

Introduction

The twenty-fourth annual Clinic on Library Applications of Data Processing was held April 5-7, 1987, at the University of Illinois at Urbana-Champaign. The clinic theme, "Questions and Answers: Strategies for Using the Electronic Reference Collection," addressed the impact of automation on public services in libraries. Reference work in libraries of all types is being transformed by the availability of sources in electronic form which supplement printed sources and paper files. These new sources offer an opportunity to enhance reference and information services if librarians can learn how to use them effectively.

The articles in this volume are drawn from the three components of the clinic. Nine papers were prepared in response to invitations to discuss particular aspects of the clinic theme. One short paper (by Roth) was part of the poster session in which clinic participants had an opportunity to make presentations on topics related to the theme. The last five articles, authored by librarians from the University of Illinois at Urbana-Champaign, formed a preconference session highlighting the impact of automation on reference and information services in a major university library.

Sheila D. Creth's keynote article describes how automation in the library workplace is creating new roles, relationships, and communication patterns in libraries. She offers a number of examples of new possibilities open to reference services and considers issues related to staff development and the work environment.

Although many online catalogs already offer the reference librarian search capabilities exceeding those of card catalogs, further improvements are possible. Charles R. Hildreth identifies shortcomings of current online catalogs and suggests a number of ways these can be extended to improve

access and service potential. He convincingly argues that the catalog will continue to evolve with augmented functions and contents. Dana L. Roth provides specific examples of how the contents of the catalog can more completely represent the contents of library collections through the addition of analytics for book chapters, journal articles, conference proceedings, and technical reports.

Access to databases of various types is gradually becoming a more integral part of reference work. Betsy Baker presents a framework for discussing the integration of network databases, such as OCLC, into the reference setting. She points out that while such databases were originally developed to support technical services activities in libraries, they must now be evaluated to assess their reference effectiveness in verifying users' (sometimes garbled, often incomplete) citations. Two articles address the increasing use of databases as tools to answer ready reference questions. Virgil Diodato reports on a survey that indicates that online ready reference service is common in many academic libraries. In addition, he reviews planning issues that arise in the process of implementing such a service. Charles R. Anderson considers online ready reference from the perspective of public libraries, discussing both philosophical and practical aspects such as budgeting and staffing.

Among the sources that make up the electronic reference collection are a growing number of full-text databases. Dianne Rothenberg and Mima Spencer identify the types of full-text databases available and explore the implications for libraries. Such databases may be used both for document delivery and in answering reference questions. In addition to being available online, full-text databases may also be distributed on optical storage media such as CD-ROM (Compact Disc-Read Only Memory). Terry Noreault discusses the strengths and weaknesses of different optical technologies and suggests that this technology will create users who are more informed about advantages of electronic sources and thereby increase demand for all types of electronic information services.

This wide array of electronic sources is of little value unless searched effectively. While reference librarians have developed strategies for manipulating printed books to provide answers to questions, additional strategies must be learned for searching information in electronic form. In addition, if users themselves are to realize the potential for accessing such sources directly without the aid of librarians, support systems must be designed. Stephen P. Harter discusses online searching as a problem-solving process and describes useful classes of heuristics for online searching. He explains the implications of this perspective for education and training, for how librarians view end user searching, and for the design of expert systems for online searching. Charles T. Meadow suggests that the major way to make systems easier to use is to design systems around specific

needs of user groups who share use of particular databases. He also identifies a number of ways in which search systems can be better tailored to users.

While describing the impact of automation on reference and information services in a particular library, the final set of five articles documents experiences that are likely to be quite valuable to other libraries as well. Beth S. Woodard discusses strategies for providing public service with the online catalog, both for answering reference questions and for assisting patrons in their use of the catalog. Sharon Clark outlines the development of the online catalog at Illinois and describes Illinet Online, a statewide online union catalog. Paula D. Watson presents the findings of a project that evaluated an online catalog on optical disc, assessing its value for reference and resource sharing. Karen Havill Bingham and Barton M. Clark discuss the library's experience with InfoTrac and assess the value of such in-house electronic reference sources. Finally, William H. Mischo and Melvin G. DeSart describe the features of customized microcomputer interface software designed to support end user subject searching of the periodical literature as an extension of the online catalog.

Taken together, the articles in this volume begin to answer some of the questions associated with the emergence of new reference sources in electronic form—e.g., how can each new type of source best be used? What are the administrative issues in the provision of new services based on the electronic reference collection? Tom McArthur's (1986) *Worlds of Reference* is a useful reminder that reference sources have evolved over a long period as compilers experimented with media, content, and arrangement. Likewise, the domain of reference services has evolved as librarians mastered the use of new sources and identified new ways to assist users. Reference librarians today face a dual challenge: to exploit fully the capabilities of the electronic reference collection answering a wider range of questions more efficiently and effectively than is possible using printed tools alone, and to assist users who seek to use these sources.

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REFERENCE

- McArthur, T. (1986). *Worlds of reference: Lexicography, learning, and language from the clay tablet to the computer*. Cambridge, England: Cambridge University Press.