Addressing Diverse Needs:
Differentiation in Distance Learning

by Larry Johnson & Annette Lamb

A *teenager searches electronic databases for information about the Harlem Renaissance for his online AP History class.*

A college student asks the reference librarian for materials related to the small animal veterinary medicine course she's taking from another university through the Internet.

A senior citizen joins an online discussion about regional wildflowers sponsored by a local nature center and the public library.

These patrons are using the library to support a new approach to learning. "Distance learning is the process of connecting teachers and learners with online resources, virtual communications and remote activities as the primary means of instruction. Virtual learning environments allow people the flexibility to learn

- when they have the time
- where they need to be
- and how they learn best" (Lamb, Johnson, & Smith, 2008, para. 1).

Libraries are playing an increasing role in this shift from place-based to virtual learning environments. While school library media specialists are collaborating with classroom teachers, public librarians are working with home-school parents, and academic librarians are connecting with virtual faculty, all library professionals are dealing with a transition toward virtual patrons who need access to anywhere, anytime materials and support.

Distance Learning: Past, Present and Future

College and university libraries have several decades of history in facilitating learning at a distance. Fifty years ago, print-based correspondence courses were the backbone of many continuing education programs. Public schools also had similar initiatives such as learning programs delivered by analog radio and television systems. More recently, rapid technological changes have altered the delivery spectra for distance learning programming. Although during recent years, colleges and universities have led in the distance learning arenas, research in K-12 education has shown that rapid shifts to distance learning are occurring.

Catherine Cavanaugh (2009) completed a study of online learning in K-12 schools and found increased participation at more than a tenfold rate in six years. In 2007 almost two million students were taking online courses (p. 2). Anthony Picciano and Jeff Seaman (2007) found similar increases and predicted that for the foreseeable future distance learning will continue to grow at a rapid pace (p. 20). Clayton Christiansen and Michael Horn (2008) predict that 10% of all high school classes will be offered online in six years and that number will increase to 50% by the end of the next decade (p. 17). Leana Archambault and Kent Crippen (2009) recently published research about the teachers of K-12 distance learning. They found that today's virtual teachers are similar to the general population of teachers except that they have increased teaching experience and added education levels. Archambault and Crippen (2009) stress that at some point teachers will be specifically trained for developing and facilitating distance learning (p. 383).

Differentiation and Distance Learning

Differentiation involves designing instruction to meet the diverse needs of learners. According to Carol Tomlinson (1999), techniques of differentiation offer a variety of ways to address readiness levels, interests, and learning profiles. For example, teachers can vary the content, process, and product of their instruction to meet particular needs. Resources can be provided at different reading levels, depth of detail, and using varied communication channels (i.e., text, audio, visual) to meet the interests and needs of each student.

Distance learning provides a unique opportunity for differentiated instruction. Most librarians thinking about distance learning focus on two factors: delivery and access (ACRL, 2008). **Access** relates to issues of providing library services and resources to patrons and faculty regardless of their location. **Delivery** of services and resources deals with the nuts and bolts—the planning, facilitation, and assessment of providing audio, video, Web, multimedia and print programs.

By collaborating with online instructors as well as working with individual students, librarians can play an important role in meeting the diverse needs of learners. Among the techniques available to the librarian for such collaboration are:

Pathfinders. To build effective research and learning environments, librarians often pull together resources. The advent of electronic materials and Web site materials has provided many more resources both within and outside the physical library setting. "Pathfinders are subject guides that direct users to annotated resources for answering questions and helping with research on specific topics" (Lamb, 2009, para. 2). Particularly for young children, locating electronic materials at an appropriate reading level can be frustrating. From trade books, primary source documents and local contacts to electronic databases, e-books and Web sites, pathfinders guide learners to the best resources on a particular topic. Searching independently can be time-consuming. Quality pathfinders include background information, search strategies, definitions, troubleshooting tips and project starters.

Collaborating on the creation of pathfinders can be time consuming. The use of social networking tools can expedite the process. For instance, social bookmarks such as Delicious.com allows users to easily store, organize, tag, search and share Web sites that might be used in a pathfinder. Teachers, students and others can even make comments, suggest extensions, or add to your list.

WebQuests. A pathfinder can easily become the resources section of a WebQuest. A WebQuest provides the context for an inquiry-based activity involving a motivating scenario, meaningful task, steps or processes to address the problem, Web-based resources, guidance and ideas for learners, and an evaluation or reflection. For instance, a WebQuest might ask participants to explore wind, solar and geothermal energy sources and decide which would be most effective for a small Midwestern town. Resources representing each energy solution would be provided along with key issues that might be considered.

Working together, teachers and librarians can develop engaging assignments that access online resources. While the educator may suggest scenarios and provide evaluation tools, the librarian may identify resources and design instructional materials to facilitate the use of electronic databases or other resources.

Tutorials. From accessing information on electronic databases to holding effective online discussions, distance learners must possess a wide range of 21st century skills. Unfortunately, not all students are able to use digital information effectively.

Develop a list of skills needed to use materials for particular online programs and design step-by-step instructions. Keep in mind that students learn in different ways. Some might learn best from a document containing directions and screen shots, while others might be best served with a short digital video presentation.

Reference Services. Digital reference services are an integral part of distance learning. Unfortunately many students and instructors are unaware that virtual assistance is available to find information, answer questions, and facilitate learning. Assistance may be provided through e-mail, Web forms, instant messaging or multi-user virtual environments (MUVE). Explore ways to formalize the library's connection to distance learning programs.

Libraries Meeting Diverse Needs

People of all ages seek out online experiences for a wide range of reasons. Cathy Cavanaugh (2009) identified two main benefits of distance learning: expanded content by the addition of offerings not available in the local setting and the costs savings for delivery (p. 14).

With distance learning expanding throughout education, it seems logical that movement will extend to and impact all types of school, public and special libraries. Although traditional face-to-face programs will continue to be supported, distance learning will extend opportunities into hybrid events, lifelong learning and special programs. Although traditional formats will continue to be most prevalent, librarians must consider support for these non-traditional learning environments and broaden the vision of learning to encompass the spectrum of offerings. Libraries and librarians are connecting learners of all ages to a varied array of virtual events and programs.

Hybrid Programs. Some courses and events provide a blend of online and face-to-face experiences. For instance, a wellness program might begin with a seminar at the library. Participants might log their activities and hold discussions online. A landscaping course might provide online reading materials to supplement weekly meetings at locations around the city to explore water use and xeriscaping techniques.

Online Programs. Some distance learning experiences include no face-to-face meetings. The library may provide a self-paced, online tutorial for topics such as tax preparation or genealogy. An online book club might meet in the virtual world of Second Life http://secondlife.com or through a threaded discussion forum using a service such as LibraryThing http://librarything.com.

Extending events and programming beyond traditional library hours, these virtual programs connect people that might not attend traditional face-to-face events with information, media materials and related online activities.

Seven Challenges for Distance Learning and Libraries

Meeting the diverse needs of distance educators and

learners is a growing challenge. Let's explore seven of these demands.

Diverse Needs. From coordinating online book clubs to supporting hybrid college courses, it's important that librarians understand the needs of individuals participating in these programs. Concentrate on developing opportunities that address local needs. Each community and organization has its own unique history, resources and patron culture. Look to the strengths inherent in the library's community. What are the needs in your school or community? What programs and services will best address these needs?

Virtual Materials. A growing number of patrons find face-to-face programs inconvenient. Students taking courses across the country or around the world may find the physical library impossible to access. Adult learners are often unable to be in a physical library location during operating hours. In these situations, digital access to services and resources is essential. Do you have a plan for digitizing primary source materials such as historical documents and images? Do you provide online reference services and access to electronic databases?

New Content Areas. One reason that students choose distance education is the availability of courses not offered in the local community. This presents a dilemma for librarians who have selected materials based solely on the school's curriculum. For instance, the library may house support materials in the foreign languages of Spanish and German. However, students may elect to take Latin, Chinese, Japanese and Arabic as new online offerings. Does the library collection development policy address the issue of online learners? How will the library support the need for materials outside the traditional academic areas?

Varied Resources. Consider the many ways that people access information and learn from these materials. Are a variety of reading levels and approaches provided for each topic? Are a variety of communication channels such as text, audio and video available for course content? Are these materials organized in a way that they can be easily accessed online?

Collaborative Spirit. Meeting the emerging demands of distance learning requires collaboration. Librarians need to be aware of online curriculum offerings, new online resources and changes in the student population. Build opportunities for students to develop supportive and collaborative online relationships with other distance learners. Consider incorporating social networking technologies to foster cohort interest or study groups, collaborative activities and open discussion areas. Strive to create a supportive and trusting atmosphere. Develop a group spirit of discussion and sharing. Are you connected with local schools and parent groups? Are you working with online faculty on instructional development projects? Are you helping home school learners connect with each other?

Library Promotion. Libraries and librarians can serve an important role in distance learning experiences. Unfortunately many teachers, parents and patrons are unaware of the numerous resources and services available. Seek ways to create an online presence that conveys your library and professional personality. Think of ways to reflect a caring, supportive atmosphere. Listen to participants; they usually have great ideas. Encourage them to communicate expectations, experiences, and provide suggestions. Are you promoting the library as a core resource in distance learning? Are you developing new programs to support virtual experiences? Are you advertising your online resources and services? Are you using blogs, wikis and other social technologies to engage your patrons and promote interaction?

Creative Approaches. Rather than offering the same types of events and programs you've seen in other libraries, look for unique, local events and perspectives that highlight the community and meet its needs. Think differently; explore totally new ways of approaching content and communications. While some libraries are exploring the use of virtual worlds such as Second Life, others are investigating the potential of Facebook http://facebook.com and other social networks. If you lack funding for new programs, join other organizations for a collaborative approach. How can you build a unique online presence for your library? What existing online programs can you link to or join?

Conclusion

As both formal and informal education programs shift from place-based to virtual learning environments, consider ways to address the diverse needs of these students. A recent report from the U.S. Department of Education (Means, Toyama, Murphy, Bakia, & Jones) found that students who took all or part of their coursework online performed better than those taking the same class through traditional methods. Blended courses that used a mixture of online and face-to-face learning were most effective (Means, Toyama, Murphy, Bakia, & Jones, 2009, p. ix). Although distance learners are just beginning to impact library programs, it's important to plan for this emerging group of patrons.

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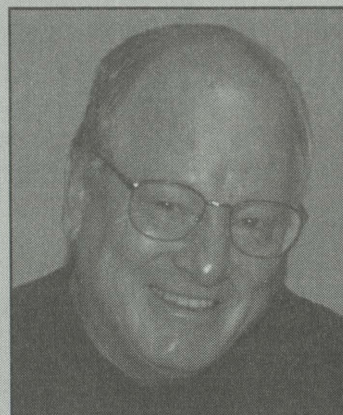
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