Library Education in a Telecommunications Environment: A North Carolina Perspective

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New technologies have always been with librarians and have always changed the ways librarians have approached their work. For example, we need only consider the implications to library service of a few of the inventions of the past hundred years—the typewriter, the telephone, the automobile, television, xerography, microforms, and the computer.

Computers have been linked to the typewriter, television, and telephone in processing data and information. These links in technologies have led to what is now referred to as computer communications systems or telecommunications systems. As computers have become smaller, cheaper, and more numerous, people have become more interested in using telecommunications systems to connect them together to form networks or distributed systems. Librarians have been no exception in utilizing these systems to assist them in providing information services to their user environments.

This article will focus on some of the implications of computer and telecommunications technologies on the library profession and how the programs in the University of North Carolina system are preparing librarians to work in a society that is increasingly driven by computer communications systems.

Implications for the Profession

The combination of computer and telecommunications technologies has made possible substantial advances in the sharing of information resources.[1] Librarians have taken advantage of several aspects of the link between computer and telecommunications technologies. The Online Computer Library Center (OCLC) allows librarians the opportunity to share cataloging data, to implement coordinated collection development policies, and to share a number of closely related bibliographic control processes. The Lockheed Bibliographic Search System, known as DIALOG, allows librarians to provide bibliographic citations far beyond the holdings of their own local collections, and can provide access to the information in printed form much faster than would have been possible using traditional manual indexes.

Essentially, telecommunications-based computerized systems are challenging librarians to consider that the provision of information service is no longer confined to the walls of the library building, or what Lancaster calls the "institutionalized" profession.[2] Lancaster argues that the notion of providing library service without walls (deinstitutionalization) will accelerate through the use of new technologies, especially the ability to make information available in document form through remote means.

Librarians are now able to plan and implement services for their local user environments based on the sharing of information regardless of geographic proximity to a library building. They are able to focus on coordinating access to information, rather than on ownership or control of materials or physical documents. Librarians are also afforded new opportunities for resource sharing without loss of local autonomy in governance and little compromise of local service goals and objectives.[3]

Librarians are now able to question the traditional principles of organizing materials and retrieving information in light of the ability of the newer technologies to enable more efficient and effective intellectual access points to information.[4,5] There is a need for dynamic or unstructured access rather than the traditional static or structured access that is relevant only to an environment where information is stored in a fixed

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medium such as a book or a vertical file and in a fixed location such as shelves or a storage bin. Librarians are now able to focus on developing electronic databases as opposed to card catalogs,[6] custom-tailored approaches to the presentation of information based on each individual user's needs,[7] or store all books, records, and communications on one medium (compact laser disk) so that they may be consulted with exceeding speed and flexibility.[8]

Implication for Library Education

For library education, the key question is what skills are needed by professionals—both new and old—given the likely impact of the new technologies outlined above.

First, there is the obvious need for librarians to acquire skills in the areas most closely related to these technologies—automation in general and library automation in particular, telecommunications, information science, database management, and decision support systems.

It is not clear how much of this training can be undertaken by the library schools themselves. In many cases, the expertise is simply not there.[9] In other cases, the subjects are already being taught in other academic departments—in business schools, in computer science departments, in schools of engineering. It seems obvious that librarians should be encouraged to study subjects in these instructional units as opposed to having library schools duplicate these courses within the confines of the library school faculty and curriculum. Clearly, some sort of interdisciplinary approach is necessary.[10]

There is also, ironically, a strong need for what might be called traditional skills. In computerized telecommunications environments, there are needs for communication skills, with an emphasis on formal communication, and for a deeper understanding of information processes, problem solving, strategic planning, and environmental scanning. It is a curious fact that advances in the computerized handling of information are causing the profession to look more closely at one of its oldest and most basic questions —how do people really use information?

Library Education in North Carolina

How, then, are the library and information science programs of North Carolina meeting these educational needs? Their various approaches to providing education and training in the areas of computer and telecommunications technologies are outlined below.

Appalachian State University. The Department of Library Science and Educational Foundations requires all students in its graduate program to take the course, Computer Applications in Libraries. This program is moving toward integrating computer and related information technology competencies into its foundation courses. An Online Computer Services course will be required of all students who seek certification in the Instructional Technology—Computers track.

East Carolina University. The Department of Library and Information Studies has two required courses that focus on these technologies. A course in the Automation of Library Processes serves as a basic introduction, and a Computer Assisted Instruction course looks at a variety of types of computer usage in schools. There is an online database unit in the introductory reference course and a number of elective courses that look at various aspects of automation: a course on Computers in Education for students in media specialist track, an online cataloging course, and an in-depth seminar in library automation. The school is planning courses in the advanced use of online databases, in robotics and artificial intelligence, and in interactive video.

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North Carolina Central University. The School of Library and Information Sciences integrates the basic concepts of automation and computer technologies in its six foundations courses. There are units on relevant aspects of automation in the elective courses, and there are several electives that look directly at computer-related topics such as Information Systems, Computer-Based Communications Networks, Computer-Based Information Storage and Retrieval, and Microcomputer Applications in Libraries. The School has developed an information management track within its Master's degree and has proposed a Master of Information Science degree, with concentrations in database management and communications systems, which will follow an interdisciplinary approach by requiring students to take courses in other departments at North Carolina Central and at other universities in the Research Triangle area.

University of North Carolina at Chapel Hill. The curriculum at the School of Library Science includes a required course, Introduction to Computers, which introduces students to the use of microcomputer software and allows them to pursue advanced study in either database design or programming. Online reference and cataloging are introduced in the school's block and are included in later elective courses. There are a number of computer-related electives, including Natural Language Processing and Information Retrieval that are cross-listed with the Computer Science department. Future plans include a course in telecommunications systems. The school has recently developed an information science track, and a library automation track also exists. Concentrations in these areas include retrieval, the organization of information, communications, and language processing.

University of North Carolina at Greensboro. The Department of Library Science and Educational Technology requires a three-hour course in library automation that focuses on managerial aspects of computerization. The last half of the Indexing and Abstracting course focuses on computer-assisted indexing and abstracting. In addition, the school has a number of one-credit courses that focus on topics such as the use of microcomputers in libraries and media centers, database management applications, spreadsheets, and online retrieval.

Conclusion

A number of ways in which the new computer and telecommunicatons technologies may affect library service in the near future has been presented. These future possibilities yield ideas about the paths that the profession and library education ought to be taking. A brief description of the paths currently being taken in this area by the library schools in North Carolina has been presented.

The task of library education in the telecommunications environment will not be easy. To some extent, library schools must prepare professionals for an occupation whose future is largely uncertain. As Myers[11] has noted, it is difficult enough to predict the future job market for librarians; it is even more difficult to predict the future job market for librarians whose profession has been redefined to include broader information-related courses. The task is made even more difficult because library education must negotiate a delicate balance between the present pragmatic needs and realities of employers and the uncertain demands of the future.

Finally, library education programs in North Carolina appear to be making bold moves in redefining and expanding the principles and theories that will undergird the practice of both traditional and new information professions.[12]

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