assignments. About 72% of Internet users ages five to seventeen use the Internet to complete school assignments, while 65% use the Internet for e-mail or instant messaging and 62% of users use it to play games. (National Center for Education Statistics, 2004)

One group of students that is often forgotten when thinking in terms of accessibility consists of those students who live in rural areas. In the review of the literature, connectivity is one of the main problems for rural students and is often overlooked because students in urban areas complete most of the surveys. "The use of wireless, DSL and cable for broadband access has become increasingly prevalent in metropolitan areas. While these technologies are being successfully utilized in terms of both service quality and economics in densely populated areas, there are still vast geographic regions where broadband services are either prohibitively expensive or simply unavailable at any price" (Zhang and Wolff, 2004: 99). The "digital divide" is very real and continues to be an issue. "In rural America, it is clear that a digital divide, as measured by lower penetration rates of telephone usage, personal computer ownership, and Internet access and usage, still exists" (Kastinas and Moeck, 2002: 207).

When students enter college, they assume they have the skills necessary to succeed. Students opting for distance education classes often do not have the technology skills to accomplish a Web-based course. The allure of taking classes at home on an "anytime" basis overwhelms the common sense of an individual. Indeed, according to a National Postsecondary Education Cooperative study, there were "127,400 distance education courses offered in 2001-2002 with about 3.1 million enrollments. Most 4-year college freshmen are computer literate. Almost four out of five freshmen reported using a personal computer frequently during the year prior to entering college" (NPEC, 2004). However, by definition, what does computer literate mean? Do these students understand about moving or sending files other than music files on their computers? According to many colleges and universities, students are having difficulty using the courseware presented in distance education courses. "Computer based learning can be difficult when previous exposure to the media is limited. Skill levels are varied and difficult to judge on admission to the classes. Hardware and software costs and compatibility were also issues" (Short, 2000: 56).

Many colleges and universities use a computer skills assessment survey offered to students before they register for a class. Most distance education Web sites offer information or orientation instructions about skill sets that are good to have to succeed in a distance education course, particularly if the course is Web-based. From experience, teachers know that many students expect a distance education course to be easier or the students expect that they can proceed through the
course at their own rate. Students do not always realize that a distance education course also dictates time limits and requirements just like a face-to-face class. But do colleges and universities unintentionally place roadblocks in the way of students enrolled in distance education classes? “Librarians play an important role in facilitating the convergence of the growing number of distance education students and the growing complexity of information technology” (Turnage, Carter, and McDonald, 2004: 44). Librarians consider the connectivity issues involved with accessing library databases, often using software such as EZProxy or other authentication systems. If these systems require a student to know a password and pin, they might be one of many they must remember for campus activities. Librarians can be instrumental in working with the technology departments on campus to develop a one-password and one-pin access to campus activities and library functions. Moreover, if the computing entities on campus also installed on the network “backbone” firewalls or filters, off-campus users will have difficulty accessing the library or e-mailing full-text articles to their local e-mail systems. Communication between all computing departments and the library is necessary to work out any technology problems a student might encounter.

INCORPORATING TECHNOLOGY INTO LIBRARY INSTRUCTION

In order to support students at a distance, librarians are bringing more of their services online. They want to be wherever students will be on the Internet, so they apply all the current technology and applications that are available. The idea is for every student to have equal access. Historically, in around 1916 to 1920, reference librarians in higher education added a dimension to their service by going beyond the walls of the library and using a new invention, the telephone. Whatever the technology, librarians will use these methods to provide access and instruction online. Currently, librarians provide instruction through chat, e-mail, or course management software such as WebCT and Blackboard.

Internet Tutorials

One popular venue of teaching is a self-paced tutorial available on the Internet. Online tutorials provide students at a distance with the push they need for information literacy, often with instant answers to simple questions. The University of Texas at Austin in 1998 developed an award-winning tutorial called the Texas Information Literacy Tutorial (TILT). The UT librarians used some forward thinking and offered the tutorial duplicated or modified to fit any library’s needs through their Open Publications License (University of Texas System Digital Library, 2004). Many librarians from across the country took advantage of this opportunity and adapted TILT to their own circumstances. Cuyahoga Community
College, for example, developed its Student Information Literacy Tutorial (SILT) based on TILT design (Jansen, 2002).

When librarians do not have the technology needed to create interactive tutorials such as TILT that use PHP scripting language, they can use a simple Web editor to create plain HTML/Web pages that provide critical answers to common questions posed by distance and local students. Simple Web pages can take the form of “how to” pages or FAQ pages because students in higher education appreciate a simple Web page. Web pages that actually say, “How do I find a book?” or “How do I find an article?” can be just as useful as complex interactive tutorials. Making Web pages to address issues such as access targeted especially for distance students is a good idea. A direct answer to a specific problem so that a student does not have to navigate through complicated modules can diffuse potential student frustration.

Another type of Web page that can be geared to a specific student audience is the course-specific page. Course-specific Web pages can be designed for either a distance education class or a face-to-face class. The type of information included on these pages might be items such as specific subject indexes, books, or articles that the students will find useful to accomplish a specific class assignment. Persistent links to full-text articles from databases may be placed on the Web page, as well as some text explaining how to use the library resources that have been highlighted. Moreover, Web sites evaluated by the librarian could be highlighted.

Virtual Tours

Virtual tours and streaming videos are good ways of introducing students to library resources and to librarians. Some students taking classes at a distance are often required to visit the campus once a semester or more. During this time students may find it easier to use the library if they are provided a virtual tour giving them familiarity with the layout of the library. The tour can be made simple with text and small graphics or it can be done with streaming video highlighting the key service areas and collections. The librarian can also tape an instruction session and publish it online through streaming video. However, it should be remembered that this technology should not become a student’s roadblock to information. This type of technology might be for the high-speed networks and should not be the only means for students to get instruction or library help. Some students still do not have computers at home or have older versions with dial-up access to the Internet and will have problems viewing the video online. When the librarian is planning instruction on the library Web-site, a variety of helpful aids for students using a variety of technological tools must be developed.
LIBRARY SERVICES, LIBRARY COLLECTIONS, AND TECHNOLOGY

Distance students can also take advantage of interlibrary loan services. Current technology has changed the process involved with interlibrary loan. The old process of filling out a paper form and walking it to an office where someone had to handle it by hand and make a phone call has changed to computer applications handling a request without the help of an individual. An interlibrary loan form can be interactive over the Internet between the library and the student. Digitized articles can be passed through e-mail, while scanners can be used to deliver documents from print collections. Technology has also made this process more cost-effective. Most libraries do not charge students for material sent via e-mail.

Patron empowerment is the buzzword of the day because librarians are aware of customer self-service needs. If a student needs a book in the library’s collection, the automated circulation applications can check out the book to the individual. Librarians are aware of value-added service enhancements. One of the ways to add value to current services such as interlibrary loan and document delivery is to digitize more library material. Digitizing projects are a growing trend in special collections and archives. Rare material once seen only in person can now be viewed online. Special imaging software can be used to manipulate objects in order to offer a real learning experience by the student. These types of projects are popular among grant-funding organizations. If a library does not have the support to apply for grants, it can start a simple digitizing project with an extra student, a scanner, and noncopyrighted material.

A large portion of a library’s budget is spent on electronic access to information resources. Librarians must plan budgets well in advance of a budget year to spend money on electronic access to material such as e-books and e-journals. In the budget process, librarians are shifting the monies from journal titles in print to electronic resources. As libraries migrated to electronic full-text journals and e-texts, librarians noticed that many of the paper journal titles were available as database subscriptions; they discovered that they were paying twice for some journal titles. With the cost of print journals rising and legislatures cutting library funding, librarians no longer have the luxury of subscribing to print copies. In addition, publishers often provide an electronic rather than print subscription to higher education subscribers.

Therefore, with the myriad full-text electronic journals available from library databases and publisher subscriptions, librarians are faced with the task of not only coordinating collection development issues but also delivering these resources seamlessly to clients. To help coordinate the variety of electronic-type subscriptions and the continued paper subscriptions, there are some vendor solutions on the library scene. TDNet and Serial Solutions are products that attempt to create a portal for seamless access to electronic journals. The technology used by these vendors
for locating an electronic form of a journal or magazine will also allow it to interface with the library’s Online Public Access Catalog (OPAC). Students and librarians can search for a journal title, locate the full-text in a specific database, and link to the electronic version of the journal, or if it is not in electronic form, the service directs the user to the OPAC and a list of the holdings.

Another great use of technology and library services is the advent of electronic reserves. Electronic reserves are used by many faculty to create a hybrid course using face-to-face classroom experiences with the class reading materials available on the Internet. One of many ways to develop electronic reserves is by using management systems available such as Docutek ERes. In addition to allowing scanned material or persistent links, electronic reserves systems will also manage copyright issues. Docutek has a partnership with the Copyright Clearance Center so that a library can connect instantly to obtain electronic permissions for documents.

LIBRARIANS AND TECHNOLOGY TOOLS

"Many reference librarians could be described as chameleons discovering every venue to meet the information needs of students" (Turnage, Carter, and McDonald, 2004: 52). The great majority of librarians embrace new technology and certainly understand the importance of computing in libraries. They are developing online orientation and tutorials for distance education students. They also realize that they need to have a presence wherever clients are located on the Internet. Course management software used by faculty, such as WebCT or Blackboard, also is an avenue for librarians to be available for classes through the functions of chat, e-mail, and discussion groups. Another simple way to make the library presence known to students in course management software is to have a link in the navigation to the library.

An additional easy way to go online is through e-mail. E-mail, of course, is not a new technology, but it is one of the more effective ways to communicate with distance students and provide a simple form of instruction. As mentioned above, chat can be used through either course management software or some other means (AIM, Yahoo Messenger, and so forth) to provide reference and instruction services to online students. Librarians are not limited to chatting with students one-on-one. They typically can have access to student portals that offer access to school services. Often groups are set up inside the portal just for the purpose of exchanging ideas or information. In addition, as students and their professors join the group, it will provide tools such as calendars, chat, message board, and e-mail. Professors usually ask a librarian to join the group at a specific date and time for a chat with the class. This is beneficial for those professors who may not be using course management software for one reason or another. The discussion section is also open to anyone who wants to join the group, so students can get one-on-one help.
Librarians have also discovered instant messaging. Many libraries are moving to free instant messaging services for virtual reference owing to cost concerns over using other library vendor services. These instant messaging providers are free and are a good idea for a library that is just starting the service. They generally do not have all the bells and whistles of virtual reference software such as co-browsing, but for libraries that do not have heavy virtual traffic, paying for these extra services is not cost effective.

Discussion groups are another means to provide instruction to distance students. As discussed earlier, course management software often includes discussion boards in their product. Librarians can work with instructional technologists or other administrators of this courseware to create a separate library community, or they can collaborate with distance faculty in order to be a part of the class. Faculty may specify a certain time period for students to pose questions to the librarians, or the librarians could be embedded in the class so they can “lurk” in the discussion area and respond with help to appropriate questions. Discussion boards are a great way to communicate, but unless the campus community uses it often and is reviewed on a regular basis, the time and energy it takes to maintain may not be worthwhile. The librarian’s energy could better be used in the technology that is popular currently on campus. If a library has a programmer and Web developer on staff, they can find freeware for discussion boards. A disadvantage of this open source software is that it needs someone with certain technical capabilities to get it working and keep it maintained. Two new communication tools that are rising in popularity are blogs and wikis. Many people in the library profession have seen the advantages of these resources but so far are using them only for professional communication. Priscilla Coulter and Lani Draper of Stephen F. Austin State University have conducted research that includes several surveys of members of the library profession in order to find out how librarians are using blogs as a means of providing instruction to their users. The findings will be published as part of the proceedings of the Off-Campus Library Services Conference (Coulter and Draper, 2007). One of the major advantages of using blogs is the fact that virtually no HTML or Web publishing skills are needed to create one. And blogging services are free online. One drawback, however, is the lack of use by or interest from students. Marketing any new service is a big issue, but librarians also need to know their users. If students are not blogging for their own personal interest, they may not want to blog with their favorite librarian, especially if it is not required.

Wikis are another quick (wiki means “quick” in Hawaiian) means of providing content online. In an article published in College and Research Library News, Rob Withers explains that Ward Cunningham, “in 1995, developed scripts for creating Web pages that could be created, edited, linked, deleted, or renamed without using HTML, software packages, or file transfer, which he named wiki” (2005: 775). Just like with blogs, there are many different types of services online that can
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be used freely or for a fee. The library can set permissions that will allow only certain individuals to make changes in content. A recent online Webcast, presented in wiki form, described the different ways wikis can be used and gave helpful information about where to start (Farkas, 2006).

CONCLUSION

As other computing venues "pop-up" on the Internet, librarians will be there to learn and help others to learn. The continuing collaboration with faculty and computing departments will aid librarians in acquiring the technical skills to develop current resources and ease of accessibility for distance education clients. Librarians' philosophy of free access and simple access will drive continued support for creative technological solutions.

REFERENCES


Sikora, Anna C. 2003. "A Profile of Participation in Distance Education." Education Statistics Quarterly, 4 no. 4. Available: http://nces.ed.gov/programs/quarterly/vol_4/4_4/q4_3.asp (accessed December 21, 2005). (This article was originally published as the Executive
Summary of the Statistical Analysis Report of the same name. The sample survey data are from the NCES. National Postsecondary Student Aid Study [NPSAS].


