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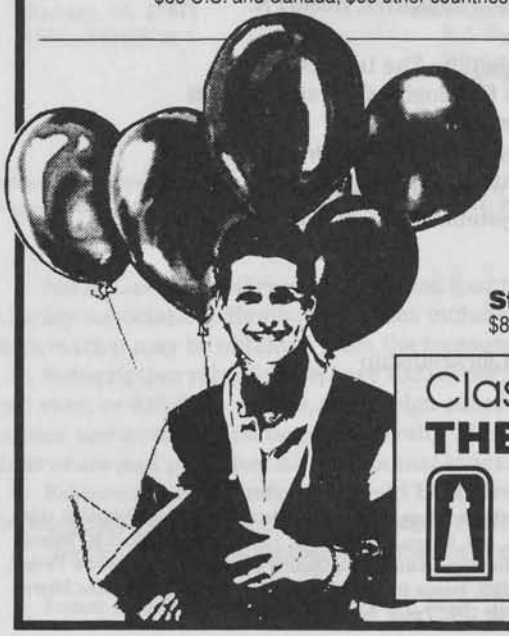

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NORTH CAROLINA LIBRARY ASSOCIATION

From the President

This is my last president's column for *North Carolina Libraries*, and I have real news to report: State Librarian McGinn has received approval to have the North Carolina Library Association establish its permanent home at the North Carolina State Library. The details are yet to be worked out, but what we know for certain is that NCLA will have a permanent address (the State Library's) and probably, for the first time, paid staff.

NCLA is the fourth- or fifth-largest state library association in the country. All of the associations our size or larger, and almost all of the smaller ones, have at least some paid staff. At a meeting of the Southeastern Library Association that I attended last year, the statement was made that "you cannot run a state library association with only volunteers." I told them that NCLA did. The response was a repeat of the statement "you cannot run a state library association with only volunteers." Apparently, they didn't believe me. And it is hard for others to believe that an association as large and active as ours has been able to function and function well with no permanent paid staff. The reason, of course, is simple: we have people who are willing to spend huge amounts of time working on NCLA activities. Some of this is time donated by their library systems, because people who run libraries realize that their libraries benefit from what NCLA does; and they know that working in NCLA gives their staff people opportunities to learn and grow that they could not get simply by staying home and minding the store.

The rest of the time is morning, evening, and weekend work that many of you volunteer year after year. All of this has resulted in one of the finest state library associations in the country, but it was inevitable that we eventually would grow to the point that there would be more administrative work in this association than the volunteer market could bear. That would have occurred earlier except for one extraordinary volunteer—Nancy Clark Fogarty, our treasurer since 1985.

However, calling Nancy Fogarty NCLA's treasurer is like calling Toulouse-Lautrec a sign painter—she is so much more. Nancy writes the checks and invests the money and keeps track of how much everybody spends and for what; she also processes all the membership renewals, and handles all requests for mailing labels, and makes sure that all bulk mailings for all the sections and round tables as well as NCLA-wide communications get done. She is, in effect, NCLA's executive director, and she's been an excellent one—she just never got paid. If we had paid for Nancy's labor over the past four years, NCLA would probably be around $100,000 poorer. Instead, Nancy is leaving NCLA in its best financial position ever and thus, as she is ending her term, NCLA is ready to start paying somebody to do at least part of her job.

Nancy, of course, couldn't be happier. For the first time in four years, she'll have only one job to do—the one she gets paid for at UNCG; and she leaves NCLA with the one thing she has felt the organization needed more than anything else—a permanent address.

In establishing a permanent office, NCLA is making the first step into paid, as opposed to volunteer, management of the organization. Handing over administrative details to a paid staff person who will have only NCLA duties to handle should make for more efficient day-to-day operations. However, except for the treasurer, most people active in NCLA will still be just as busy. It is from the creativity and energy of its members that NCLA draws its strength. Every time I attend a meeting of the NCLA Executive Board and hear reports of what the round tables and sections and committees are doing, I am impressed, and I am proud. I am proud to have had the honor of serving this organization as president for the past two years. I have no doubt that NCLA is a very important factor in helping people who work in libraries in this state provide the best possible library service to the people of this state. It's been fun and rewarding being a part of that.

Patsy J. Hansel, President

Foreword

April Wreath, Guest Editor

During the past decade, the rapid evolution of new information and media technologies has caused profound change in libraries of all types. While once primarily the turf of medical, scientific, and other special libraries, and limited mostly to online searches of remote data bases and/or audio-visual collections, the current generation of "hi-tech" products has recently invaded and become an integral part of every kind of library. Technology has had a stunning impact during the past decade, providing exciting opportunities while also posing many thorny problems for libraries ranging from the school media center through the academic research institution. Also, the ever-increasing dependence of libraries and media centers on electronic forms of information access has caused a whole gamut of new concerns. Basic questions such as how the money will be found to support the endless need for software, equipment, maintenance, and staff training must be answered. There is also the problem of establishing new policies and procedures regarding the processing of and access to the new media formats.

The central issue that the new technologies have forced libraries to examine, however, is that of self-concept. Has technology changed the underlying mission of the library? Or, are libraries to provide essentially the same services, meeting the needs of their constituents with their capabilities simply enhanced by it? Will the library's role indeed be usurped by information brokers and computer centers if librarians do not hasten to meet the rapidly changing expectations of library users?

Clearly, the burgeoning of information and media technologies has created a sudden and unprecedented demand on the skills of librarians and their staff. Significant amounts of time must be devoted to on-the-job training to learn new products. Additionally, more time will be needed for workshops and other forms of retooling. Along with this development of new skills inevitably will come the need to redefine many of the job descriptions of library staff. While automation can enhance job satisfaction, it can also be a costly proposition to upgrade support staff to reflect the new responsibilities and complexities of their jobs.

The costly nature of the electronic media and its maintenance has provided an enormous challenge to library administrators. Even with the best intentions, a library cannot provide a service which its budget cannot absorb. The inherent nature of electronic data and the equipment that drives it is one of rapid obsolescence. Thus, even the most astute strategic planning cannot anticipate all of the actual demands that will be placed on a library's budget during the next decade. How different this fluid situation is from the days when a library budget focused almost exclusively on books, along with adequate shelving to hold the print collections! The need to allocate and balance funding for traditional book and journal collections, in addition to purchasing or leasing the new information and media technologies, will require establishing or rewriting many a collection development policy.

The library's role as provider of resources for education, information, scholarship, intellectual stimulation, or simply for entertainment is undergoing profound change. The rapidity of this change is what makes adaptation especially stressful, along with the related need to question traditional assumptions and chart new directions. This issue of *North Carolina Libraries* examines some of the major philosophical and practical concerns which technological change has offered librarians, and which have had an unprecedented impact on the nature of reference and information services.

The issue is divided into two parts. The first part is devoted to the most recent forms of technology which have essentially altered the types of services which libraries can provide, including access to data bases outside the holdings of a given institution. The second part of the technology issue presents articles on the more familiar topic of library system automation. This application of technology has been used to date primarily to speed up and improve access to more traditional library collections and services.

April Wreath, the Head Catalog Librarian and Coordinator for Library Online System Development, W.C. Jackson Library, The University of North Carolina at Greensboro, is guest editor of the Fall 1989 issue of *North Carolina Libraries*.

Bil Stahl's article on libraries and technology provides the keynote theme of this issue, reviewing the astonishing rate at which media and information technology has evolved, the advantages and the problems it presents to libraries, its increasing use both within and outside the library, and some of the broader implications such changes have for civilization in general. Mr. Stahl has pondered these questions both as an administrator at the University of North Carolina at Charlotte, and as Chair of the Automation and Networking Committee of the University of North Carolina System.

Two articles on the automation of reference services follow, each representing a different philosophy and approach to acquiring and making available the latest products in CD-ROM and in online data bases. Donna Cornick writes on the problematic aspects of automating reference services, drawn from her experiences in Davis Library at the University of North Carolina at Chapel Hill. Her emphasis is on the new and often unexpected skills required of librarians and staff to assist patrons with the wide and potentially confusing array of choices now possible in data base searching. She also covers a number of practical matters, such as space planning to house automated reference services, the costs involved, and ordinary details regarding the increased need for basic supplies, such as printer paper and ribbons. Johannah Sherrer, on the other hand, describes a successful goal-oriented approach to automating the reference department at Duke University's Perkins Library. Their underlying philosophy has been to have each reference librarian make a commitment to improving individual online searching skills. By making new products immediately available, Duke reference librarians experiment along with library patrons in discovering what the new software has to offer. A description is also provided of their bold and innovative service, INFOLINE, which provides an online reference capability via an electronic bulletin board.

Articles are also devoted to the impact of the new technology in school media centers and on the school curriculum in general. As Staff Consultant for School Media Programs, Carol Lewis provides a philosophical framework regarding the teaching of computer skills in North Carolina's public schools. An article by Diane Kessler and Lynda Fowler then offers a case study of the plan developed by the Durham County Schools Media Services for a systematic approach to introducing technology into the classroom as part of the instructional program.

The second part of the technology issue begins with an article concerned with selecting an integrated online system for a public library. Linda Folda points out that if well planned, vendor demonstrations can educate the entire staff as to their needs and the extent various systems can meet these requirements. Robert Bland's article follows in which he asks librarians to reevaluate the way in which online system performance is measured. He maintains that the established norm for judging a system by response time is actually a quite deceptive one. Research to support his theory leads to some provocative conclusions.

The impact of an integrated online system on cataloging operations is next discussed by Patti Easley and Lovenia Summerville. Their perspective is enhanced by five years' worth of experience with Aladdin, the VTLS system at the University of North Carolina at Charlotte. And, since there is no one correct approach to major automation projects, such as barcoding a library's collections, two articles by public librarians with opposing views follow. In preparing for online circulation activities, Ricki Val Brown proclaims that "smart barcodes are a wise decision." On the other hand, Harry Tuchmayer contends that "dumb barcodes is the smart way to go."

Finally, Marcia Kolb offers some practical advice in preparing for the next online system. Currently in the planning stages for the third integrated system at the Prince William Public Library System in Manassas, Virginia, Ms. Kolb speaks from experience and points out that once automated, a library's dependence on technology will only continue to grow.

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Libraries and Technology: Forging New Frontiers or Lost in the Wilderness?

Bil Stahl

Author's Note: The author gratefully acknowledges the influence that discussions with Frada Mozenter, Social Sciences Reference Bibliographer at UNC-Charlotte, had upon the development of this article.

It is difficult not be be aware of the "information explosion" that confronts libraries. The amount of information being produced is increasing exponentially. A recent estimate put the number of journal articles written just in the area of science and technology at over one million per year![1] This production of information is possible because of advances in information technology. However, the impact of the new information technologies is not limited to increasing the quantity of published materials. More importantly, the new technologies are changing the fundamental nature of information and our abilities to work with it.

Steward Brand, in his book *The Media Lab*,[2] states that our ability to convert information of all types into digital form will rank in importance to civilization with the invention of the movable type printing press. By translating all types of information into a common base of 1s and 0s, pictures, sounds, and text can be merged and manipulated simultaneously. As Ted Nelson speculated would happen,[3] we have become surrounded by an ocean of digital information. A discipline called "information ecology"[4] is emerging which views digital information as making up an "infosphere." It studies the interrelationships of the various types of information in the "infosphere." The capabilities of computers and other technologies that convert information to digital form and manipulate digital information are doubling every three to five years. In addition, the cost per byte of information processing power of these technologies is declining very rapidly. The challenge for libraries is to identify their appropriate niche in the infosphere and to adapt to the rapidly changing environment.

Bil Stahl is Associate Director of the J. Murrey Atkins Library, The University of North Carolina at Charlotte.

It is usually true that new technologies become available before libraries are able to develop the necessary policies and procedures to implement them. Often this lack of policies and procedures has retarded the adoption of technologies in libraries. The purpose of this paper is to attempt to give some insight into what capabilities the new technologies will offer in the next several years and to identify some of the major issues that libraries will need to address because of them.

Current Library Technologies

The application of computer technologies to library operations was seen as a logical step from the early days of computers. Basically, libraries and computers do the same things: store, arrange, and retrieve information. Libraries have been successful in adopting computer technologies. However, during the past thirty years computer technologies have had to "catch up" to the libraries' needs. Libraries needed systems that could provide quick access to large data bases with multiple indexes to records consisting of variable amounts of text. They also needed fast transaction processing times for circulation transactions and global changes to these large data bases. The creation of bibliographic utilities and library consortia required sophisticated telecommunications networks. In recent years, libraries quickly became a market for the high storage capacity optical disk technologies of laser disks and CD ROM.

With the development of high speed telecommunications networks and standards, libraries are now developing the ability to thread through a variety of networks to access a number of different systems and data bases. As telecommunications speeds increase and telecommunications costs decrease, optical disk data bases will be replaced by online services. In the near future many library terminals will not be connected directly to any single system, but rather will be connected to a network which will enable users to

access distant systems as easily as the local system.

In large part, the automation of libraries has consisted of applying technology to what libraries have always done. The changes in libraries brought by technology have been major ones, but they have also been incremental with long lead times. The most significant cognitive change that libraries have had to addreses during this process was the adoption of Boolean logic for searching. Keyword researching capabilities using Boolean operators (AND, OR, NOT) required librarians to create research strategies that were very different from those based on the controlled vocabulary of subject headings.

... the new technologies are changing the fundamental nature of information and our abilities to work with it.

The Future

While there are many enhancements that still need to be developed for library systems as they stand today, usually their development is pending not because the necessary technology does not yet exist, but because of resource limitations or legal and political concerns. We are now coming to the point where libraries will have to "catch up" to the capabilities of information technology. In the past, libraries knew what they wanted the technology to do—make the library more efficient and effective in doing what it traditionally did. Now, the tables are turning. The technology is challenging libraries to review what it is they can and should be doing.

The library clientele is certainly aware that information is all around and is becoming increasingly facile with important technologies. One out of every five Americans in 1984 used a computer either at work or at home.[5] It is estimated that the total market for home computers is eighteen to twenty percent of American households. However, this figure does not include all of the "computer-like" devices that are or likely will be in homes. Currently twenty percent of American homes have Nintendo video games and this number is projected to grow to around sixty to eighty percent.[6] In Japan, people are utilizing Nintendo games to access information via their television networks such as financial market information, shopping, and travel arrangements. Many feel that Nintendo is positioning itself in this country to provide the same services.

High Definition Television (HDTV) also promises to bring extensive computer power into the average household. While the initial attraction of HDTV is picture quality, it achieves this quality by processing images as digital data. Most HDTV units will have an "open architecture" like the standard microcomputer, meaning additional boards such as memory modules or modems can be added to them.[7] It is important to note that CATV companies may become the major players they have long been predicted to become in the information supplier market. Many already have the capacity to support HDTV and digital information transmission. CATV is not regulated by the FCC, and therefore does not have to wait for broadcasting standards to be adopted.

The major market for CD ROMs will not be libraries, but will be the home entertainment market with devices like Nintendo and HDTV.[8] Even the lowly touch-tone telephone will become a major "computer" device. Companies such as Intecom have developed front end interfaces that enable systems, such as online library catalogs, to be queried by simply pressing the pad on a touch tone telephone. The interface offers a series of menus that are voice-synthesized using the system's data.

The information systems that will be available to people in their homes will not simply be a reworking of the failed Qube and other videotext systems that were tried in the mid 1970s. Those were attempts to make everyone use the text-oriented computer systems of the day. The shift in personal computing has been towards the use of graphics. However, computing in the 1990s is envisioned as being not just graphically oriented, but cinematically oriented.[9] There will be a true convergence of entertainment and information technologies. When this happens a person could view a presentation on buying a franchise, retrieve an article from his or her library's copy of the *Wall Street Journal* on the franchise, arrange for a loan from the bank to purchase the franchise, and apply for the appropriate licenses using information from the local government documents depository library just by using the HDTV set. Libraries will either be part of these information systems, or others will fill their role.

Issues

The primary issue libraries will continually have to address is what types of information the library is responsible for providing. Many of the new technologies provide the same access mechanism to traditional library information as to extremely specialized data bases in esoteric

fields. Historically, library collection development practices have been oriented towards standard units of readily identifiable forms of information (e.g., books, prints, and motion pictures). Will the library become responsible for finding and providing access to fragmentary collections of data that exist in myriad data bases throughout the world? If not, what are the parameters that define which of these the library will include in its domain and which it will exclude?

An associated issue to the type of information a library should supply is the level of expertise the library will be responsible for providing in manipulating the information. Is the librarian going to be expected to know only that information exists and how to find it, or will he or she also need to know how to use the information. As information "collections" become more fragmentary, a librarian may need to know how to use it in order to be able to find out about its existence. Librarians will need to be fully information literate. A recent report on the future of libraries states that information literacy, the knowledge of how to find needed information, will become as important to society as the ability to read is today.[10] If the ability to find information and the understanding of how to utilize the information become more closely linked, then libraries may need to develop staff with more in-depth subject expertise than is common today.

Another major issue is that of access to, versus ownership of, materials. Since libraries have traditionally been collectors and owners of materials, standards dealing with measuring the adequacy of a library have used volume counts as a primary measuring device. However, the new technologies are forcing libraries to address the issue of access to information versus actually owning the source of the information. This is certainly not an either/or issue, but one of balancing resources to accommodate the best mix of the two. In academic libraries this issue is directly tied to support for teaching versus support for research. The importance of access will probably always be more important for the latter. The sources of the access will not always be the same as the sources the library now uses for either collections or online services. For example, should the electronic files of the complete works of Shakespeare come out of the library materials funds, even though they are available through Humanet, a scholarly electronic network? While the access versus ownership issue may have been brought to the forefront by technology, the decisions need to be based on much more than the availability of appropriate technologies. Access requires a great dependency on interlibrary cooperation and/or on the information vendors' long term commitment to support their products.

The issue of ownership versus access also applies to the area of equipment. The library will need to invest in telecommunications equipment and capabilities that certainly are not as tangible as the library's minicomputer that people can see and touch. This also means that while the library can offer more, and enhanced, services, it has less direct control over those services because of the dependence upon those who manage the networks.

Basically, libraries and computers do the same things: store, arrange, and retrieve information.

The new information technologies will largely be additions to, rather than replacements for, library collections. Much of the replacement will be phased in at a much slower rate than the development of new technologies. This means that the array of information types and formats in the libraries of the 1990s will be much greater than the libraries of the 1980s. Collections defined by format will be much harder to maintain as new formats combine the aspects of several others. The types of struggles that many libraries have had in handling microforms and media formats will recur with increasing frequency unless libraries can establish flexible systems of organizing their collections.

Bibliographic control will need to become much more complex as libraries and their clientele become fluent in the new information technologies. Standard machine readable records will need to be more robust than the MARC formats of today. Retrieval of information may commonly be done on such attributes as sound, color patterns, and emotional content (e.g., anxiety, serenity). At some point librarians will have to consider when it is time to switch from the current MARC standard bibliographic format to one that is more adaptable to the new technologies.

Libraries will also have to decide whether they should provide bibliographic control for information they have access to but do not own, and what form this bibliographic control will take. What should the library's online catalog contain when a significant portion of the library's resources are used to purchase access privileges rather

than actual materials? Will the catalog become interactive with "hot links" that take the inquiring patron directly to the cited data base?

... the knowledge of how to find needed information will become as important to society as the ability to read is today.

Another key issue is how these new information technologies fit into the library's mission. What is the library's obligation to provide unimpeded access to information to its primary clientele? Will the primary clientele be redefined because of the costs of the new information technologies? New information technologies are expensive. The most likely scenario is that the cost of these technologies will not go down significantly, but rather the capabilities will increase while the costs become more stable. Can the library afford to provide free access to all the information resources for which it has purchased access? If not, what are the trade-offs between the need for state-of-the-art information access versus readily and generally available sources of information? As the number of options for information sources increase, the mission statements of libraries may become much more different from each other than they currently tend to be. With limited resources and varied options to spread those resources over, libraries must become increasingly unique.

Because of the impact of information technologies on the library's resources and the organizational structure of the library, an effective mechanism to determine on which of their increasing numbers the library should focus its attention needs to be developed. This mechanism must allow timely reactions to new opportunities and yet it must keep the library from fragmenting its efforts on too many different technologies at once. It must also prevent staff from having to deal with ever changing technologies to the point where they develop what has been termed "cognitive whiplash."

Libraries usually view part of their mission as gathering information for the future. This has always been a challenge, since it is difficult to determine what information will be important later. As Daniel Boorstin points out, information itself has no value. It is only when information is assimilated and becomes knowledge that it takes on value[11]. Because of its volatile nature, digital information is much more easily lost than non-digital information. There is an Information Darwinism that applies to the information ecology. Information competes for survival in the infosphere. Potentially valuable information can readily go out of existence in the digital realm before its value can ever be discovered. Will libraries view the gathering of digital information for the future as part of their mission? If so, new methods must be developed which will be radically different from current archival operations and will be expensive.

The purchasing and upgrading of equipment will become a much more critical activity for libraries. New capabilities usually require new types of hardware and software. In some cases existing hardware can be upgraded to meet the requirements of the new capabilities. In other cases, it is more cost effective to purchase new equipment than to try to retrofit existing equipment. In any event, computer equipment (especially microcomputer equipment) usually has a useful life of three to seven years. The library will need to develop an ongoing plan to allocate its limited resources between buying new equipment (e.g. new technologies that the library has never had before) and replacing or upgrading existing equipment.

Current library budget planning and allocation practices must be radically changed in order to take advantage of opportunities created by new information technologies. As Jerry Campbell recently argued[12], the traditional library allocations for materials, staff, and operations will no longer be proper. Library budgeting must become a much more creative activity and often library budgets, like the mission statements mentioned above, will not be similar to those of other libraries.

The challenge for libraries is to identify their appropriate niche in the infosphere and to adapt to the rapidly changing environment.

Staffing is an important issue that always needs to be addressed with any change. As the library becomes increasingly dependent on technology, it will add technical staff to implement and maintain this technology. Technical staff will assist staff in assessing the value and feasibility of new technologies as well as setting up and maintaining hardware and software. Because of this

dependency, the library must have the personnel that can make needed changes and repairs, or major components of the library's services and operations could become inoperable for indefinite periods of time. This staffing will likely consist of data processing, networking, and media personnel. Good working relationships with other operations and agencies, such as data processing centers, networks, and media production and support operations will also be vital to keep the library functioning. Likewise, ongoing dialogs about the appropriate roles of each of these agencies in managing the information technologies must be maintained.

A major and ongoing training program for service and operations staff will need to be established to keep staff up-to-date with changes and new capabilities. As the technologies become more diverse and complex, staff may well have to become comfortable with entirely new cognitive concepts as well as simply to learn new skills. Just as many librarians quickly had to come to grips with Boolean searching logic when online bibliographic retrieval systems became widely available, librarians will have to become facile in new ways of thinking to utilize such things as hypertext systems, inference engines, and cinematic data bases.

Adoption of new technologies for accessing and handling information will impact the organizational structure of the library. Position descriptions and the interrelationship between departments will change. As mentioned above, new, specialized positions will be required. The goals of many operations may be fundamentally changed. As an example, circulation, interlibrary loan, and document delivery services may be merged into one operation. As implied in earlier statements,

There is an information Darwinism that applies to the information ecology. Information competes for survival in the infosphere.

acquisitions, collection development, and cataloging operations will certainly be changed. For reference, bibliographic instruction for an audience in a networked environment of large numbers of information sources would need to be very different from the bibliographic instruction required in a more traditional library. Quick access to large quantities of data that can readily be taken out of context presents different instructional concerns from the use of a library catalog and indexes which result in the retrieval of physical units of information (e.g., books, articles). Also, libraries will be serving a clientele with a wider range of information literacy than is true today. Librarians will have to be able to work with people who have a highly developed knowledge of information technologies, as well as those who have none.

A new reference position that could be needed is literally an "online reference librarian." The librarian in this position would be stationed at a terminal and available to anyone using a library terminal (or a library network) for interactive communication to answer such questions as how to search a particular system, or which system to use to find specific information. This position would be the new technology equivalent of the telephone reference librarian.

Library facility design for use with new information technologies will raise a series of issues. How are facilities designed to accommodate yet-to-be developed technologies? Who will be using the facility in ten to twenty years? Will the facility ultimately be an electronic hub serving a clientele who rarely, if ever, physically comes to

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the library? What type of collections will be housed in the library? In the *Virtual Library*[13], Harvey Wheeler states that we should expand our concept of a library beyond the physical structure and likens the library to a church. While a church is a physical facility, it is also a social institution. While the library may never be without walls, the new information technologies have already enabled the library to go beyond these walls.

Summary

The infosphere is both a wilderness and a new frontier for libraries. Determining which it will be is the major challenge for any library in the coming years. The only constant for libraries in the infosphere is change. Librarians must remain information literate by following technological developments and assessing their potential and their impact. Librarians must look to the literature and experiences of other sectors of society, such as business and entertainment. In an information-based society, all sectors share common concerns with libraries. Librarians must be ready to review critically the fundamental aspects of their trade. To determine and then realize their full potential in the information age, librarians must not be able simply to adapt to change, but must become agents of change.

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Automated Reference Service: Pressing F1 for Help"

Donna Cornick

The following story, entitled, "Call Button for Librarians," is a classic example of what patrons and librarians face today in the world of automation, and it capsulizes both the joys and frustrations that automation offers.

> *A faculty member was working at the* SilverPlatter *workstation around the corner from the Reference Desk. Although she was out of sight, the sounds from the workstation were clearly audible. I knew from previous experience with her that she liked to work undisturbed, but when I continued to hear rustling, and no typing or printing, I approached her and asked how things were going. "Well," she said, "I don't know if I think much of all this. I've been pressing F1 for help for the last ten minutes and you're the first person to show up."*[1]

Reference librarians must heed this "pressing call for help."

Studies from Cornell, Texas A&M, the University of Washington and Vanderbilt University present findings which agree that, while new electronic reference service is exciting and offers tremendous opportunities to libraries and their patrons, it does not come problem-free.[2,3,4,5] This paper focuses on the impact of CD-ROM data bases and computer data files on reference service and presents ten broad areas of potential concern that librarians will need to address in order to provide high-quality automated reference service.

Organization and Management

One major concern is how automated reference service will mesh with the more traditional aspects of reference work. Questions such as, "Should there be a separate electronic information unit or should the service be an integral part of the reference department?" must be resolved. Many libraries opt for including the electronic service as a component of the overall reference service function. Still, pros and cons can be found for both arrangements.

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Unless a new position is funded, someone on the present staff will need to be assigned the additional responsibility for management of automated reference service. This position will require strong public service skills, the ability to instruct both staff and patrons in the operation of the service, and technical skills relating to the operation of microcomputers.[6] This librarian will need to plan and assist in developing the collection, work with the acquisitions and catalog departments, train the reference staff, introduce bibliographic instruction sessions for patrons, write documentation to assist both librarians and patrons, collect and report statistics, work with the technical staff to set up the hardware and software, and trouble-shoot as technical problems arise. Often the librarian assigned these new duties has previously had the responsibility for coordinating the online reference service. Since many of the skills are complementary, this is a logical choice.

Finance

New technology is expensive. The cost of data bases on compact disc can range from $250 for a data base such as *Pravda* to $2,000 for *CD/Corporate* from Lotus Development Corp. Machine readable data files can also be expensive, ranging from under $100 for the *World Development Indicators* on floppy disks to $2,000 for Slater Hall's *Business Indicators* on compact disc.

Workstations are also costly, averaging approximately $2,500 to $3,000 per station which includes the micro, monitor, printer, and compact disc player. Funding for additional items such as expanded memory, graphics cards, and math coprocessors may be needed. Local area networks will be an added expense. Approximately $2,000 to $3,000 is needed to purchase a new dedicated file server, with $500 to $1,000 for additional equipment for each node. Furthermore, if the network provides access to CD-ROM data bases through systems like CD-NET, the cost will vary depending on the number of disc drives purchased ranging from $4,000 for one disc drive to

$24,000 for twelve drives.

Library materials budgets traditionally have been designed to support collection development, and that has historically meant the book collection. The cost of subscribing to data bases on compact disc, purchasing local area networks, having telecommunication hookups, and setting up the hardware and software to support this service can strain budgets already stretched to the limit. Data bases in electronic format generally are considered to be an add-on cost and are not considered as a replacement for print subscriptions. Thus, important questions arise such as where will the funding come from to support these costly new services? Will it be provided at the expense of the materials budget, or will a separate budget line be established? Can grants be secured, or does the library have trust funds available to finance this service? Could some combination of all of the above be the solution?

Libraries will also need to recognize that subscribing to CD-ROM data bases, leasing of data tapes, or outright purchase of floppy disk data bases will in most cases require an on-going financial commitment. A library frequently leases, rather than purchases, a CD-ROM data base. Thus, it will not be a part of the library's collection unless the subscription is maintained.

Another financial consideration is the availability of sufficient money to provide the service with the necessities of computer paper and ribbons. Such commodities cannot be dismissed as a trivial expense. If the service is heavily used, the supply issue can become a major concern and even an obstacle to service.

Other costs will involve hardware maintenance and repairs. As the service experiences heavy use, mechanical problems will arise. Monitors can blow, keyboards stick, disc drives fail. A maintenance contract or a repair budget will be needed to keep the service operating at full capacity.

Finally, a major expense of automated reference service involves the cost of staff time for what is a labor intensive operation. Staff will need time to learn the various systems, to practice on the data bases, and to understand microcomputer operations. Additionally, staff will have to spend a large amount of time assisting patrons.

Selection of Data Bases

The number of data bases in the various electronic formats continues to grow. A 1988 estimate cites over two thousand public access data bases in machine-readable format.[7] The files available now encompass most academic disciplines, from the *Modern Language Association Bibliography* on CD-ROM to the *County and City Databook* on thirty-three floppy disks. With limited funding, the decision of which files to purchase becomes particularly important. Libraries will need to review carefully and rewrite or revise collection policies to guide future purchases. Data bases will need to be evaluated on the anticipated popularity of use, the quality of the search software and its ability to find citations in the data base, and the quality of documentation offered. Clearly a fundamental selection question is "the extent to which any one of these products makes it easier for our patrons to locate the information they need."[8]

In addition to the problem of selecting the appropriate data files, the issue of compatibility comes into question. Will the selected data base work on the library's hardware? Can products from different vendors having different software be configured to work on the same microcomputer or will dedicated workstations be needed? Will the selected data base work at all? Because of the "experimental" nature of electronic data files, some files may be made available prematurely and put on the market before being debugged completely.

Location

If a reference department has decided to offer access to data files in electronic format, a decision is needed regarding the location of this service. There are certain criteria that must be taken into account. Most libraries have chosen to locate the electronic information service near the reference desk, with assistance for the operation provided by staff scheduled at the desk. One obvious ramification of this location is that the demand for service at the reference desk will increase dramatically as the popularity of data base searching by patrons grows. The demand can create a serious strain and can sometimes threaten to overwhelm desk service.[9]

The chosen location will need to have a sufficient number of electrical outlets and perhaps telephone cabling. Additionally, as it is expected that the service will grow, the need to locate in an area that offers the possibility for expansion is an important consideration. If the service is to be housed in an open area, noise from the printers and librarian/patron conversation can be a nuisance to other library users. However, if the service is to be housed in a closed room, adequate ventilation for the equipment is an issue, as is having sufficient room for expansion.

There is also the matter of aesthetics. A new service is often a highly visible, show-case service, so attractive furnishings and office landscaping is an important but costly issue.

Finally, security of data files is a legitimate issue. Librarians will need to arrange for a use policy that will ensure that data files will not be stolen, over-written, or damaged.

Level of Service

As electronic reference service grows in popularity, the library must meet increasing demand by supplying a sufficient number of workstations and copies of the popular data bases. At present, the one-user, one-disc, one-workstation configuration is the standard for most CD-ROM data bases. This is a serious limitation in terms of access to the data. Local area networks and changes in data base licensing, which will provide multiple access to compact disc data bases, will help alleviate this problem, althouigh usually at a higher subscription fee.

Other service questions concern hours of access to the data base. Should the service be open to the public all hours the reference department provides service or should some time be reserved for staff training, software installation, and maintenance?

A policy of use will need to be established. Would patrons be better served if they could reserve a time for the data base search, or should walk-in access be the rule? Or should some combination which permits both be the preferred method?

The question of free or fee-based searching is another issue to resolve. Although most libraries offer compact disc data base searching without a fee, some are looking at the options of charging for computer paper or using a coin-operated system.

If libraries provide access to statistical data in machine-readable format, then the level of assistance the reference staff should provide must be determined. Do librarians need or possess the skills to help patrons with statisticai manipulation of data and to teach basic microcomputer skills including spreadsheet applications, or is providing access to the data sufficient?[10] One model is the University of Florida Library's Data Center, where the reference librarians providing service for MRDF data bases offer "basic access but do not consult in technical or statistical areas."[11]

Reference Staff

Automated reference service can cause considerable stress and anxiety to a staff already overworked providing traditional services. This added service burden can create serious staffing problems. If assistance for the new service is added as one more service from the reference desk, then everyone who is assigned to work at the desk—professional librarians, support staff, and student assistants—will need to possess basic microcomputer skills. An extensive training program will need to be organized which will allow for both training and practice time on every new data base. Staff will need to learn the search software of the different products provided, each of which has its own unique command language and quirks.

'Anyone contemplating adding laser disc data bases must disabuse himself of the notion that they save staff time ...'

A minimum level of service skills will be necessary to ensure that everyone on the staff can handle the routine matters. These minimum level skills could include booting up the micros and initiating a search of all of the various CD-ROM data bases; using Boolean logic; printing citations; downloading records; changing paper and ribbons; and knowing how to respond when the system fails for no apparent reason.

Assisting patrons with new technolgical services is an extremely time-consuming task. A librarian from Texas A&M cautions, "Anyone contemplating adding laser disc data bases must disabuse himself of the notion that they save staff time ..."[12] It takes much longer to explain to a user how to use the *PsycLit* compact disc than it does to direct the patron to the printed Psychological Abstracts volumes. "Reference librarians in departments which have just recently acquired CD-ROM discs frequently mention the way their time is being redistributed away from traditional reference service to the instruction of patrons in the use of CD-ROMs. These demands for new instruction and new services will only increase as librarians make more computerized information technology available to patrons."[13]

If data bases on compact discs create problems for the staff in providing assistance, machine-readable data files can cause nightmares. Usually, the files are complex and may arrive in "compressed" or "squeezed" formats with little or no understandable documentation to help unravel the mysteries. Hours of staff time will be required

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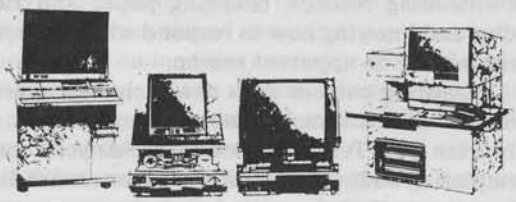

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to understand each data file, write documentation, and teach staff and patrons about them.

In order to provide service for computer file data, staff must also have a solid understanding of microcomputer operating systems, usually DOS; a good understanding of spreadsheet software, usually *Lotus 1-2-3;* and some statistical expertise. But reference librarians should not be expected to offer this service without help. "The reference librarian alone cannot meet the information and access needs of patrons without the consistent help of the systems group (i.e. programmers and data managers) within the library."[14] These services require "that a team approach be developed and sustained over a long period of time."[15] Additionally, if access to the data files, online catalogs, or commercial data bases are offered through remote locations, staff will need to be able to interpret questions and provide assistance to users over the telephone or through an electronic mail service. Since many librarians and most support staff do not have a background or expertise in computer applications, reference departments will need to commit many hours to staff training in order to offer new technological services while providing quality assistance to patrons.

Copyright

The issues of copyright and licensing of machine-readable data are also important considerations. Typical CD-ROM product licenses and MRDF copyright agreements do not allow for network use unless the product is in the public domain or a special license agreement for multiple use is offered. The question of the legality of downloading data also has not been completely resolved. As Stephen A. Shaimon and Howard B. Rein remind us, libraries are guided by the vague and obscure interpretation of Section 107 of the Copyright Law, which says, "fair use of a copyrighted work for the purposes of teaching, scholarship or research is not an infringement."[16] As a result librarians are left to guess how new technology applies to this section.[17]

Relation of the Library to Other Campus Units

The library is not the only organization on campus to provide access to data in electronic format. The computation center is in the same business. There may be other campus agencies, such as microcomputer support centers or data libraries, conducting similar operations. The library and other campus units must cooperate and coordinate efforts to provide users quality

service and to avoid duplication of costly data files and services.

Remote Access to Data

Connections to the online catalog from a dial-in system, access to CD-ROM data bases on a local area network through a campus broadband connection, and electronic mail reference service all provide access to library data from outside the library itself and will expand the scope of the library's services. Reference staff will need to decide how to provide assistance to users who no longer have to come to the library for information. Georgia Tech's library provides networked access to its online catalog of books and journals, as well as selected bibliographic data bases such as *Magazine Index* and *Management Contents*. It delivers information to faculty and students instead of trying to serve them in the library.[18]

While generally viewed as a positive, progressive step in service, the creation of remote access services are seen by others as a threat to the library's function. They argue that the "library should be judged 'successful' to the extent that it does itself out of a job," by no longer requiring users to come physically to the library for information.[19] One writer concludes that "optical discs can be viewed as being in direct competition with the library itself, at least as it is traditionally viewed,"[20] since academic departments may also purchase CD-ROM data bases and house them within their own buildings. Again the library's role of providing access to information could be usurped.

Patrons

Library patrons have generally been very enthusiastic and excited about the opportunity to use new library technologies such as compact discs and online public access catalogs. But along with this eagerness often comes a lack of understanding regarding the mechanics of accessing the data. Patrons may attempt to do a CD-ROM search without having the compact disc in the player. They may download data to the hard disk and then wonder why there is no data on their floppy. They may insert the compact disc into the floppy disk drive where it will be stuck. (To remove the CD, just apply a bit of tape to the disc, pull gently.) Such experiences document that "users require extensive professional help."[21]

The type of assistance can vary. Bibliographic instruction classes offer the opportunity to reach a group of users at one time. Documentation that is brief and to the point can also be helpful. It needs to be recognized, however, that most users prefer one-to-one assistance at the time they are directly accessing the data and that this point-of-use assistance is *very* costly in terms of staff time.

Assisting patrons with new technological services is an extremely time-consuming task.

Demand for staff assistance in using large computer files is even more time-consuming. Due to the complexity of the files, one hour is the average amount of time spent assisting a patron with a data file at the MRDF Center at Davis Library. This does not include, however, the preparation time spent by the librarian examining the file prior to the patron's arrival.

Patrons can also become perplexed by the various microcomputer stations available in the library. Some stations may be devoted to accessing the online catalog, others to compact disc searching, others to online data base searching, and others to word processing. Directional signs are helpful in avoiding this confusion.

Having selected data bases in electronic format can create research problems for patrons. It has been noted that patrons prefer to use *InfoTrac* because it is easy to use, quick, and offers a print biblography of sources. *InfoTrac*, however, may not always be the most appropriate source of information. The same can be said for other CD-ROM products. Users often prefer using a CD to a more appropriate print source. Patrons will try to force a subject search into one of the data bases on compact disc, even when the topic is not at all well suited for the content of the data base. Thus, the new technologies, while dazzling, can be deceptive in their actual scope.

Conclusion

To say that CD-ROM data bases have become extremely popular is an understatement. At UNC-Chapel Hill, use statistics for FY 1988-89 are expected to top 11,000. From the rather modest beginnings in the last six months of FY 1986-87 when there were a total of 646 uses, followed by 5,358 uses in the next fiscal year, the increase has been dramatic.[22]

Similarly, as new data bases and new formats continue to evolve, the need for ongoing fiscal planning, collection management, housing of services and training of staff cannot be underestimated. If they are, reference librarians will not be

able to provide the services that patrons expect.

While automation offers alluring and exciting opportunities for libraries to provide increased access to information for users, it also challenges reference librarians to provide quality assistance to accompany the achievements of technology.

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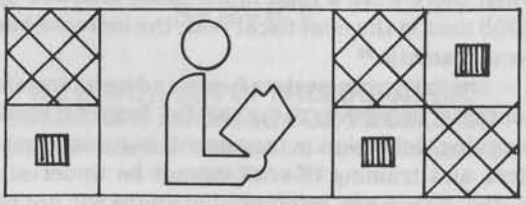

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Automating The Reference Department: A Goal Oriented Approach

Johannah Sherrer

Two years ago during the annual departmental goals session, the Reference Department at Perkins Library outlined a series of goals and objectives designed to encourage the integration of electronic reference tools and services into the traditional delivery of reference services. Each member of the department made a commitment to increase his or her online searching skills and to experiment in an open minded way with new CD products. This past year the two previous goals were reaffirmed and a third goal was added. It called for the development of INFOLINE, an electronic bulletin board system designed to enhance user access to reference services. Underlying our endeavor is the belief that new technology has a great deal to offer both the user and the librarian. We are attempting to concentrate on the positive aspects of new technology and how we can use it to enhance reference service.

Central to the implementation of new technology is the word *service*. We see our student patrons as having a limited time with us. It is our goal to make reference service during that time the best they can receive. When they leave the university, we want them to think back to their four years of library use in positive terms and perhaps as a standard with which to measure future service.

Electronic reference tools and services exist in several different forms at the Duke Library. Traditional appointment-based online search services exist in combination with increased online ready reference searching. We subscribe to a growing number of CD products and we have established an electronic reference query system called INFOLINE. Although the products and services differ greatly in their structure, several governing philosophies tie their implementation and use together.

Our planning for reference services is marked more by openness and the awareness of possibilities than by policy statements that attempt to deal with every imaginable problem that might arise. We have found that even when we study situations in great detail, it is impossible to second guess the reality. Our approach has been to deal with problems if and when they arise.

Johannah Sherrer is head of Reference Services at Duke University's Perkins Library in Durham.

CD Services

At Duke, one of our goals is to provide open access to all CD products. We observe independent user access and modify the access and user guides as necessary. Currently we have four dedicated public access stations and one that handles two separate data bases. The dedicated stations have been assigned to *SocioFile*, *PsycLit*, and two for *Infotrac*. We have a UMI station that provides shared access to *ABI Inform* and to *Newspaper Abstracts*. We keep the *ABI Inform* disc and the two *Newspaper Abstract* discs on the table with the PC. We allow patrons to change the discs, and we keep access to all the products open even after the Reference desk is closed. After two years, we have yet to experience vandalism or theft of any items. We do not have a limit on printing nor do we charge a fee for the use of the PCs.

Creativity, openness, and flexibility are essential elements in the delivery of new reference services.

We are also determined to handle the maintenance of the equipment in much the same way. We keep a supply of ribbons and ink jets at the desk as well as extra boxes of paper. During the busy times, we will ask the user (usually a student) to carry the paper boxes out to the PC and to thread the paper. Many patrons are more than willing to change the ribbons as well. At first, staff members were self-conscious and fearful of handling these duties and found the complexities of changing ribbons and inserting the paper correctly a major concern. The student patron, however, has been more than willing to lend a helping hand. (Especially if it speeds up access!) Since the library is a self-help facility in almost every other

way including the use of copy machines, we decided to extend the existing philosophy to the new services. We make every attempt possible to minimize the necessity of adding staff as we add new services. At this time we have not yet added extra student hours or support staff. Current job descriptions, however, have undergone dramatic changes.

Our experience with CDs has demonstrated that we can imagine far more problems and extenuating circumstances than actually exist. Our practice thus far has been to set up the product in a public area as soon as it arrives and deal with problems if and when they arise. The department's overriding concern is to ensure user satisfaction and ease of access.

Instead of viewing our unfamiliarity with the data bases as a problem, we look at it as an opportunity to increase our skills and to keep ourselves as current as possible.

For the most part we depend on CD software to instruct the user. Both *IAC* and *SilverPlatter* have excellent user compatible software. Most of our users are not interested in the complexities of searching but want a straightforward functional approach. After a basic familiarity with the product, a few will endeavor to search with greater sophistication. The majority feel comfortable searching with their own terminology and in their own way.

Some products, however, are not graced with smooth user compatibility. Products such as the *OED*, *PAIS*, or even the UMI products still have a way to go as user independent stations. We have developed guides to these sources and find that extensive instructions, while helpful to librarians, are not so regarded by users. They tend to prefer brief, to-the-point instructions or verbal instruction tailored to their specific information needs rather than an introduction to the system in general or to its conceptional framework. There are exceptions to this, of course, and those exceptions are accommodated.

Online Ready Reference Services

Perkins Reference Department now maintains a PC at the reference desk for online ready reference searching. In the fiscal year 1988/1989, we conducted approximately three thousand ready reference searches. These searches are done at the discretion of the librarian and when professional judgement indicates that a search will be the most efficient or, indeed, the only way to obtain the information requested. Users are not assessed fees in either of these situations.

Each reference librarian is expected to have a working knowledge of *BRS*, *Dialog*, *Knowledge Index*, *BRS After Dark*, and *RLIN*. Each reference librarian is encouraged to turn reference transactions into learning experiences as they work with patrons on unfamiliar data bases or systems. In fact, whenever we work with a patron and use a printed reference tool with which we have limited familiarity, we learn with the patron. We decided to carry this same rule over to electronic media. Instead of viewing our unfamiliarity with the data bases as a problem, we look at it as an opportunity to increase our skills and to keep ourselves as current as possible.

Infoline

In February 1989 we met to discuss the ramifications of introducing a service that would permit students, faculty, and staff who had access to a computer and a modem to send in reference questions, suggestions and other messages twenty-four hours a day. A bulletin board system was chosen as an interim mechanism while the University moves toward the installation of a local area network for the campus. We decided not to limit the service to categories of information, but to open it up to any question a user had. We would answer it as we would any reference question received in person or over the phone. Since we were uncertain how the system would be used, we decided to implement the service for a trial period to gauge use and demand. By March 6 we were ready for a trial run and had prepared an advertising blitz of the campus. Each person in the department participated in the planning and initial trial period of the service. More than eight hundred users logged on within a two and a half month period. Many offered advice and suggestions in the further development of the system.

Currently, INFOLINE provides a means for registering suggestions concerning the Perkins Library System; for learning the schedules of libraries in the system; for requesting material on interlibrary loan; and for answering reference questions online. Questions received before 8 a.m. each day (except Sunday) have a response by 1 p.m.; those received before 1 p.m. on any day have a response by 4 p.m.; and those received by 4 p.m. have a response by 8 p.m. of that day. Our

goal for this coming year is to begin downloading bibliographic files directly to the user via INFO-LINE. What we have found most gratifying during the development of the service is that as a department we have worked toward a goal with dispatch, confident that we can handle the ramifications of the system's success or failure.

We have learned that compromise can indeed produce quality reference services and that, without it, momentum toward improved library services can be slowed or even stopped.

Conclusion

Our profession is not a static one. It offers opportunities for continued growth at every level. In reference we have the opportunity to use analytic skills on an hourly basis. New ideas and new concepts abound in the delivery of reference services and not all of them require enormous budgets. Creativity, openness, and flexibility are essential elements in the delivery of new reference services. They are essential elements in the provision of traditional reference services as well.

Sometimes fear of the unknown, fear of making mistakes, or the fear of losing face often impede the provision of imaginative and aggressive reference service. We have learned that in many cases it is our own recalcitrance that limits reference service, not necessarily an imperfect product, difficult data base or an uninformed public.

We have grown a great deal as a department in our attempt to integrate automated reference tools into daily reference activities. We have learned to have more respect for user satisfaction and to trust a patron's ability to make informed decisions about his or her own information needs. We have learned that users want answers with as few impediments to the direct information source as possible. We have learned too, that there is no one way to accommodate user preferences.

We know that differences exist between librarians and users when defining or even identifying problems of access. We have learned that compromise can indeed produce quality reference services and that, without it, momentum toward improved library services can be slowed or even stopped. We have learned not to commit to assumptions about the unknown and to greet the unknown confident that as professionals we have the experience and the ability to welcome problems as challenges rather than obstacles or headaches.

Our endeavors over the past several years have made us realize that we should question the wisdom of evaluating new concepts, services or technology by standards developed for previous times. But perhaps the greatest benefit of our efforts to incorporate automated sources into reference services has been the necessity for rethinking established concepts regarding user information needs and to reassess not only what we are doing, but why we are doing it.

Each person in the department has grown quite dramatically in the past two years. We feel that our reference abilities and our collective efforts in providing reference service have reached new levels of quality and efficiency. Statistics show an increase of thirty-two percent in reference transactions over the course of the past three years. The ratio, however, between reference questions and miscellaneous/directional questions has not increased and represents approximately twenty-three percent of the total number of queries. We believe that future technological advances, when incorporated with thought and creativity, can offer even greater levels of quality and efficiency.

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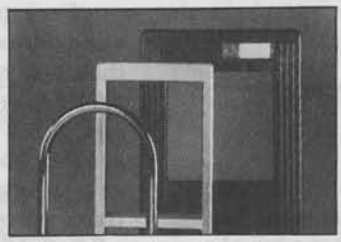

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Teaching Computer Skills in the Public Schools of North Carolina: Moving from Who to How

Carol G. Lewis

When the first computers appeared in schools, they created many different emotions: fear, anxiety, and excitement. Think back to the first computer demonstration you attended. Can you remember your emotions? We've made a great deal of progress since then. But, has it been as much as we could have expected? Are we doing what we now need to be doing? Are we asking the right questions? This article suggests that we may be asking the wrong question and offers a suggestion for a more meaningful query.

Who Should Teach Computer Skills?

A continuum of computer skills needed by all students is included in North Carolina's Information Skills program entitled "Library/Media/ and Computer Skills" and can be found in *Basic Education Program*, *Standard Course of Study*, and *Teacher Handbook*.[1]

These documents form the basis for a philosophical position statement for North Carolina: Information skills should be an integral part of the curriculum; therefore, teaching those skills is the joint responsibility of teachers and the media professional. Working together as an instructional team ensures that students will be taught the skills needed now and in the future. Further, each teacher is charged with responsibility to integrate appropriately library, media, and computer skills into subject areas for which she or he is specifically assigned.[2]

Since the publication of the 1969 joint AASL/DAVI standards, *Standards for School Media Programs*,[3] subsequent national professional guidelines have called for the media coordinator **to work actively** with teachers to support the school's curriculum: "The most effective media program depends upon the support of the school principal and upon an ongoing partnership between teachers and media specialists."[4] Although support for a collaborative, cooperative effort between the school media coordinator and teacher is found widely in professional literature, actual practice lags behind these calls for the team approach. Why?

Realities

First, in a rapidly changing environment, it is difficult to identify priorities. About the time we think we have an answer, the question changes. Change is unsettling and creates discomfort. For the media coordinator trained in traditional library responsibilities, rapid change and expansion of the role into unfamiliar territory can be threatening. Since the tasks of librarianship are never ending, it is safer and more comfortable for many media professionals to fill the hours at work with familiar routines. For the classroom teacher, planning with others requires more time, which often seems scarce during the course of an instructional day. Media coordinators and teachers have ever-increasing responsibilities. Thus, it is easier for both to continue operating as usual without assuming responsibility for integrating newer technologies into skills and content lessons.

Second, as noted by Ely,[5] there is evidence of differences in the role of the media coordinator as perceived by media professionals and by teachers and administrators. These differences are reflected in the degree to which the school's media coordinator is directly involved in instructional matters. Frequently, principals do not recognize the instructional role of the media professional, and teachers often view the role only as "provider of resources."

Third, there are a number of variables unique to each school setting that influence instructional methods and content. Examples of variables include: the number of computers available, types and quantity of compatible software, presence or

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absence of a locally adopted curriculum or scope and sequence, location of computers in the building, and grade span in the school. Each set of variables will present a unique set of challenges and opportunities. Since needs are different, the way a computer skills program is implemented will vary from school to school.

Variety Typifies Practices in North Carolina

Recent school reform efforts in North Carolina have yielded a state-mandated *Course of Study* and a three-year funding program from the state legislature that has provided a computer curriculum and dollars for computer hardware, software, and staff development between 1985 and 1988. Although a straightforward philosophical answer can be given to the question of who should teach computer skills, school administrators faced the advent of microcomputers with an eye toward finding the most qualified people available to do the teaching. Across North Carolina a variety of solutions were found to answer the question; therefore, variety is the word which best describes the status of computer education in the state.

It is encouraging to see educators interested in incorporating newer technologies that enhance learning experiences for students, rather than allowing the technology to drive the curriculum.

In many cases, media coordinators have seen their role expanded to include computer coordination and teaching responsibilities. Still others continue to lobby their administrators for access to a microcomputer. Some schools chose to place computers in a lab and hire a computer teacher. Still others placed a computer in each classroom and provided varying degrees of staff development.

In 1983, the General Assembly provided special funding for one hundred teaching positions that could be used for math, science, or computer resource teachers. Approximately sixty percent of these positions have been used each year for computer resource teachers, signaling a perceived need by school adminstrators faced with the task of providing computer skills instruction to all students.

Changing the Question

Questions about computers have changed since their introduction as education tools. Initially, interest ran high regarding what hardware to purchase and what software was available—unfortunately, usually in that order. More recent questions focus on how to plan effective instructional applications for students. These plans may include using computers with other technologies, widening the scope of learning opportunities for students.

Three examples of meaningful learning experiences that integrate information skills into various content areas are: 1) The use of a data base management program makes it possible for students to organize, manipulate, and access information to solve problems relevant to the curriculum and to their lives; 2) Telecomputing not only provides "real audiences" for research and writing projects, but it closes geographical gaps and allows students to participate in collaborative learning activities in every curriculum area, 3) Through desktop publishing applications, students are able to communicate with others and share acquired information with peers and teachers in exciting new ways.

The shift in questions has relevance for those who would still ask WHO should teach computer skills. Perhaps a better question is HOW. How can computer skills instruction be more relevant, interesting, and effective? How can we make sure that students acquire the skills they need to be successful learners and effective adults? The examples above represent only a few of the more recent instructional applications being practiced in North Carolina schools. It is encouraging to see educators interested in incorporating newer technologies that enhance learning experiences for students, rather than allowing the technology to drive the curriculum.

With the new question comes a continued emphasis on planning and partnerships. The teacher and media coordinator, both teachers, bring different types of expertise to the learning process. They jointly need to define and implement the program that teaches computer skills most effectively to students. That is the bottom line answer to WHO should teach the skills.

The media coordinator, as resource specialist, knows where to get the needed resources and provides a variety of alternatives for lesson design. However, she or he cannot know each student's individual needs and the curriculum content as well as the classroom teacher—circumstances which call for a successful partnership.

For those who consider the needs of students first, there is a recognition that students who are interested in the lesson, are actively involved, and enjoy personal successes continue to learn no matter WHO is teaching.

Change as a Constant: The Challenge

Blink your eyes or avert your gaze and you find that another new technology is emerging over the educational horizon. In conversations, we frequently repeat the maxim: the only constant is change. As requirements for the work place continue to change, schools are called on to modify practices and learning opportunities offered students. Effective planning is necessary for survival in this rapidly changing environment. It may be that a lack of knowledge about **how to plan** and insufficient **time to do the planning** constitute the greatest barriers to cooperative curriculum design efforts.

We do not know the extent to which computers and their applications will change the school environment. But, as change occurs, media coordinators and teachers must change. The challenge is for all educators to remain resilient, adaptive, lifelong learners, and ready to rethink and revamp the curriculum as the need arises.

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Where Do We Go from Here? One School System's Look at Past, Present and Future Uses of Technology

Diane Kessler and Lynda B. Fowler

Change is all around us—in our work places, our homes and our schools. As noted in *Information Power: Guidelines for School Library Media Programs*, "Change—rapid and pervasive—may be the single most important characteristic of life in the twentieth century."[1] Nowhere is this more apparent than in the development of technology and its uses in our society. But technology and its components are expensive, constantly changing, and somewhat intimidating to the novice user. How then can we incorporate knowledge of these developments and their uses into the public school setting where a majority of the staff is still afraid of computers? On what uses should we concentrate, and how can we familiarize reluctant faculty and staff with the incredible versatility and range of technology? Is it really necessary to include technology in public schools anyway? Again, quoting from *Information Power:*

> *All aspects of education are significantly influenced by major technological advancements. The complexity of instructional technologies can, at times, overwhelm educators seeking ways to integrate them into the school curriculum. By assuming a leadership role in the use of technology in the school, the library media specialist promotes effective use of instructional technologies and facilitates their full integration into the curriculum.*[2]

These questions and concerns cannot be answered simply or all at once. In the Durham County Schools we have used a combination of long-range planning and support at both the school and the system level to introduce new technologies and to incorporate them into the curriculum.

Development at the School Level

At Neal Middle School in 1979 we began with a solitary Apple IIe computer and three adventurous souls (one media coordinator and two math teachers) who were willing to experiment and proselytize. We found that we had our administration's full support, an absolute requirement for success. We formed our own school-based computer committee and began to do some long-range planning and to establish some basic rules to which we still adhere today. For example, we stated that we would purchase no software that had not been previewed by someone on the committee. We concentrated on establishing a computer lab in our media center that would have twenty computers available to students and two computers that were reserved for teachers. We gradually increased our number of computers by selling cookies and using various funds (such as state computer funds) that became available to us.

But when the amount of hardware began to increase, we were faced with another ongoing problem: software — that is, how to preview software, how to afford to purchase all the software needed and, most importantly, how to use all the software programs without infringing on copyright laws. At first, software publishers made it extremely difficult, if not impossible, to preview software. In Durham County we circumvented some of these problems by using Media Evaluation Services in Raleigh. Our Media Processing Center also told us if another school in the county had a piece of software in which we were interested; we could then borrow it from that school for preview purposes. Central-level Media Services also established a software preview library that is now available to all county personnel. In recent years, the publishers' restrictions against preview have relaxed greatly, and it is now relatively simple to obtain a preview copy of software.

Another major problem was having enough copies of a piece of software to use with an entire class. If we wanted to buy twenty copies of a disk that cost $29.00, then we had to pay $580.00. Today, of course, there are a number of alternatives to spending an entire software budget on

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one program. First, there are lab packs. These usually consist of five to ten copies of the program disk at a prorated price. Another possibility is becoming a member of MECC (Minnesota Educational Computer Consortium). The MECC software has dramatically improved in the past few years, and members are entitled to multiple copies of any program (if the members furnish the blank disks to be copied). A third alternative is available primarily through Sunburst Communications, a major educational software publisher. On certain of their packages, Sunburst grants permission to download the program and move it to another computer. One needs to be careful, however, to check the documentation to be sure about each separate program. A fourth way of solving the software dilemma is the use of public domain software. At Neal and in Durham County as a whole we have made extensive use of the FrEd programs, i.e., FrEdWriter, FrEdSender, and FrEdMail.

We are very proud of the software collection we have built at Neal. We have purchased a number of commercially prepared programs and used the MECC software extensively as well as some of the public domain software. We have encouraged the interest in and use of software in all areas of the curriculum. As a result, our computer lab is used by teachers in every discipline: home economics, special education, business and music, as well as the more traditional academic subjects such as language arts, social studies, math, and science. We also make a number of utility programs available to our faculty and staff, i.e., *Print Shop*, *Crossword Magic*, *Puzzles and Posters*, *Super Print*, *Slide Shop*, *Super Sign Maker*, and *Grade Manager*.

A third area that we continue to work on is the attitude and awareness of the faculty. At Neal Middle School we began with outside consultants who came in to do workshops for our faculty; then the Durham County Schools began to offer workshops; finally, we began our own training workshops. The school level workshops have been the most popular by far as we concentrate on the state Level One Computer Competencies. We include a competency workshop in our plans biennially and have been very pleased with the results as our teachers learn to use utility programs and become familiar with software in their areas. We also publish newsletters concerning new materials and updated bibliographies.

With the formulation of the Durham County Schools' Technology Plan, our Computer Committee became the Technology Advisory Committee. The media coordinator serves as chairperson and all areas of the curriculum are represented. The committee works closely with the administration as we plan for future developments. For example, when Neal became a middle school instead of a junior high school, we had a great deal of input into decisions about the new classroom building and the purchase of equipment. As a result, there is a separate computer lab in the new building and the number of computers has almost doubled.

So what are the results at Neal Middle School ten years later? First of all, we now have two computer labs: one in the media center that is available to the entire school and one used as a classroom for teaching computer literacy. We have seventy computers, some stationed in classrooms and others on carts that can be moved from one classroom to another. Our lab in the media center is in almost constant use by teachers across the curriculum, and our workshops for teachers remain popular. This year the county purchased for each school a computer with printer and modem to be used for telecommunications. Each media center has been equipped with a dedicated phone line and we are now learning about bulletin boards and electronic mail. These developments have come about because of continued long-range planning and support, both at the school and central office levels.

Development of the System Level

The entire set of challenges as presented in *Information Power* is applicable to system-level media and technology personnel. However, the implications of providing "leadership and expertise in the use of information and industrial technologies"[3] relate most directly to system-level responsibilities. By providing "leadership and expertise in the use of ... instructional technologies,"[4] a support base is formed for the school program.

The school community is greatly influenced by developments in technology. It is the obligation of the system-level media and technology personnel to investigate, evaluate, and determine the general direction of that influence. School system personnel must strive to be proactive in implementing technologies, although planning for this quickly changing area is often uncertain and at times develops into an educational guessing game.

Durham County, like all other school systems in North Carolina, developed a computer plan as

one of the requirements for receiving monies appropriated by the State Legislature in 1984 for the purchase of computers. This plan served the system well for several years. System-level support was given to each school as it planned for the incorporation of computers into the instructional program. Direction of the program, hardware and software selections, personnel concerns, and other decisions were made at the school level, but not all schools were as committed as Neal to a well-organized, appropriate plan for the use of computers. Inequities began to surface as the computer program in each school developed. These inequities, concerns about implementing the *North Carolina Standard Course of Study*, and the rapid development of technologies appropriate for education led administrators to take a close look at the entire computer/technology area.

There were questions to answer. How would the newer technologies such as CD-ROM, interactive video, and hypermedia be used in the classroom? How could present inequities be corrected and future ones be avoided? Who would manage the use of newer technologies? How would staff members be trained? Who would pay for new hardware and software? How would the effectiveness of each technology be evaluated? Principals were especially concerned about investing school budgets without first knowing how useful a technology would be in educating students. System-level and school personnel were in a dilemma about which direction to follow.

Media Services staff members examined the old computer plan and found it offered little help in answering these questions. A committee composed of three people from Media Services, two elementary principals, one middle school principal, and one high school principal was formed. The committee's challenge was to determine the present status of technology in Durham County Schools, to address the questions surrounding the future uses of technology, and to chart a course for the school system.

The committee's work resulted in a document which outlines "a systematic, non-fragmented approach to incorporating technology into classroom instructional programs"[5] and which gives direction in eliminating the inequities in the existing program. The plan supports the individual school program by providing overall direction and establishing minimum expectations, but does not limit extended program development at the school level. (A copy of the plan can be obtained by writing Durham County Schools, Media Services, 3507 Dearborn Drive, Durham, NC 27704.)

The plan format lists possible educational objectives and defines a five-step process for considering various uses of technology. The five steps assist school media coordinators in evaluating, selecting, managing, and using both existing and emerging technologies. The plan ensures that each technology is evaluated on its educational merits and on how well it will support and enhance the curriculum. Awareness, application, development, implementation and evaluation are the five steps. Each step is defined and expanded through these areas: support/training/strategies, resources/costs, person(s) responsible, completion date, and evidence of completion.

Developing **awareness** of the various forms of technology is the first step to potential implementation. The plan outlines possible methods for keeping school personnel informed of the developments in technology. The **applications** step involves close examination of the instructional program areas that can be strengthened, enhanced, and expanded by the use of a given technology. This step is designed to identify possible uses of a technology in the classroom. We have depended heavily on information provided by the State Department of Public Instruction in this step of the plan. Does the technology have a valid place in a school is a question we must continuously answer.

Once a possible application is identified, the plan calls for an experimental project to help in the **development** of an effective use for the technology. The experimental or pilot project concept has been used with much success by Computer Services in the State Department of Public Instruction. We chose to use the same process. The pilot project concept serves as a model and provides experts within the school system on whom others can rely and furnishes data for future decision making. Most of these pilot projects are funded by the system and are not the fiscal responsibility of the individual school. The success of the pilot projects determines whether or not full-scale implementation will occur. This **implementation** step includes the purchase of hardware and software, the training of personnel, and the consideration of necessary facility needs. **Evaluation** procedures are incorporated into each step and are also an overall step in the plan. Continuous examination is essential to provide the best instructional programs for our students.

In addition to the five-step process for evaluating various forms of technology, the plan discusses personnel and budget implications. The

plan places decision making in each school with the Technology Advisory Committee. The commitee serves as the link between equipment and materials and the implementation of ideas. The plan does not address all technology concerns of the school system or of individual schools. Media personnel have much to do to keep all members of our school community informed. Special consideration must be given to providing school board members, parents, and administrators with a true picture of what we are doing with technology and what our future plans include. A well-informed audience is a receptive audience.

At present the plan addresses computer-assisted instruction, telecommunications, online retrieval, school television, interactive video, CD-ROM, and hypermedia. The stage at which a particular technology was being used at the time the plan was implemented determined which of the five steps would receive the most emphasis. Many teachers continue to use computers only for drill and practice. The awareness and implementation steps are the focus as these teachers' needs are addressed. Although televisions and VCRs are older forms of technology, few teachers are applying them to the effective use of School Television in the classroom. By using the five steps outlined in the plan, a process is now in place for encouraging more teachers to use School Television.

Little more than a year has passed since the superintendent and his Administrative Team approved the plan and offered support for implementation. There are projects in each step of the plan. A modem, computer, printer, and telephone line are now in each media center for various telecommunication developmental projects. One junior and one senior high school have piloted the use of Dow Jones online retrieval services and will implement its use this year. Media staffs and selected faculty members at two high schools have received training in the use of Dialog retrieval services. They will begin pilot projects this year. Workshops at the system level are offered on the use of specific computer programs as a way to determine appropriate application of these programs. Plans are underway for a day-long Technology Fair to foster awareness of the latest developments in technology. Central office staff, school board members, principals, and three teachers from each school will be invited to this event. Several teachers are piloting level one interactive video. One school is studying the applications of level three interactive video for instructing English-as-a-second-language students and is in the process of organizing a pilot project. The science coordinator is investigating possible applications of interactive video to enhance science instruction. A group of social studies teachers has created a series of possible applications for various uses of technology in their instructional program. They plan to pilot their ideas this year and share their successes with other social studies teachers next summer. The plan has given Durham County Schools a framework within which to operate and has provided a direction in which to progress. The plan is working.

Staff development will continue to be an important technology issue. Inservice activities must be sufficiently diverse to keep staff informed about new developments, to provide training for application, and to facilitate changes certain to occur through the use of technology. We need to investigate more thoroughly the changes in planning, budgeting, and instructional methods essential for the successful implementation of technology. In a recent article in *Educational Technology*, Christopher Dede warns us of a common error in assessing technology. We must give close attention to

> understanding its eventual impacts and consequences. Emerging instructional technologies may lead to a new definition of human intelligence; partnerships between teachers and intelligent tools; and a dramatic shift in the goals, contents, methods and clients of schooling.[6]

Are we prepared to facilitate "acceptance of [technology's] indirect effects"?[7]

School and system-level media personnel must work together to encourage and support innovative uses of technology and yet maintain a sense of direction. Through the implementation of our Technology Plan, we in Durham County are pursuing creative and effective uses of technology. We will continue to evaluate and rework our plan, set new goals and provide an atmosphere in which changes brought about by technology are accepted.

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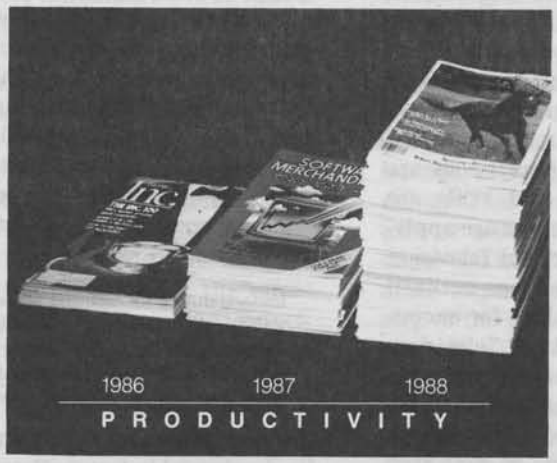

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Staff Education in Automation Through Vendor Demonstrations

Linda Folda

The implementation of an automated library system is a complex, time-consuming, and costly process. Anyone who has gone through it or is even just beginning to read about it is aware of the importance placed on staff education and training in ensuring a smooth transition from manual to automated routines.

Joseph R. Matthews points out that,

> Unlike ducks and water, people do not take naturally to computer systems. People, both staff and patrons, must be properly introduced to the computer and oriented as to how computers work—and how computers do not work. They often must be cajoled into using the computer and seeing ways the computer can help them in their work.[1]

And John Corbin states that, "Introducing a new automated system can be particularly traumatic because it involves change and technology, two societal elements that some people fear and distrust."[2]

Lurking in the background is the notion, presumably based on bitter past experience, that a recalcitrant staff member who opposes change, especially any change that is associated with that nasty word, "technology," will sabotage the system by refusing to learn how to use it correctly.

We have not so far identified any such recalcitrant staff members at the Chapel Hill Public Library. We have, nonetheless taken these caveats to heart and liberally sprinkled our three-year time line for the implementation of an automated system with training sessions. These training sessions are aimed at the entire staff but are of special relevance to the support staff who do not have the benefit of exposure to automation through the workshops, conferences, and visits to other libraries that are available to the professional librarians. The sessions so far have covered a variety of topics including the terminology of automation, the design and component modules of an integrated library system, the why and how of retrospective conversion, and the linking capabilities of barcode labels.

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There is no question, however, that library automation is fraught with the thousand words syndrome: however much you describe an automated procedure, be it with words, charts, graphs or screen layouts, it only takes on form and meaning when seen in operation. Providing that form and meaning for the staff became our goal in arranging a series of four in-house demonstrations presented by major vendors of automated systems.

Preparing for Vendor Demonstrations

The success of these demonstrations, as with any of the steps of the automation process, was based in large measure on careful preparation.

We began by identifying the systems that seemed most likely to meet our needs. We were looking for a fully integrated system that would include modules for acquisitions and serials control. Our greatest emphasis, however, would be placed on the clarity, flexibility, and ease-of-use of the circulation module and the public access catalog. Finding systems with the necessary combination of features was done by reading current library literature on what was available, soliciting information materials from the vendors themselves, and trying out the systems at library conferences.

The next step was the preparation of an evaluation form for the staff to use during the demonstrations. We found writing this form, which is included at the end of this article, to be a useful check on our choice of vendors in step one. The questions in the form were distilled from the draft list of specifications drawn up by the librarians on the staff after studying five or six existing requests for proposals. While at this point we were still a long way from developing a clear notion of "mandatory" specifications, the questions were designed to highlight features of a system that we felt were important and to draw the attention of the staff to the possible benefits of an automated system. Before the demonstrations began, a training session was held for the staff during which the purpose and content of the

form was explained. There were no requirements, however, that the form be used or that it be turned in for evaluation.

We contacted each vendor several weeks before the first demonstration, initially by phone and then by a follow-up letter which provided some background information about the library, outlined the basic schedule of events we had in mind for the implementation of an automated system, explained why we felt this system would be a good candidate for our needs, and discussed the purposes of an in-house demonstration. Each representative was asked to send three or four packets of information about the system for routing among the staff prior to the demonstration. Each was also sent a copy of the staff evaluation form and asked to organize the demonstration on the basis of that form. This tactic proved to be especially helpful when demonstrations ran overtime because the technical services staff, whose concerns were addressed toward the end of the form, were more at liberty to stay and continue the demonstration.

The four demonstrations were scheduled at intervals of approximately five weeks. Wednesday was picked as demo day because most of the staff could be at the library either in the morning or afternoon, and no other activities were scheduled in the meeting room on that day. Each vendor was asked to schedule a three-hour presentation to begin at 9:00 in the morning and to be repeated at 2:00 in the afternoon.

We clarified equipment needs well in advance with each vendor. For two of them we needed, and had installed in the meeting room, an independent telephone line for accessing remote data bases. There were also calls for an overhead projector, a chalk board or flip chart, and tables for arranging the equipment; and it never hurt to have a couple of extra extension cords on hand.

In the course of this process we learned an important corollary of library automation projects: a snafu will inevitably occur despite any amount of careful preparation. One vendor arrived with a team of three people and a van of equipment, only to discover that somehow the terminal keyboard had not been put on board. Fortunately, a local businessman had a compatible keyboard and was willing to loan it for the day. In another case, we attached the vendor's modem to the phone jack and discovered to our dismay that the telephone company had mistakenly disconnected the line. Happily, some helpful operator responded efficiently to our anguished call, and the demonstration took place almost as scheduled.

Benefits of Vendor Demonstrations

The responses of the staff have been most gratifying. We have a wide range of computer literacy among our staff members, from computer hacks to computer phobes. But even the hacks, however, had had very little exposure to library automation. In all cases, it was apparent that as the demonstrations progressed, so did the comprehension, from glassy-eyed puzzlement after the first vendor's visit to a clear idea of what might show up on the terminal screen next and why.

The more experienced staff members were impressed by the versatility and flexibility of the systems presented. They were aware of the amount of data being manipulated and felt that the many options available for accessing that data were easy to understand and use. For people on the circulation staff some of the possibilities presented were downright dazzling: being able to identify in a few seconds where a book is, be it on the new book shelf, in mending, or overdue; having control over the whole process of recording fines, printing overdue notices, and blocking delinquent patrons.

While some of those staff members who might originally have been classed as computer illiterate did not emerge feeling completely comfortable with automation, their acceptance level was greatly enhanced. They were pleased to discover that they could in fact distinguish differences among the systems and form opinions about which features they liked better than others. They could see how efficiently the systems handled such labor-intensive activities as checking in materials and placing reserves on books. They also became aware of procedures an automated system can handle that are now impossible, such as keyword searching or telling a patron exactly which books he has checked out and when they are due. We sincerely regretted having to tell one staff member who asked, "Can we have it tomorrow?!," that we were almost two years away from having our own system up and running.

There are several other advantages afforded by these demonstrations. For one, the librarians developed a much better understanding of the functional specifications for the individual modules of an automation system and which ones should be included in our own request for proposals. For another, we became aware, almost belatedly, of the public relations impact that could be derived from these demonstrations. We invited as a matter of course any interested librarians in the area to view them; but we also asked

town officials and library trustees—basically anyone who was completely in the dark about library automation but who might have some impact on the approval process, either directly or in terms of patron support.

The system representatives themselves were all very cooperative and helpful. They arrived as scheduled, required very little assistance with setting up or taking down their equipment, arranged their terminals for maximum visibility, and had numerous handouts for the staff. Our staff members are not, by and large, reticent about asking questions. In almost all cases, the demonstrator took pains to show how the system responded to the needs expressed in those questions. Indeed, much of the credit for the success of this educational enterprise is due to the vendors themselves.

Through this series of demonstrations the staff members became acquainted enough with the features of an automated library system to realize that this new technology is not only not threatening but in fact very helpful in providing services and information to public and staff alike. It will be nice when we can say, "We'll have it tomorrow."

References

1. Joseph R. Matthews, *Choosing an Automated Library System: a Planning Guide* (Chicago: American Library Association, 1980), 71.
2. John Corbin, *Managing the Library Automation Project* (Phoenix: The Oryx Press, 1985), 158.

Automation Demonstrations

Chapel Hill Public Library

Vendor Information

Name of company: _____
Providing a library automated system since: _____
Name of system: _____
Number of customers with installed systems as of 6/30/87: _____
Hardware CPU manufacturer: _____
Software operating system: _____

Circulation and Borrower Control	YES	NO
Patron registration		
1. Does the system allow searching by *any* of the patron registration fields of information?	____	____
2. Are records of patrons with fines or overdue materials stored indefinitely?	____	____
Checkout Activities		
1. Does the system permit circulation of uncataloged materials (such as puzzles and pamphlets)?	____	____
2. In order to accommodate a variety of patron/material categories, does the system provide capability for several loan periods?	____	____
Renewals		
Will the system allow renewal of all items checked out to a patron with a single renewal request?	____	____
Check-In		
Does the system permit and keep a record of "claims returned" check-ins by patrons?	____	____
Reserves		
1. Will the system allow reserves to be placed on a specific copy of a title as well as on all copies of a title?	____	____
2. Does the system remove reserves from other copies of a title when all the reserves on the title are satisfied?	____	____
Patron and Item Blocks		
Does the system both audibly and visually interrupt the operator when there is either a patron or an item problem at checkout?	____	____
Fines and Overdues		
Will patron records contain a subrecord for each item for which money is owed, including notification information (dates of notices) as well as all fee and payment information?	____	____

Public Access Catalog

Searching

1. Can you browse the PAC by author, title, subject, or call number? ____ ____
2. Can you search the PAC by single and multiple keywords? ____ ____
3. Does the system guide you in continuing a search if no match is found? ____ ____
4. Does the system make allowances for misspelled words? ____ ____

Displays

1. Does the PAC have the following displays:
   a. A brief record, consisting of one or two lines of information? ____ ____
   b. A full record, containing full bibliographic information? ____ ____
   c. A copy information display, giving information about location and current status of copies, as well as brief bibliographic information? ____ ____
2. Can you scroll forward and backward as well as page forward and backward? ____ ____
3. When a search results in more than one item, can the PAC list them in call number order? ____ ____

Help Messages

1. Does the system have an online, general tutorial on using the catalog and conducting searches? ____ ____
2. At any point in a search, can you easily get a help message which directly relates to the screen being displayed? ____ ____
3. Is there an index of the help messages available, with a short description of each? ____ ____

Acquisitions/Fund Accounting

1. Is the acquisitions function operational now and able to be demonstrated? ____ ____
2. Can book costs be shared among funds (i.e., general book funds and gift/memorial funds)? ____ ____
3. Can the system report on vendor performance
   a. in percent of order filled? ____ ____
   b. how soon filled? ____ ____
   c. average discount? ____ ____

Serials

1. Is the serials function operational now and able to be demonstrated? ____ ____
2. Can the system automatically alert the operator when missing issues need to be claimed? ____ ____
3. Does the system display holdings information on the PAC? ____ ____

Management Reports

1. Does the system record and store statistics on all automated library transactions? ____ ____
2. Can the system provide reports on the following?
   a. Total fines and fees collected for overdues, and for lost and damaged materials over a certain period? ____ ____
   b. List in shelflist order titles which circulated more (or less) than a specified number of times during a specified time period? ____ ____
   c. Bibliographies by Dewey call number range, author, material type, subject, etc.? ____ ____
      Can these categories by combined (e.g. subject and material type)? ____ ____
   d. Number of patrons with materials currently charged out? ____ ____
3. Can the library formulate new reports without programmer intervention? ____ ____

Cataloging and Data Base Maintenance

Adding information

1. Can the system check for name consistency and alert the operator if there are problems? ____ ____

2. Can the system alert the operator if a new subject heading is being added so cross references can be checked? ____ ____

Deleting information

1. Can deleted records be kept in an archival status for up to two years? ____ ____
2. Can the system automatically deblind cross references to deleted subject headings? ____ ____

Changing information

1. Can authorized users manually change any part of a record (e.g., adding birth and death dates after an author's name, changing an edition statement, etc.)? ____ ____
2. Can *subject* heading changes be made globally (e.g., "Russia" to "Soviet Union") in all occurrences? ____ ____

Reports

Can the system track patron search terms and alert the operator of terms being used frequently that result in no items retrieved? ____ ____

General Factors

1. Are all functions of the system linked so that a patron or staff member using a terminal can tell if an item is:
   - on order? ____ ____
   - in process? ____ ____
   - checked out? ____ ____
   - when it is due? ____ ____
   - at the bindery? ____ ____
   - on the shelf? ____ ____
2. In your opinion, would this system be easy to learn and use
   - as a staff member?

     Yes / / / / / / No
     1 2 3 4 5
   - as a patron?

     Yes / / / / / / No
     1 2 3 4 5

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Evaluating the Performance of the Online Public Access Catalog: A Redefinition of Basic Measures

Robert N. Bland

The evaluation of automated library systems is a complex task that generally consists of three components: a functional evaluation, an economic evaluation, and a performance evaluation. The point of a functional evaluation is to determine whether a system provides those features or functions which a library desires. For an online public access catalog (OPAC), these features may range from the ability to do direct Boolean searches with a specified number of operands and operators, to the ability of the system to monitor and provide statistical reports on port activity. An economic evaluation, on the other hand, is an attempt to determine whether a given system is reasonably priced and/or priced within the budget of a library considering purchase. This assessment will normally include an analysis of initial hardware, software, and training costs as well as an analysis of ongoing maintenance and personnel costs. It may also include an analysis of the financial health of the vendor. Finally, a performance evaluation is an attempt to determine whether a system performs or executes its functions within limits negotiated between the vendor and the interested library. These limits will refer to reliability (the amount of "down" time that is acceptable); to capacity (the number of terminals and records supported, and so on); and to performance in the narrower sense (i.e., the speed at which the system runs and the efficiency with which it produces results). Capacity and operational performance are usually evaluated on the basis of a benchmark or acceptance test, in which the system is put through its paces in a configuration and an environment similar or identical to the one in which it is planned to operate.

The library literature is replete with studies and recommendations regarding the functional evaluation of OPACs. Matthews, Hildreth, Fayen,[1] and others have done an admirable job of identifying and explaining the functions which state-of-the-art OPACs should include. This literature has such breadth and depth that even libraries with limited expertise and experience with automation should have little trouble in choosing between alternative OPACs or thoroughly evaluating a single system based on functional characteristics. Through the RFP process and the sharing of information gleaned from contract negotiations, libraries generally have also had considerable information upon which to base economic evaluations. Performance evaluation is another story. Although there is general agreement on standards of reliability inherited from the wider computer industry, there seems to be little formal or informal consensus within the profession regarding the other aspects of performance evaluation. As a consequence, libraries too often find themselves acquiescing to performance evaluations based on performance measures defined by system vendors. These evaluations may not tell a library what it needs to know: that is, whether the complicated and expensive system it is considering or has purchased is really adequate in terms of power and speed for the job intended.

The computer industry has developed many methods for measuring the performance of computer systems. These range from determining the millions of instructions per second executed (MIPS) and the percentage of CPU activity consumed by certain jobs, to determining seek, read, and data transfer times for input-output operations. It is not the business of librarians to be concerned with these measures directly. What is important is how the capacity and power of a computer system translate into productivity for the library application and its intended objectives. The most familiar performance measure associated with automated library systems in general and OPACs in particular is *response time.* Most library-generated specifications for automated systems nowadays contain clauses regarding system response time, usually both for normal

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and peak load conditions. These terms are defined elsewhere in the system as the number of terminals active, the number of jobs running at a given time, and so on. The mean response time for OPAC searches under normal conditions, the specifications may state, shall not exceed three seconds. Mean response time for OPAC searches under peak load conditions, the specifications may continue, shall not exceed seven seconds. On the surface this may appear precise and effective. But what is response time? And does it have anything to do with the adequacy of the OPAC under consideration as a library catalog? The answer to the first of these questions, I have suggested, is that too often the definition of response time turns out to be what the vendor, not the library, determines it to be. And therefore, the answer to the second question is that response time may have little or nothing to do with the adequacy of the system as a library catalog.

Consider, for example, the common definition of response time as the interval of time between the instant a user presses the return or send key on the terminal and the instant when characters appear on the terminal screen "in response."[2] Let us examine now hypothetical system A. Assume that system A includes an OPAC that functions much like the typical second-generation OPACs found in most automated libraries today. That is, the system may be used with either menus or direct commands; in response to a search query, a summary screen listing matching entries is displayed; the user determines from this summary screen the records s/he wishes to see in detail; and the full record including call number for each title is then displayed at the user's request. Let us assume now that a user of this system wishes to determine the call numbers of all the editions of Samuel Butler's *The Way of All Flesh* owned by the library, and that the system is performing with an average response time as defined above of three seconds. A command search by title will involve a number of discrete steps in this system, each with its own response time wait. The command must be entered, choices must be selected from the summary screen one by one, and the full records then displayed separately. Let us say that a total of four commands are required to display the full records including call numbers for the three editions of *The Way of All Flesh* owned by the library. Thus, leaving aside for the moment the time required for the system to write information to the CRT screen and, of course, the reaction time of the user, a total of twelve seconds is required for the system to complete the user's task.

Consider now hypothetical system B, that supports an OPAC with a rather advanced natural language command interface. Here the user with the same task in mind enters the command: "find all books with title = 'Way of all flesh' and then print call number." The user waits six seconds, and then the call numbers of the three records are displayed upon the screen. Response time for OPAC B is six seconds, twice as bad as system A. Yet it is plain that the user of system B has accomplished his task in half the time of the user of system A.

What is important is how the capacity and power of a computer system translate into productivity for the library application and its intended objectives.

The same point can be made without reference to a hypothetical system with a powerful natural language command processor.[3] Let us assume that system C is identical to system A in terms of its search logic—that for a given search, exactly the same number of discrete steps are required. The operating system of system C, however, is designed and tuned somewhat differently from system A's. Response time as defined above for system C is four seconds. Yet because of perhaps a faster data transfer rate from disk, larger buffers, and less page swapping from memory to disk, system C is able to complete writing to the screen a bibliographic record complete with call number in one second versus two seconds for system A. Thus, with respect to the same example, the total execution time of the task for the two systems, now including both response time and the time to write the screen, is the same: twenty seconds. To the user, interested in results, the systems are identical; but in terms of response time system A is considerably superior to system B.

This definition of response time, then, can hardly be adequate as a basic performance measure for OPACs. It can be too easily manipulated, and without reference to the number of discrete steps involved to complete a task and the amount of time required to write displays, response time measurements can give little information about the system. Response time so defined may be even less adequate as a performance measure to evaluate other system components, where even a larger number of discrete steps may be required

to complete a task than is the case with OPAC searching (e.g., adding patrons to the patron data base in the circulation subsystem). Libraries should not participate in benchmark or acceptance tests based on this kind of performance measure, some of which may border on fraud.

Defining response time as the interval of time between the instant when a command is entered and the time when the system is ready to accept another command is certainly an improvement. Under this definition, which some vendors have accepted,[4] response time must include disk seek, read, and data transfer times, and the time to write information to the screen (which may be significant when the system is under heavy load). Yet this still does not yield a true measure of performance because it does not include the number of discrete steps which may be involved in the completion of a task. The performance of a complex, applications-oriented system like an OPAC depends on both the hardware and the software supporting that application. The performance of system A, with a poorly designed user interface requiring six steps to complete a task, may be worse in terms of genuine results than that of system B, which may require only four, even though system A runs on a larger and faster computer.

... we have fixed for too long on the dubious notion of response time as the basis of performance measures.

What we need are measures of performance that gauge the system as a whole with respect to the applications in which we are interested. For a library OPAC, the amount of time taken to complete actual catalog tasks (not computer tasks) should be the basis of these measures. In the computer industry this concept is sometimes referred to as *throughput*, that is, the amount of useful work that the system can perform under specified conditions in a specified amount of time. Alternatively, it may be referred to as *turnaround time*, the amount of time required to complete a particular job or task. For a library OPAC system, throughput is (or should be) the number of catalog searches (on average) that can be *completed* under specified conditions in a specified amount of time. Turnaround time is (or should be) the amount of time (on average) required to *complete* various catalog search tasks.

But how do we measure throughput in an OPAC and when is throughput satisfactory? We cannot simply have users perform random catalog searches, measure completion times, take an average, and then ask if they are happy. There are too many uncontrolled variables to make this kind of test very meaningful, although it is probably more revealing than the response time tests to which we have become accustomed. The system may seem to have performed poorly because some of the users were unfamiliar with it or were poor typists. It may seem to have performed well because too many easy searches were done.

I do not believe that we can expect to learn much about the performance capabilities of complex systems like library OPACs with such unsystematic approaches, any more than we can expect to learn a lot about the performance of automobiles by placing unskilled drivers in them and asking them to drive around. In both cases we may learn something important—that is, how easy the OPACs or autos are to use. But that is a different question from how well they perform.

To test performance—and particularly to compare performance between systems—we need reasonably skilled operators at the controls putting the systems through standard tests under controlled conditions. For OPACs this means librarians or other skilled users performing a variety of searches under operational conditions and carefully recording the task completion or turnaround time for each type of search. These searches should include the common known-item author and title searches, subject searches with and without subdivisions, catalog browsing, and so on. In other words, it should include those kinds of searches which librarians and library users actually perform and which the system should be designed to handle with facility. Moreover, for fair comparisions, the searches should be categorized on the basis of the number of items initially retrieved by the search. We should collect data on the task completion or turnaround time for searches when ten or fewer items are retrieved, when eleven to one hundred items are retrieved, and so on. We will then have a basis for accurately judging how a system will perform in our library *as a library catalog*, and for comparing it with other systems.

But how well should an OPAC perform? Is it reasonable to expect that title searches retrieving fewer than ten titles initially, for example, be completed on average within ten seconds? thirty seconds? two minutes? It is somewhat curious that in all the library literature on OPACs little or no data regarding this question appears, and this lack, I suspect, is because we have fixed for too long on the dubious notion of response time as

the basis of performance measures. To be sure, many surveys designed to determine the satisfaction of library patrons using OPACs have been done, and they are no doubt important and useful in their own right. Yet without quantification under controlled conditions of the turnaround time of the various activities being performed, we cannot use these studies as a basis for the development of objective standards of OPAC performance.

In an attempt to establish some baseline figures for catalog activity turnaround times in the online catalog, a study was made by the author, during the summer, of six different OPACs (representing three different systems) installed and operational in North Carolina academic libraries. Two of these OPACs were large systems, holding more than 500,000 bibliographic records; two were middle-sized systems, with between 200,000 and 300,000 bibliographic records; and two were small systems, with fewer than 150,000 bibliographic records. Five queries were made of each OPAC on each trial over a two-week period in order to determine baseline figures for the following types of catalog searches:

Search Type #1 An author search retrieving fewer than ten records, one of which (the first) is selected for full display;

Search Type #2 A title search retrieving fewer than ten records, one of which (the last) is selected for full display;

Search Type #3 A subject search retrieving fewer than ten entries, one of which (the first) is selected for display;

Search Type #4 A subject search retrieving between ten and fifty entries, the first three of which are displayed as full records;

Search Type #5 An author search retrieving between ten and fifty records, two of which (the first and last of the list) are selected for full display.

This list is, I think, fairly representative of the types of searches actual library users do (or attempt to do) in our catalogs, although it is certainly not complete. To maintain consistency in the comparisons, the actual searches done in the test were pre-selected by examining each catalog and identifying a search in each category which would retrieve approximately the same number of records as retrieved in the other catalogs. The searches were all entered as direct commands, even where menu selections were available. Turnaround time was measured as the interval between the instant when typing of the command began to the instant the last full record of the set was displayed, complete with call number. Thus, turnaround time for each type of search included the author's keying time (I am a fairly decent typist—fifty words per minute), the time for the OPAC program to decipher the command, perform disk reads to retrieve the necessary information, display the information on the screen, and wait for the next command. The author's reaction time was included, but in this case, at least, that time was minimal because it was predetermined which records from the summary screen would be further selected for full display.

The results of the test for each OPAC appear in Table 1. The figures in the bottom row indicate average search times for all the OPACs for the type of search indicated at the top of the column.

The 1989 Book Week poster has been created for the Children's Book Council by Caldecott Medalist Richard Egielski. National Book Week will be observed for the 70th year November 13-19 in 1989. Egielski's full-color 17" x 22" poster costs $6.50. It is also available with many other items at a substantial savings in the Council's Book Week Bargain Kit. Send a 25¢ stamped, self-addressed envelope to CBC (P.O. Box 706, New York, NY 10276-0706) for "Book Week Brochure" for details.

TABLE 1.
Online Catalog Searches

System	Number of Bibliographic Records	(Mean Turnaround Times) Search Types #1	#2	#3	#4	#5	ALL
OPAC 1	500,000+	21.8	19.8	21.6	54.9	46.0	32.8
OPAC 2	500,000+	21.7	18.5	19.9	70.6	69.2	40.0
OPAC 3	200,000-400,000	18.0	12.7	12.0	41.9	61.5	29.2
OPAC 4	200,000-400,000	25.5	23.4	39.9	79.2	75.7	48.7
OPAC 5	50,000-150,000	31.4	18.0	29.4	61.4	84.6	44.9
OPAC 6	50,000-150,000	23.3	17.6	18.9	54.5	48.8	32.6
Column Means:		23.7	18.5	23.9	60.9	64.4	38.2

A GLM (general linear models) procedure used with the SAS statistical package to analyze variance showed statistically significant differences among the OPACs for all five search types: $p < .05$. However, Tukey's Studentized Range Test, used to test overall performance in which each OPAC was compared against each of the others on all search types, showed statistically significant differences at the .05 significance level only between OPACs 3 and 4. The differences among all the other OPACs were leveled out somewhat by one system performing better in one search type and another better in another search type.

Intuitively, the search times for the OPACs generally seem quite good. It should be remembered, however, that the searches were done with the systems under relatively light loads during the summer when academic library use is at low ebb. It will be interesting to see how these figures change with the systems under heavy user load, as we may expect them to be during the peak periods of fall semester. Based on previous although undocumented experience, we can expect significant degradations in turnaround time for some of these systems.

It is interesting, too, to compare the results in Table 1 with Table 2, which show average turnaround times for the first three searches in manual catalogs—in one case, a card catalog for a middle-sized library and, in the second, a computer output microform (COM) catalog for a small library.[5] A minimum standard for online catalogs

TABLE 2.
Manual Catalog Searches

System	Number of Bibliographic Records	(Mean Turnaround Times) Search Types #1	#2	#3
Cards	200,000-400,000	26.9	25.9	34.4
COM	150,000	33.2	34.0	36.0

in the marketplace today might be that known-item or single-entry searches like those described in the first three test searches should be at least as efficient as manual searches in catalogs of similar size even when the system is under heavy load. Manual catalogs often actually perform better in terms of turnaround time in searches of the type described in (4) and (5), where the user's task is to identify a number of titles under a single heading, resulting from the ease with which one can move from one full record to the next in a card or COM catalog once the appropriate position in the index has been reached. Analysis of the differences in turnaround times for various catalog tasks performed in automated and manual systems can help to identify types of searches which online systems perform well and those which they perform less well. It can also help system designers to search for ways in which to overcome or circumvent the inherent physical limitations of the CRT screen.

At any rate, such a preliminary investigation cannot, of course, establish standards of itself, even for systems under light load. The point of the investigation is to show how meaningful performance measures for OPACs (or any other library system, for that matter) can be developed and used to evaluate performance in a manner which allows us to compare systems in a reasonably objective manner with respect to actual library applications, and even to compare automated systems against manual systems. Much further work will be required before true standards for OPAC performance can be developed, but there can be no doubt that standards are needed. An online catalog represents a vast investment for a library, in terms of both financial and personnel resources. We are past the time when decisions of this magnitude can properly be made on the basis of word-of-mouth, subjective user opinions, or poorly defined performance measures. Standards will also help library automation vendors to

understand library needs and to develop systems that truly meet library functional and performance requirements. The current environment, lacking as it does a consensus regarding performance measures and objective performance standards, virtually invites competitive bid situations which result in libraries' purchasing systems that are underpowered or otherwise inadequate to library performance needs. With improved measures of performance in place and solid empirical data upon which to base expectations, libraries and system vendors alike should be better prepared to avoid costly mistakes in the future.

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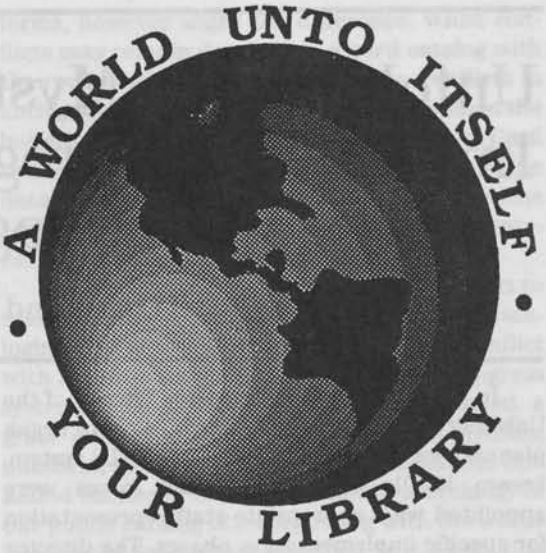
1. Joseph R. Matthews. *Public Access to Online Catalogs* (Weston, Conn.: Online, Inc., 1982). Charles R. Hildreth. *Online Public Access Catalogs* (Dublin, Ohio: OCLC, Inc., 1982). Emily Gallup Fayen. *The Online Catalog* (White Plains, N.Y.: Knowledge Industry, 1983).
2. Matthews, p. 53.
3. For those unfamiliar with natural language command processors, the hypothetical command above is by no means science fiction. Once a data base for books has been defined with call number as a field, this exact command could be used in Digital Equipment Corporation's *Datatrieve* report and query system to perform the task described.

INTERNATIONAL LITERACY YEAR

1990

Barry Moser has created a poster on *1990 International Literacy Year* for the Children's Book Council. The poster, measuring 24" x 32½", is in six colors. It costs $15.00 and is shipped rolled in a mailing tube. Send a 25¢ stamped, self-addressed envelope to CBC (P.O. Box 706, New York, NY 10276-0706) for *Current Materials Brochure* for details.



Library Administration and Management Section Formed

A new section of NCLA named "Library Administration and Management Section" (LAMS) has been approved by the Executive Board of NCLA. LAMS will hold its first program and organization meeting at the NCLA conference in October in Charlotte. Patterned (to some degree) after LAMA, a division of ALA, the mission of LAMS of NCLA will be to provide an organizational framework for improving the practice of administration in libraries and for identifying and fostering administrative skills. The section will meet its responsibility by aiding the professional development of personnel interested in administration and management and by planning and developing programs, study, and research in library administration and management problems.

NCLA members who are interested in administration and management are encouraged to designate a preference for this section (LAMS) at the time of payment of biennial associational dues. NCLA members may join LAMS any time during the year, however, by notifying the treasurer and paying section dues.

All attending the NCLA conference are cordially invited to attend the program and organizational meeting of LAMS on Thursday, October 12, from 9 to 10:30 AM.

For additional information, one may contact LAMS Steering Committee Chair, Miss Nancy Ray, Director, Southern Pines Public Library, 180 S.W. Broad St., Southern Pines 28387, Phone: 919-692-8235.

Unfolding the Mysteries of Aladdin: the Impact of an Integrated Online System on Catalog Operations

Patti Easley and Lovenia Summerville

In early 1983 J. Murrey Atkins Library of the University of North Carolina at Charlotte began planning for implementation of the VTLS system, known locally as Aladdin. Task forces were appointed with appropriate staff representation for specific implementation phases. The director also appointed the Implementation Group to guide and direct the overall system implementation based on the recommendations of the various task forces. The cataloging unit was well represented on all of the various groups, as two members of the unit served on the original selection committee. Therefore, the cataloging unit was well aware that major changes would influence the ways things were done. By June 1983, when the equipment was installed for the VTLS system, plans were being made for phases of implementation which would affect the functions of the cataloging operations. Over the next six years, many changes took place, some subtle and some not so subtle. What follows are observations of major impacts made by an online integrated system on cataloging operations and inferences drawn from these experiences.

Changes came about in cataloging operations over a period of approximately fifteen months. Basic cataloging activity was unchanged, as a dual operation was continued until January 1985. Cards were produced and filed in the card catalog until all tapes were loaded and all equipment and software had been adequately assessed. Meanwhile the pattern of workflow was under review. Training activity and documentation from VTLS suggested that the major impact would be on the bibliographic records maintenance functions.

In addition to the expected adjustments for everyday cataloging operations, the advent of "rolling conversion" (converting bibliographic records as the related items circulated) tumbled into the cataloging processes with a force not unlike that of a runaway horse with an inexperienced rider. Funding and additional staffing had been provided for a two year period to give concentrated attention to shelflist conversion (converting bibliographic records as one moves through the shelflist catalog card by card). However, the move to implement the circulation functions online in the fall of 1984 without having thoroughly studied the impact of rolling conversion on cataloging operations meant that all planning and staffing for shelflist conversion had to shift emphasis to "rolling conversion." For the next two years, notices for conversion to machine-readable records arrived by the hundreds from the circulation unit. In the past year these receipts have dwindled to less than twenty per day. This experience was the first major example of the need for better communication and understanding of the impact that organizational decisions can have on two vital functions utilizing the same system. As has been indicated, workflow review established the need to rework various processes.

The inputting and editing of OCLC records has remained basically the same, with the addition of transferring the record from OCLC to Aladdin after the shelflist card is produced. The materials processing area has also seen some changes, but these have been minor compared to those in other areas. Because bibliographic records are searchable in Aladdin after the nightly buffer run, catalogers put only one day's books on each truck instead of filling the truck.

One of the first decisions made was to link the items at the end of all other cataloging processes. We knew that if an item was linked as soon as the bibliographic record appeared in the data base, but before the item was labeled and sent to the circulation unit to be shelved, users would find the record in Aladdin but be unable to locate the book on the shelf. (Library staff know a recent "date entered" on the MARC record means the item is still in cataloging.) During the linking pro-

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cess each title is searched in the system by the call number on the label. If the title is not found, additional steps are taken to determine if the item is mislabeled or if there is another problem. We still include date due slips, although the cataloging and circulation units have discussed discontinuing this. An alternative would be to put a dated slip in the book at the time of check-out. Even before Aladdin, we have been aware of the time spent placing date due slips in books which might never be checked out.

Shortly after the implementation of Aladdin, bibliographic maintenance, authority control, and OCLC editing and inputting functions absorbed staff members who were formerly involved in filing. Most staff in the cataloging support section search and edit on OCLC as well as on VTLS. This in itself demands a degree of flexibility and sophistication. They must know bibliographic as well as system requirements for both OCLC and VTLS.

The online system has increased our need for bibliographic maintenance. The more traditional kinds of maintenance, such as revisions to name and subject headings, conflicts in forms of entry, corrections of typographical errors, and call number changes, still exist in the online system. One difference is the ease with which most corrections can be made. The capability of global change reduces hours or even days of pulling, erasing, retyping, and refiling to minutes of online editing. These compexities have raised the overall level of staff expertise in bibliographic maintenance, since the same person often identifies the error, verifies the change, and is able to make the correction at the terminal. All staff in the cataloging support section making changes to bibliographic and authority records are expected to have a certain level of expertise with both the bibliographic and item information in the record and the MARC format. All edited records automatically move from the work area to the data base during the nightly buffer run. Unless records are specifically saved, there is no review except for the messages which may appear on the daily buffer report.

Many problems which seemed minor in a card catalog are more apparent in Aladdin. Discrepancies in capitalization, punctuation, diacritics, and birth/death dates are treated as different entries in VTLS. The buffer report notes possible duplications and staff intervention is then necessary to combine the entries. If this is not done, duplicate entries become part of the data base and no other reports are printed. The system will continue to display the entry in two (or more) forms, however slight the difference. While conflicts may remain dormant in a card catalog with the record still available to the user, conflicts in authority and bibliographic records remain in the buffer until the problem has been corrected. Until then the complete record does not appear in the data base, and it is inaccessible to users. Thus, the record is not available until bibliographic maintenance has cleared all records.

All bibliographic control staff must be alert to searching techniques and how these affect cataloging. These techniques may sometimes conflict with the requirements of the Library of Congress system. Title added entries have demanded a great deal of attention. Abbreviations, symbols, numbers, and spaces may all need additional title added entries in order to facilitate searching. In our public catalog titles beginning with the words "labor" and "labour" are interfiled. In Aladdin, title added entries must be generated if it is suspected that users may search differently. In other cases entries may have to be deleted. Current LC cataloging often includes a title added entry which is identical to the record's uniform title. If the added entry is not deleted, Aladdin will display two hits on the same record. A title such as "3 [trois] freres" would have be searched exactly as written. Title added entries would be added for "3 freres" and "Trois freres." Most of this is done by the bibliographic control staff when incoming shelflist cards are reviewed. An old problem which still exists in earlier records is caused by the lack of filing indicators in author/title added entries. Titles which begin with non-filing articles have to be searched by those articles. While this is not a problem with current cataloging, retrospective conversion records may still contain these entries.

The library staff, in general, and catalogers, in particular, remain a major source of notification for conflicts. They continue to send notes as well as print-outs from Aladdin to report changes but many also utilize a quick and easy feature of the system called the /TELL command. It enables staff to send messages through the Aladdin terminals to report possible bibliographic and systems errors and/or problems. These messages are printed on the next daily buffer report. The potential for more information will grow as additional users are introduced to this feature. Incoming shelflist cards are reviewed as part of the authority process. This activity alerts the bibliographic control staff to many potential problems. The transfer and editing of authority records also contributes to the identification of errors, as does the maintenance process itself. The catalog maintenance librarian reviews daily buffer reports

which the system generates from bibliographic and authority records being transferred from the buffer to the database. These reports do more than identify conflicts and possible duplications in the system. The buffer report program has been set so that it also prints out any headings which do not have MARC authority records. From our experience, the librarian's overview of the reports serves a useful purpose.

The transfer of all name authority records causes growing maintenance problems. There are increasing numbers of conflicts between current, in-coming bibliographic records and full MARC authority records already in Aladdin. When these conflicts appear on the buffer report, the normal practice is to change the entry on the in-coming bibliographic record. This eliminates the conflict with the cross reference and releases the bibliographic record from the buffer. Experience has shown that the problem is usually created because the heading has been revised so the next step is to check the authority record in OCLC. The revised authority record is transferred to Aladdin, and all occurrences of the name are changed with a global command. The in-coming record totally replaces the existing one, including our locally edited references and notes. An added problem is that VTLS does not have the capability of deleting full authority records once all attached bibliographic records have been deleted (withdrawals, etc.). These records remain in the system to frustrate users since the displayed message is "No bibliographic records." Bibliographic control staff can delete these records if notified.

Various uses of the authority record and accompanying referral screens have been tried. The ability of the system to suppress a reference is helpful in authority control. The most common use of this feature is to record an old heading for future use in bibliographic control but without cluttering author and subject displays. On the VTLS referral screen, the cross reference displays with a message that the term is not used and to enter instead the line number of the term displayed at the end of the message. The heading with its subdivisions is not displayed; the user can miss several menu screens of appropriate entries. We have yet to determine the best method of providing authority records for entries which only have subdivisions.

Subject authority control in our library has been limited to creating authority records for major changes to subject headings, mainly those listed in the cataloging service bulletins. Cross references have sometimes been added for periodic phrase subdivisions since the computer filing arrangement is alphabetical rather than chronological. The display of scope notes for users trying to decide among two or three subject headings may also prove useful.

Barcodes are a new dimension. They can be, and are, removed by students. The reverse of this problem is that sometimes extra barcodes are found. Occasionally the barcode may be applied in the wrong area and another one added later. Double barcodes, used only with items in retrospective conversion, are sometimes confused with single barcodes which are used for new receipts. One solution was to limit the number of library staff allowed to replenish units' supplies of bar-

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codes. Double barcodes are also housed separately from single barcodes.

The placement of the barcode in the volume has received considerable discussion and study. Its present location is center top of the inside back cover, where it is anticipated that it will not become damaged as quickly as in the old location of upper right corner of the back cover. Because item numbers can be linked to only one bibliographic record in Aladdin, the barcoding and linking of "Bound With" items is a second, on-going concern. We barcode and link the first title in the volume and add only the eye-readable portion of barcodes for the other titles so they can be linked to their appropriate bibliographic reords. A status code identifies these as several titles bound together, but the cryptic message tells the user little else. It also causes problems for circulation when the volume is overdue because each item number is checked out and is therefore overdue. An alternative which we explored was to use only one barcode in the volume and link only the first title to its bibliographic record. A status code identified the other titles as parts of a bound together volume but because they were not linked, there was no circulation information for these titles. VTLS will be adding a free text line to the item screen beginning with the next release which may give us more flexibility in this area.

We have become especially cautious with bindery books. The book cover, with the barcode, is removed and discarded by the binder. If the barcode is removed and the item information deleted before the volume is sent to the bindery, staff and users have no way of locating the volume. In order to delete the old information after the volume has been returned, in-house bindery staff must photocopy each barcode (it is more accurate than hand copying) and tape it to the bindery slip. After the volume is returned from the bindery and has been relabeled, the old barcode number is retrieved in the system, deleted, and the volume linked to a new barcode number.

Adding holdings records for monographs uses only the free text field. After the MARC holdings record became available, VTLS mapped over our old records based on their programs. A serials pilot project enabled us to determine the necessary level of holdings, phraseology for notes, etc. but did not answer all our questions. Should bound periodicals be barcoded and linked? They do not circulate but the information must be in the system if Aladdin is to be used for inventory control. Should each piece of microfiche or microfilm be barcoded as well? Should individual AV pieces be barcoded? Each answer raises more questions which will need to be addressed through collaborative efforts with other areas of the library.

While there is the need to combine automation and cataloging functions in an online integrated system, there is also the need to blend cataloging functions more closely with those in circulation and public access. The immediacy with which information is available to all users creates a certain urgency to it that cataloging staff have not experienced with manual processes. Once a bibliographic record is entered into the system, it is visible the next day to all users, while the item and holdings information is available from the time of entry. The experience with rolling conversion made the staff involved with circulation and cataloging functions aware of the need for allowing enough lead time to deal with unforeseen and unanticipated results. The labor intensive practices of a manual system had built in time for adjustments to changes in cataloging or circulation practices. Where the automated system produces immediate results, the impact can have dramatic psychological repercussions. For staff to be prepared for the anticipated implementation of various related functions, it may be necessary to develop broader perspectives on library operations and services.

Basic adjustments for the public services staff would seem to be minimal. The online bibliographic record is displayed in the same basic format used on a card. However, searching capabilities and display features of the online catalog are very different from the card catalog. The advantage of call number and key word searching capabilities are additional positive access enhancements available in online systems. A knowledge of the MARC format and machine-readable records can aid the staff in public services with interpreting online displays. Various approaches have been used to inform the reference staff of changes the online catalog may present for the reference functions. From time to time informal instructional sessions with the reference unit staff on various features of the online catalog have been conducted by appropriate members of the cataloging unit. At other times the installation of new software releases, such as key-word searching and the MARC holdings format, has provided opportunities for cataloging staff to make formal presentations to all public services and technical services staff.

The pre-order searching activity has shifted primarily to searching in the online system and minimal searching activity is performed at the

card catalog. This has fostered greater familiarity with the MARC format, and the searching capabilities in an online catalog environment have also raised the consciousness of these technical services staff to the cataloging functions. The result is the increased feedback on records already in the system and the provision of additional background information for cataloging purposes. That had not been the custom with a manual catalog. The online catalog also provided the opportunity to utilize staff in acquisitions to input brief records for a transitory collection where titles remain for a short period of time. This transfer of activity to acquisitions required basic training in cataloging techniques and practices by cataloging staff. It has not been accomplished without some drawbacks, in particular the development of authority records for these brief records. However, continued review suggests certain operational improvements and provides a communication link beneficial to both units. In many regards the cataloging staff have acted as mentors or facilitators for those adjusting to and learning about the capabilities of the online catalog.

Other groups dealt with by cataloging personnel in the integrated online system environment include systems staff and vendors. With the card catalog, the cataloging staff maintained control. Now the local systems staff may need to run certain programs for overall system oeprations or take the system down for various reasons such as maintenance, tape load, or backup operations. This curbs access, limiting the control any one unit has over its need to use the system. Vendors control certain capabilities through software development or system maintenance of equipment. Vendor user groups help apply pressure for needed enhancements, but the vendor is still in control. Equipment maintenance is usually done at the convenience of the vendor. Our experience with this activity has been almost frustration free. These inconveniences are necessary and various backup measures are utilized to make the best of the limited time taken away from cataloging functions. However, the psychological impact of the loss of control can be intense in the early stages of implementation. While vendor user groups provide a forum to express needs and share experiences with others, an inhouse local users group may serve to enhance communications across unit functions and with systems staff. While our internal Aladdin Users Group has not had tremendous impact on our cataloging operations, it has provided a voice for staff working with the system on a daily basis. The group allows for expression of needs internally and provides the avenue for broadening perspectives of user needs and library services.

Future developments with potential impact include the provision of local standards for bibliographic record input, the elimination of the manual shelflist, and the implementation of online title authority control. Allowing staff other than trained catalogers to input bibliographic records can create a data base without integrity and make it difficult for the user to determine the holdings of a collection. Developing local standards which are adhered to by all staff responsible for the input of bibliographic records, whether from the cataloging area or not, provides a recognized format accepted by the library for all bibliographic record input. With an integrated system, both circulation and cataloging staffs have need to input records in order to maintain their service functions. With a manual system, to circulate items not cataloged for the public card catalog, all one had to do was to provide a separate circulation system for those items, and the card catalog was untouched. With an online itegrated catalog, a bibliographic record must be created in order to circulate uncataloged items. Therefore, staff not trained in cataloging principles, practices, and standards can create misrepresentation in the local bibliographic data base. A formal statement of what standards are used for bibliographic, item, and holdings data is a useful tool.

Another future development may be the elimination of the manual shelflist. This may make even more of an impact than adjusting to the online public access catalog. Our experience with the capabilities of VTLS to this point means that a special program would need to be written for displaying the holdings of a particular collection. This information would not display online. Also a call number search interfiles all call numbers beginning with the same basic call letters. If the library utilizes more than one classification system that has like call letters such as the LC classification system and the SUDOCS numbering system, these call numbers would interfile in display when a call number search is activated online. These factors have major repercussions for inventory control. Therefore, the elimination of the manual shelflist must be carefully studied before it is removed. There is no thought of its removal until all bibliographic records and holdings are online.

Title authority control has been promised for some time but is not yet available. At present, authority and cross reference cards are typed for series and uniform titles. Many series corrections which resulted from AACR2 have been left

untouched. Some series are still under various old forms as well as under AACR2 entries. Title authority should facilitate this clean-up. As retrospective conversion projects continue, the series conflicts become worse. Also, title searching in VTLS is based on a 5,2,2,1 search key. This means that if a spelling variation is outside of this structure, title added entries have not had to be created. In fact, to do so would generate duplicates on a title search. Titles based on authority records will require cross references. The implications of the implementation of title authority control are overwhelming.

A major adjustment to be made in an online integrated system environment is the acknowledgement that change is constant and often rapid. Future developments hold the promise of impact, the magnitude of which is not yet known. The changes we have absorbed since 1983, though many and often frustrating, have not been insurmountable. A staff eager for better service in a productive environment, open to any challenge, and well prepared, has lessened the impact of change.

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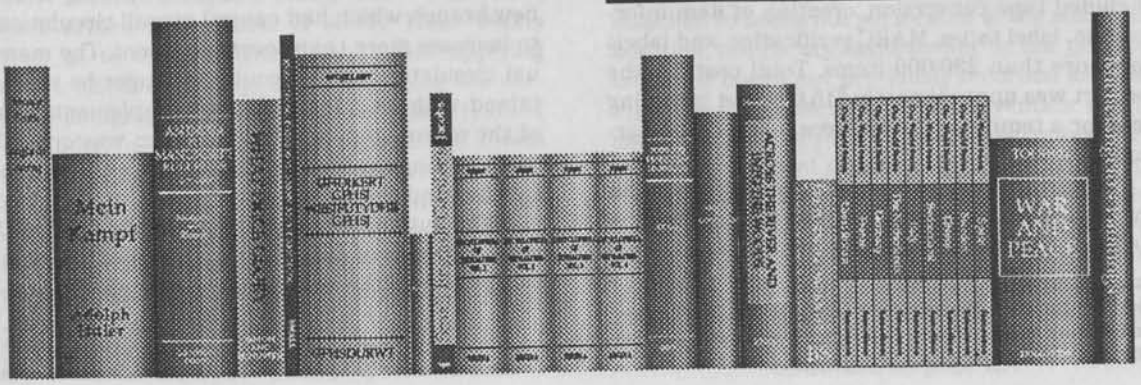
Instructions for the Preparation of Manuscripts for *North Carolina Libraries*

1. *North Carolina Libraries* seeks to publish articles, book reviews, and news of professional interest to librarians in North Carolina. Articles need not be of a scholarly nature, but they should address professional concerns of the library community in the state.
2. Manuscripts should be directed to Frances B. Bradburn, Editor, *North Carolina Libraries*, Joyner Library, East Carolina University, Greenville, N.C. 27858.
   N.C. 27604.
3. Manuscripts should be submitted in triplicate on plain white paper measuring 8½" x 11".
4. Manuscripts must be double-spaced (text, references, and footnotes). Manuscripts should be typed on sixty-space lines, twenty-five lines to a page. The beginnings of paragraphs should be indented eight spaces. Lengthy quotes should be avoided. When used, they should be indented on both margins.
5. The name, position, and professional address of the author should appear in the bottom left-hand corner of a separate title page.
6. Each page after the first should be numbered consecutively at the top right-hand corner and carry the author's last name at the upper left-hand corner.
7. Footnotes should appear at the end of the manuscript. The editors will refer to *The Chicago Manual of Style*, 13th edition. The basic forms for books and journals are as follows:
   Keyes Metcalf, *Planning Academic and Research Library Buildings*. (New York: McGraw, 1965), *416*.
   Susan K. Martin, "The Care and Feeding of the MARC Format," *American Libraries* 10 (September 1979): 498.
8. Photographs will be accepted for consideration but cannot be returned.
9. *North Carolina Libraries* is not copyrighted. Copyright rests with the author. Upon receipt, a manuscript will be acknowledged by the editor. Following review of a manuscript by at least two jurors, a decision will be communicated to the writer. A definite publication date cannot be given since any incoming manuscript will be added to a manuscript from which articles are selected for each issue.

Issue deadlines are February 10, May 10, August 10, and November 10.



POINT/

Smart Barcodes: A Wise Decision

Ricki Val Brown

In preparing to bring the Cumberland County Public Library & Information Center's circulation online, a number of decisions had to be made. The most important question was how to link the materials in the collection to their appropriate bibliographic record in the data base. The automation team reviewed the two options available: the use of pre-assigned, item-specific or "smart" barcodes; or the alternative, the use of generic, non-specific or "dumb" barcodes.

"Smart" barcodes are pre-assigned to bibliographic records during data base tape processing. The computer assigns a unique barcode to each item (copy or volume) in the collection and then links the appropriate bibliographic record to the specific barcode during label production. These smart barcode labels are generated in shelflist order for ease of application. The barcode, the item's call number and a brief bibliographic description are printed on the label for easy identification and match-up.

"Dumb" barcodes are simply labels that display a barcode and its corresponding number. These labels are applied to materials at random. While this eliminates the possibility of applying a barcode to the wrong book, it creates a highly labor-intensive process. After application, each dumb barcode must be manually linked at a terminal to a bibliographic record, a process that is both time-consuming and vulnerable to human error.

The creation of smart barcodes is more costly initially. Dumb barcodes cost approximately $30.00 per thousand. The CCPL&IC project included tape conversion, creation of item information, label tapes, MARC verification and labels for more than 230,000 items. Total cost for the project was approximately $15,000, not including fees for a temporary work force to apply the barcodes.

Smart barcodes also require more time in the initial planning stages, since parameters must be defined. Parameters indicate which MARC tags are to be indexed. Defining these parameters is a very tedious but crucial step because they will be used to supply the data in an item record from which the smart label is created. Any existing data base is examined very closely, and fields and subfields are "mapped" together for uniformity.

Problems can occur at this step when two or more data bases are being combined. CCPL&IC's main data base had been maintained by General Research Corporation. The North Carolina Foreign Language Center, housed at CCPL&IC's Headquarters Library, had a separate data base maintained by UTLAS. Parameters were used to incorporate and accommodate the differences in these two data bases.

Pre-existing problems in the data base will be discovered during the initial conversion process or while applying the labels if smart barcodes are used. Using dumb barcodes causes any problems or inconsistencies to be uncovered later, during the manual linking process.

The data base manipulation and the time needed for label production for smart barcodes requires patience while waiting for the selected vendor to process the information and produce the final product. CCPL&IC chose to use smart barcodes and estimated label production time at three months. It took six months.

The CCPL&IC decision to use smart barcodes was based on a number of reasons. First, the time required to link more than 230,000 items manually would have delayed the actual implementation of the automated system. CCPL&IC had recently opened a new headquarters facility and a new branch which had caused overall circulation to increase more than seventy percent. The manual circulation system could no longer be maintained without additional staff. Implementation of the automated circulation system was critical to upholding the high level of service expected by Cumberland County's library users.

The automated system acquired by CCPL&IC required input of nine separate pieces of information as part of the linking process for each item—

continued on page 182

Ricki Val Brown is Headquarters Librarian for the Cumberland County Public Library & Information Center, Fayetteville, NC.

COUNTERPOINT

Dumb Barcodes: The Smart Way to Go!

Harry Tuchmayer

Why barcode on the fly when you can pay to have someone do it for you? Surely, you should adopt the benefits of technology and have vendors supply smart labels. After all, why are you automating in the first place? Perhaps this technological innovation warrants a second look. When all is said and done, are smart labels the most advanced way of preparing a collection and library for an automated circulation system? What have you gained and, more importantly, what have you lost when you opt for the advanced way of dealing with your item conversion problem?

Rather than viewing the manual conversion process as the cheap (and archaic) alternative to item level conversion, let us regard it as the first step in preparing and adapting your organization for change. Barcoding on the fly provides two benefits that far outweigh any perceived advantage of smart labels. First, the process of adding an item record to each volume in your library provides a unique opportunity to train your staff in the use of the new system. Second, barcoding on the fly is the precursor to change. The process prepares your library for the opening up of the catalog to those qualified employees who can assist the technical services staff in providing patrons with a truly usable catalog.

Any method of adding barcodes to existing items takes time and staff. It is my contention that this time and staff could be put to best use learning how the system operates through the item-add process. In order to affix smart labels, most libraries designate teams of two barcoders, each armed with sheets of labels. These teams then go to their assigned stack areas applying smart labels to specific books matching the correct bibliographic record.[1] Why not take a team of two individuals, provide two terminals and sheets of dumb labels, and begin the process of item-add by barcoding those books just returned? In the same three-hour shift, these two employees will have barcoded almost as many books as their smart label counterparts, yet they will have had three hours each of hands-on computer training—three hours that they would have, or should have, invested later.[2] Thus the process of searching for the correct bibliographic record on a computer terminal and then applying a dumb barcode to that record is automation training.

Ironically, the process of applying smart barcodes is not really very automated. It relies on a manual method of searching the shelves, pulling the book, and visually verifying that the item in hand matches the preprinted barcode. If the method used to apply smart barcodes is compared to the one advocated here and tested on a public library fiction collection, you begin to see the advantages inherent in this less sophisticated method. In order to get the most mileage out of the smart label process, machine-readable records must contain exact and accurate holdings information. Otherwise, those titles for which your library has numerous copies (usually those titles most heavily in demand and most likely to be circulated) cannot be barcoded in this manner. Therefore, the library's most popular fiction titles will inevitably need to be barcoded manually, negating the advantage of the smart label.

If you barcode items while they "rest" comfortably on the shelf, you are probably spending too much time and money converting that portion of your inventory which does not need immediate barcoding and which may be appropriate for discarding. Barcoding materials after they are returned and/or as they are circulated also avoids the "sticky" problem of how to handle those pages and pages of barcodes waiting to be attached to books not yet located in the stacks. In addition, the library saves money by not printing labels for books not previously recorded as missing from the collection. If, as convention has it, eighty per cent of your circulation is represented by twenty per cent of your collection, it stands to reason that most of what needs to be barcoded immediately can be converted in this fashion. Focusing your barcoding efforts in this way converts that portion of your collection most likely to circulate and speeds up the time it takes to get

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Harry Tuchmayer is Headquarters Librarian for the New Hanover County Public Library in Wilmington, North Carolina.

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barcode number, owning agency, circulating agency, cost, classification, format, circulation indicator, fine indicator, and statistical category. This information was inserted during the data base conversion phase before the generation of the smart barcodes. The use of dumb barcodes would have involved pulling materials from the shelves, carrying them to a terminal, locating the appropriate bibliographic record, inputting the nine pieces of information specific to each item, and then returning the materials to the stacks for reshelving.

Since CCPL&IC's smart barcodes were generated in shelflist order, the barcodes were simply taken into the stack area and applied. Library staff, from the director on down, had been assigned areas to shelf-read prior to the barcoding to ensure that materials were in correct order so that the barcoding could progress as rapidly as possible. CCPL&IC employed a temporary work force of eight people to attach the barcodes. The barcoders worked for twelve weeks at a cost of $23,000.

The initial barcoding sweep through the collection at the system's seven locations was completed within eight weeks. The temporary work force spent the remaining four weeks barcoding materials as they were returned from circulation.

The Cumberland County system benefited in many ways by choosing to use smart barcodes. In actuality, an inventory was conducted during the barcoding process. When all materials had been labeled, the remaining smart barcodes, for which no matching materials could be found, indicated items that needed to be deleted from the data base. The data base then reflected the true holdings of the library. The automated system also generated a list of the deletions. Collection development officers used this list to replace and update missing titles and to supplement certain subject areas.

While planning and deciding the parameters to produce the smart barcodes, the library was given the opportunity to make universal changes in its data base. The existing data base has inconsistencies in the labeling of materials. These inconsistencies resulted from personnel changes over time, the changing needs of the community and changes in processing procedures. For example, at one time, the library's fiction collection had been divided by genre. Mysteries were classified "M" with the author's last name, science fiction was classified "SF" with the author's last name, westerns were classified "W" with the author's last name, etc. Some works were cuttered by the first letter of the author's last name, some by the first three letters and some by the entire last name.

At the time of automation, the fiction collection had been totally integrated into one alphabet, but the existing data base did not reflect this change. During the conversion process, CCPL&IC was able to make the necessary universal changes with simple parameters prior to barcode production. Had CCPL&IC chosen to use dumb barcodes, these changes would have had to have been done on an individual basis.

The decision to use smart barcodes was the best decision for this library. The decision was based on review of relevant literature and consultation with other libraries. Each library must examine its own needs and resources before making a decision. Given the resources at CCPL&IC, choosing smart barcodes was a smart decision.

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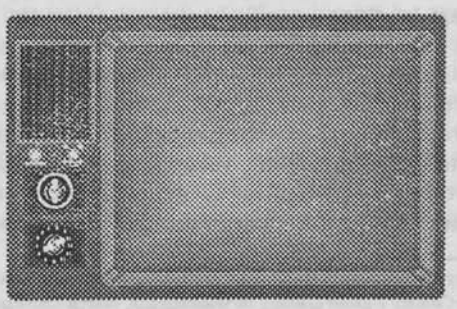

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your system online.

More importantly, it allows the staff immediate use of your system, providing them with hands-on experience in a working environment. While most libraries spend 1000-plus staff hours applying smart labels to books gathering dust on the shelf, your staff could be accumulating valuable computer time experimenting with the varied ways of locating books in your system. This hands-on experience offers an organization the opportunity to evaluate the possibilities of opening up the catalog to other qualified employees.

There is no question that automation exposes every flaw, error, and mistake in a catalog. The percentage of errors in your data base, no matter how small, are magnified as a result of automation. Help in some form or other is needed in correcting these flaws. As the barcoding project progresses, technical services personnel will see that other library employees could be trained and relied upon to assist in solving automation-related problems. Involved in this way, circulation and reference librarians will not only begin to appreciate the special concerns technical services personnel have for the "integrity" of the catalog, but they will also participate in improving the catalog—a process made possible by automation and accessibility to the catalog at any number of work stations.

So why should you apply dumb barcodes to your collection? They are cheaper. While the unit cost of any label is still somewhere in the neighborhood of .025 cents, there is an additional data base charge associated with smart labels. Granted, it remains to be seen if anyone can successfully use the argument that the money saved (usually some factor times the number of titles in your data base) by not producing smart labels can be converted into one more microcomputer for the library. We all know that it is, unfortunately, easier to say it costs a certain amount to make the system operable than it is to reduce costs in one area and convince the funding authorities to let you spend the savings on something else.

Clearly both processes require roughly the same number of actual hours in converting a collection, but there is no doubt that the decision to utilize smart labels means that you are committed to applying these labels in the shortest number of days possible. After all, you have to. Once the smart label is generated, your system thinks all titles are in the stacks and available for use. But does this decision render the system using smart labels any more accurate? No. First, your system is virtually useless throughout the entire time it takes to apply these labels, and only when you decide to deal with those items still checked out, missing, or for which no item/records were produced, can your system become fully operational. Applying dumb labels on the fly means that you have, for a limited but steadily increasing percentage of your collection, immediate and accurate information pertaining to its status. Only those titles for which no items/records yet exist are in limbo as to their current status—a situation certainly no worse than the one presented to us by using smart labels. And, in fact, because your staff is trained to recognize and handle these titles, any uncertainties concerning their status can be easily solved. Second, there is no guarantee that a team of "dumb" library staff and volunteers can apply smart labels to books any more accurately than teams of "smart" library staff can apply dumb labels to books. Seriously, errors happen, regardless of which method is employed. The anticipated one to three percent error rate seems consistent regardless of the barcoding method employed. The overall accuracy rate of either technique is roughly the same.[3]

Where does this leave us? It seems clear that either method of attaching barcodes to your collection will work and produce roughly the same results. So why apply dumb labels when you can pay to have smart labels? Because by using dumb labels, you produce a smart staff.

Barcoding on the Fly: A Step-by-Step Approach

Certain preconditions are assumed in this outline for barcoding on the fly. The first is that you already have established some mechanism for dealing with your patron conversion; second, you have purchased barcoding supplies; and, finally, your terminals are installed and your system is operational.

1. *Don't* go online to the public immediately. Allow yourselves as much time as you would if you had purchased smart labels. Failing this, give yourself about a month to become familiar with the equipment and permit barcoding without attendant circulation pressures.

2. Schedule teams of barcoders to begin barcoding during the slowest part of the public service day in roughly one and one-half hour shifts. Designate technical services staff as team leaders and pair them with other fulltime staff members (obviously, this will require some double-teaming).

3. Once the teams and schedules are arranged, set up a series of training sessions to explain the process: how to search the records,

how to recognize inconsistencies, and how to verify that the item in hand matches the bibliographic record.

4. Designate a trained and qualified individual or individuals, as the size of your library warrants, to deal with such problems as bibliographic errors, questions about editions, and unmatched entries. I strongly advise you to invest in a large quantity of stick-on notes to identify and pre-sort problems. That way, books with minor bibliographic typographical errors can be channeled to a copy cataloger for correction and barcoding, while the unmatched entries and more complicated bibliographic errors can be sent directly to the cataloger.

5. For the first three-week period, as books are returned and sorted onto trucks, roll them to the barcoding team to be converted before shelving. At the end of this period, assuming your director won't allow you to delay going online any longer, continue this process, but take these additional steps:

6. Schedule team leaders and other staff members who have shown an aptitude for barcoding to work at the circulation desk during peak service times. Dedicate these employees and terminals to nothing but barcoding books in order to assist staff before the checkout transaction begins. It is wise to devise some mechanism for pre-sorting materials into two stacks, barcoded and not, to hasten the barcoding process. Chances are, your patrons will be delayed anyway, as you update your registration files, so no significant additional delays will result.

7. Circulation staff should continue to barcode returns during this time. Since your circulation system will no doubt be operational, you should probably pre-sort returns so that only those items needing conversion are put aside.

8. Establish procedures and create forms to handle titles that are displayed in your system with no barcoded items attached. Assign responsibility for searching these item/records thoroughly before a decision is made to replace the material or delete the bibliographic record.

9. Within a year to eighteen months, generate a report to list all bibliographic entries for which no items exist. Use this report to begin the process of weeding and establish a collection redevelopment program for your library. You can also take this opportunity to barcode the remaining titles in your system; but remember, the fact that these books have not been barcoded has in no way hindered the use of your system.

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1. John Buschman, et al., "Smart Barcoding in a Small Academic Library," *Information Technologies and Libraries* 7 (September 1988): 263-69.

2. Helen H. Spalding, et al., "Behind Bars in the Library: Northwestern University's Bar Code Project," *Information Technology and Libraries* 6 (September 1987): 186.

3. Randall Library at the University of North Carolina-Wilmington (using smart labels) and the New Hanover County Public Library (using dumb labels) both experienced around a one percent error rate, while Northwestern University's error rate was lower than the one percent anticipated. *Ibid.*, 188.

4. This brief outline was prepared with the assistance of Marie Spencer, technical services librarian at the New Hanover County Public Library.

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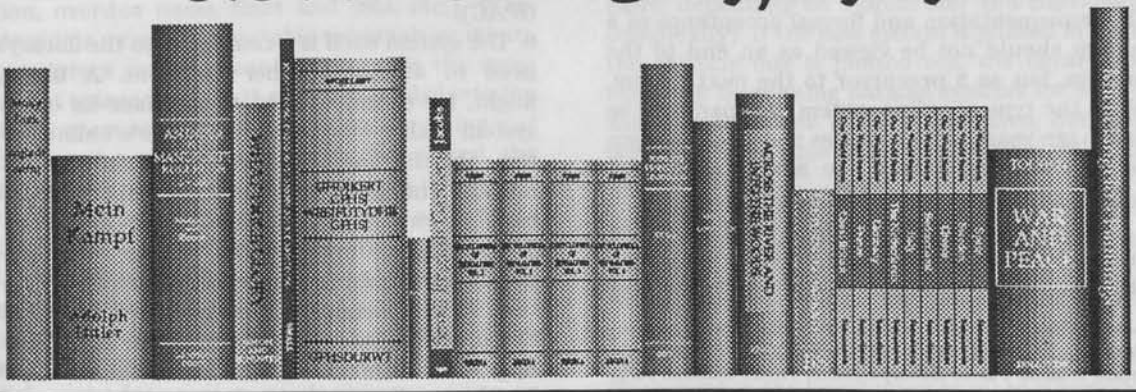

Moving to the Next Online System: Points to Consider

Marcia L. Kolb

The Prince William Public Library System, in northern Virginia, serves Prince William County and the cities of Manassas and Manassas Park. The library implemented its first integrated library system, the DataPhase ALIS II system, in 1981, with approximately forty terminals in two full-service libraries, for circulation, cataloging, and an online catalog function for staff. Between 1985 and 1987, six mini-libraries were opened. The lack of capacity to add terminals and degradation of response time made it apparent a new system would be needed. The OCLC LS/2000 system was selected and brought online in 1987, with fifty-three terminals for circulation, cataloging, and an online catalog for staff use. An additional thirty-five terminals were added in 1989 for the Online Public Access Catalog (OPAC). In November 1988, a bond referendum was passed, providing for construction of two regional libraries, to open by 1992. Plans call for building two additional full-service libraries, as well as renovation of some existing facilities before 1998. The LS/2000 system cannot be upgraded to handle projected system growth. Planning is currently underway to provide for the next integrated system. The new system will be implemented for circulation, cataloging, and OPAC initially, with optional capabilities for acquisitions, serials control, and materials booking. It will be required to support at least 250 terminals and projected annual circulation in excess of three million.

A library in the midst of planning and implementing its first online system is probably not spending a lot of time thinking about the next system, but it should certainly be aware that its dependence on automation will grow. Sooner or later that first system will no longer meet the needs of the library and an upgrade of that system or an entirely new system will become a necessity. The knowledge that there will eventually be a subsequent system should be kept in mind as decisions about any system are made. The implementation and formal acceptance of a system should not be viewed as an end to the process, but as a precursor to the next system. While the typical online system life span may be five to ten years, some libraries may need to begin actively working toward the next system even before the current one is fully operational.

Many libraries will be involved with one or more system upgrades before they are faced with obtaining a new system. Typically, a library may add or change disk drives, add ports for additional terminals or upgrade the operating system or CPU. When a library upgrades its existing online system, the basic functions will usually stay the same and staff may feel fairly confident they will not be required to learn an entirely new set of procedures for working with the system.

At some point, however, even a system upgrade will not provide or restore adequate performance. The following circumstances usually require a library to obtain a new system:

1. System performance has never met contractual specifications and the vendor is not able to provide such performance.
2. Due to growth of the library system or an increase in the number of transactions, system performance no longer meets the library's needs and the vendor or other appropriate personnel cannot upgrade the system to support that growth.
3. The vendor, due to financial constraints or executive decision, will no longer support the current system.
4. Existing system functions, due to hardware or software constraints, have become static ones which can no longer be enhanced, while the library's needs continue to require improvements to such functions.
5. The current system provides a limited number of functions (such as circulation control only) and the library needs to add other functions (such as an online public access catalog, or OPAC).
6. The system itself is a constraint to the library's need to automate other functions. A library might, for example, need to interface its online system with a book or serial jobber's online system, yet the interface cannot be accomplished because the library's system does not have the capacity for such an interface.
7. The cost to upgrade the system would approach or exceed the cost to purchase a new system. While a major upgrade may cost up to half the original system purchase price, if such an upgrade is estimated to cost $8,000 to $9,000 per terminal, a new system would probably be more

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cost effective.

While the procurement process for the new system will probably be somewhat the same as for the initial system, a number of factors which were not issues with the original implementation must be considered with the new system.

Equipment Issues

Will the new computer be housed at the same site as the previous one? If so, that site may require an upgrade to the air-conditioning system or additional specialized electrical outlets in order to be adequate for the new equipment. The logistics of detaching terminals from the existing CPU, moving old hardware out and new hardware in, and connecting all peripherals, will not be insignificant. In order to decrease downtime required for the move, the library might wish to have the new hardware tested and the data base loaded at an external site.

Will any existing equipment be used on the new system? If existing terminals, scanners, printers or telecommunications modems or multiplexers are to be used, each item must be thoroughly tested to ensure total compatibility. Existing data cables may require different pin configurations or connectors (male vs. female or vice versa).

Will the new system require the same supplies? The new system may, for example, require data base copy from disk to tape, rather than disk to disk. Additional storage space for such supplies may also be required.

Data Base Conversion Issues

What information will be transferred? Almost certainly the bibliographic and item records will be transferred, and, for most institutions, existing patron information will also be loaded into the new system. The library may also wish to transfer current transactions (items in circulation, overdue items, fines and fees, etc.). If so, leased or purchased portable terminals or microcomputers may be required to store the most recent transactions so they can be loaded into the new system as closely as possible to "coming up." If current transactions are not transferred, the library will need to consider the status to be given to existing items (some vendors show all items as "available" at system start-up) and to work with the vendor to develop alternatives if that status is not acceptable.

How will the data base be transferred? The new data base may be created by using removable disk packs, by a system-produced tape utility, or by tapes from an external source, such as OCLC. Producing tapes from the existing system may have a significant impact on current system use, since it may slow response time or require the system to be unavailable for patron and/or staff use during the process. The conversion of data from existing system format to new system format may require extensive "massaging" on the part of the vendor, especially if the data is being converted from non-MARC to MARC format or if the library has requested significant data base "clean-up" (such as correcting inconsistent call numbers) as part of the process. Conversion exception reports may require much staff time. All such factors may increase the time required for the data base conversion.

Will new system records contain additional information? The library may wish to add information to patron records, for example, and will need to determine whether the new information will be added manually or in some automated manner. There may be changes to the way in which certain MARC tags are used or previously unused tags may now be designated for use.

Some libraries may need to begin actively working toward the next system even before the current one is fully operational.

Implementation Issues

Will the new system be phased in or will the changeover be done as a single step? If the new system is implemented all at once, the staff will need to be "experts" on the existing system on Sunday night and "experts" on the new system on Monday morning (although actual downtime may range from a few hours to a number of weeks or more, depending on system size and conversion complexity). If the new system is phased in while the existing one is phased out, the library will obviously be running parallel systems for a time. Some transactions will be duplicated, but staff will have more time to become comfortable with the new system.

Will there be additional functions available on the new system? The library may wish to implement the new system with all functions, or to implement only those functions present on the previous system, and add other functions at a later time. It is certainly easier on the staff to implement in the latter manner, since it provides

time for them to become comfortable using the new system for familiar functions before they are required to master procedures for entirely new functions.

The implementation and formal acceptance of a system should not be viewed as an end to the process, but as a precursor to the next system.

Staff Issues

How will the new system affect the staff? Just as with the original implementation, staff may need to be assured the new system will not replace them. There may be resistance to the change and there will certainly be concern as to how it will affect day-to-day operations, since they will be moving from a system which is fairly stable and at least familiar, to a system which is new and unknown and may require some "fine-tuning" during the first few days or weeks of use. It is still critical to keep staff informed and involved as much as possible during planning and transition. Let them know who is on the automation committee and encourage them to ask questions and to offer suggestions. Keep them aware of the current status of the project via regular updates from the committee and by any other means possible. While the staff will be more computer literate and sophisticated about automation, training will continue to have a high priority, and both vendor-supplied and in-house training should be geared toward helping staff feel comfortable with the new system before they are required to use it for the public. It may even be possible to offer staff a chance to use the system in ways they have not previously used it, such as allowing circulation or technical services staff help to train patrons to use the online public access catalog (OPAC).

Won't the new system solve all our problems? Online system vendors are moving toward making systems more modular and more flexible to meet the needs of a wide variety of user libraries, so the systems can be extremely complex. Each system has specific hardware and software constraints and they all work differently. There will be unforeseeable issues which arise, or functions which work differently in reality from the way they were explained or perceived as working. While obtaining a new system can be an opportunity to overcome weaknesses of the current system, staff should not assume the new system will solve all problems. A "perfect" system simply does not exist. It is an interesting exercise to have staff write down all they like and dislike about the existing system before they discontinue using it. Have them set aside those lists, then reread them six months to a year after implementation of the new system. They may be quite surprised at their memories of how good (or bad) the "old" one was.

Public Issues

What about the public? Just as with staff, it is vital to keep the public aware and involved, especially if they have been using the system as end users on an OPAC and/or will be doing so with the new system. They, too, may have some resistance to the idea of a change. Keeping them involved in the process can help allay their fears about learning to use the new system and give them more of an understanding about changes with which the staff will be dealing.

Policy and Procedural Issues

Will the new system affect policy? Identify any current library policies which might be affected by the new system, or ones which staff have wanted or needed to have changed in the past, but were unable to change due to system constraints. The desired changes may now be possible.

Which procedures will change? Don't assume functions on the new system will operate the same way they did with the previous system, even though they may have the same name. System prompts will change, as will sign-on and sign-off procedures. There may be changes in the way bibliographic, item and patron records are entered, edited, or deleted. The new system may have new terminology: "checkin" and "checkout" may now be "discharge" and "charge;" "reserves" may now be "holds." It may be helpful to provide staff (and patrons) with a cross-reference glossary of the old and new terms. Changes in functions may impact on the information which is available on reports, or the manner in which that information is organized. The names of available reports may change and even reports with the same or similar names may not provide the same information as before. New terminals may have different keyboards; the same key on two different keyboards may not provide the same result. Function key set-ups may not be the same for the new system. New scanners may not work the same as the old ones in reading barcode or OCR labels. Notice formats may change, requiring changes in printed forms used, postage costs, and possibly in produc-

tion schedules.

"Behind the Scenes" Issues

Will access to parameters/profile information change? Computer operations staff may be responsible for new or different functions on the new system. Their procedures will be new and may, for a time, require slightly more time for problem resolution.

How will offline activities differ? Data base copying and the running of batch programs or other required offline activities (checking the integrity of the data base, running transaction purges, or monitoring available space capabilities) may be required at different frequencies from before and may take more or less time than on the previous system. These activities may impact differently on public service hours and on staffing patterns.

This article contains only a sample of the factors involved in moving from one online system to another, and is certainly not a complete list. The issues and problems faced by any one library may vary greatly from those faced by other libraries, with one exception: they must all be aware they will at some point go through the process again ...and again.

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Research in North Carolina Librarianships

Jinnie Y. Davis, Editor

This column marks a new regular feature of *North Carolina Libraries:* a column devoted to research in and about North Carolina libraries and librarianship. The idea came out of a retreat at which members of the *NCL* editorial board brainstormed about ways to improve the journal. One solution is to focus attention on library research by providing a forum for publicity about library-related research that is being performed by our colleagues in the state or that deals with libraries and librarianship in the state.

On a broader scale, it is also an attempt to contribute to the advancement of our profession. In a recent study, McClure and Bishop report a sense of guarded optimism about the future status of research in library and information science. Among their recommendations for ensuring improvement are increasing the visibility of successful and important research, creating reward structures to recognize high-quality research, strengthening commitment to research in state professional associations, and increasing communication between researchers and practitioners by including regular research columns in journals.[1] Although the *NCL* editorial board made its own suggestions for changes before this article appeared, the "Library Research Column" ties in neatly with McClure and Bishop's recommendations.

As column editor, I plan to approach this task in a variety of ways. Issues may, for example, cover research by professionals at a single institution, or review master's papers at a library school, or examine research on a single topic related to North Carolina librarianship. Reflecting the membership of NCLA, the scope of the column will include all types of librarianship.

I also welcome help from our readers. If any of you are aware of library research that merits attention in this column, or if you would like to contribute to this column, please write or call me at: North Carolina State University Libraries, Box 7111, Raleigh, NC 27695-7111 (tel.: 919-737-3659). Thanks.

Jinnie Y. Davis is Assistant to the Director for Planning & Development, North Carolina State University Libraries, Raleigh.

Reference

1. Charles R. McClure and Ann Bishop. "The Status of Research in Library/Information Science: Guarded Optimism." *College & Research Libraries* 50 (March 1989): 127-43.

North Carolina Books

Robert Anthony, Compiler

James A. Crutchfield, ed. ***The North Carolina Almanac and Book of Facts, 1989-1990.*** Nashville, Tenn.: Rutledge Hill Press, 1988. 388 pp. $10.95. ISBN 0-934395-90-X (paper).

This is the second edition of the ***North Carolina Almanac;*** the first was published in 1986. The preface to the current edition states that the publisher intends to update the work regularly. Unfortunately, a comparison between the 1986 and 1988 editions indicates that the current revision is haphazard and incomplete.

The book is divided into ninety-six sections which are arranged alphabetically, "Agriculture" through "Zip Codes." While this format facilitates use, it may be disconcerting to some since the sections run together, separated by very little white space. Page headers are inconsistent, sometimes indicating the first new section on a page, sometimes not. There is a fifty-page index at the front which is fairly detailed, if not always accurate. For example, turning to the pages cited for "Tourist Attractions" lands the reader in the middle of the section on museums.

The contents of the first and second editions are much the same, although some improvements have been made. Sections on individual sports (baseball, basketball, football, and golf, to be precise) have been consolidated under the heading "Sports" in the current edition. The section "County Government Expenditures" was entitled "State Expenditures" in the earlier edition.

Several sections, however, show no evidence of revision. For example, the numbers of churches and membership figures are given for four religious denominations headquartered in North Carolina. These 1982 figures are unchanged from the 1986 edition. Another section unaltered since the first edition is the state chronology, found in the "History" section. In both editions, the listing ends with 1986. Apparently, nothing noteworthy has occurred in the Tar Heel state since that year. Terry Sanford is the subject of yet another peculiar lapse in the ***Almanac's*** revision. While acknowledged as a U.S. Senator on page 336, his biography in the "Governors" section on page 173 ends with his appointment as president of Duke University in 1969.

One of the strengths of the ***North Carolina Almanac*** is its lists. It is, for example, a quick and easy place to find a list of Miss North Carolinas (through 1988). Another useful list is of North Carolina "Firsts", despite the fact that there are a number of sources which disagree with the statement that Bath was the first community in America to open a public library. A notable omission to the "Festivals" listing is the National Balloon Rally, held in Statesville each year. One list which seems particularly odd is the roster of famous North Carolinians. Don't look for Thomas Wolfe. He's not listed, but Alexander Key is! Also conspicuously absent are sports figures such as Michael Jordan.

Because it is inexpensive, is easy to use, and will answer a variety of questions which pop up regularly on homework assignments, the ***North Carolina Almanac and Book of Facts, 1989-1990,*** is a safe purchase for most school and public libraries. However, librarians should not expect it to live up to its claim to be "the most valuable, all-around source of information about North Carolina available."

Anna Donnally, Asheville-Buncombe Library System

Reynolds Price. ***Clear Pictures: First Loves, First Guides.*** New York: Atheneum, 1989. 304 pp. $19.95. ISBN 0-689-12075-3.

All families have treasuries of personal tales which are a part of the ties that bind the tribe together. The Price clan is no exception and in ***Clear Pictures: First Loves, First Guides,*** Reynolds Price offers the reader an intimate account of his boyhood and emerging manhood during the years 1933-1954. Price, a native of North Carolina and currently a professor of English at Duke University, ushers the reader along on a photographic journey through his mind and memory, occasionally (and with some regret) veering off into social and cultural issues. The true power in the book, and its greatest poignancy, resides in Price's ability to recall the comfortable days he spent as a well-loved child in the small, safe North

Carolina towns of Macon, Asheboro, Roxboro, and Warrenton. These towns scroll across the screen, for by the time Reynolds was fourteen years old, his family had moved thirteen times.

This book, as the title indicates, is a collection of Price family photographs accompanied by telling captions that deftly place the images within the landscape of the author's mind as well as the historical moment. Price's reservoir of memory is deep, and as he suggests in the foreword, is made richer by his experiences with hypnosis as he sought treatment for physical pain caused by a congenital spinal tumor discovered at the age of fifty-one.

Price admits that his memoir is an expression of a happy childhood, not especially dashing or dramatic. The process of looking backward is cathartic, and in the first and last chapters of the book the most painful and powerful moments occur as the relationship between Reynolds and his parents, William and Elizabeth Price, is explored. The highlight of the book may well be the simplest of all memories—a car ride out for ice cream with his parents on a summer night. In this event Price recalls receiving a major life revelation at the age of three: that he was part of a family triangle and was "married" to his parents. This complex realization triggers Reynold's lifelong paradoxical perception that he, as a child, is obligated to be a caregiver for his fragile parents who inevitably will grow too old to dream.

The most significant and intense figure in Price's life was his father Will, a charming yet enigmatic man who privately fought the demons of drink long before Alcoholics Anonymous had an identity in the South. Will's alcoholism was a family secret of sorts, but a fact not kept from Reynolds. There are gripping descriptions of Reynold's difficult and dangerous birth and of seizures suffered as a youngster which frightened Will Price so deeply that he pledged never to drink again in hopes that Reynolds might be given permission to live. This bargain struck by Will affected Reynolds for years and made him silently fearful that his father's illness might surface again at any moment. Thus, Reynold's contented childhood was marked with a real sense of the ease and randomness with which tragedy may strike.

In the last chapter, Will's death comes and with it a moving farewell from Reynolds, who twenty-one and officially claiming manhood, begins to understand from his father the strength and courage required to die. This piercing lesson is a remarkable gift from a father to a son who only thirty years later will face his own mortality in the form of paraplegia and an ongoing battle with cancer. As Price writes: "So every backward glance reminded me firmly that the first and ultimate property of time, in human life anyhow, is onward motion—however sidling, wandering or crawling belly-down." It is this inexorable motion that sweeps the reader along through Price's memoir, watching and waiting for the boy to become a man, the man to become a writer. In the midst of this journey of loyalty and graceful remembrance, a faint yet mournful cry is heard as the author continues to seek clarity in a world where the lightness of being is at times overshadowed by unbearable trials of pain.

Melissa Cain, University of North Carolina at Chapel Hill

Mary D. Beaty. ***A History of Davidson College.*** Davidson: Briarpatch Press (Box 148, 28036), 1988. 433 pp. $35.00.

Stimulated by the publication of Bernard Bailyn's provocative essay, *Education in the Forming of American Society,* and increasingly influenced by social science techniques, historians in the last three decades have transformed the writing of the history of American higher education. Rejecting as their standard the narrative house history centered around presidential administrations, they have increasingly favored more avowedly theoretical approaches which place their subject matter in the context of the broader society. Nevertheless, traditional style chronicles continue to be written, and too many of them continue to frustrate readers who wish to understand fully the history of institutions so treated.

Such is the case with Mary D. Beaty's ***A History of Davidson College.*** The daughter of a long-time Davidson faculty member and the former head of the classics department at the University of Richmond, Beaty is now assistant director of the Davidson College Library. She is also the author of *Davidson: A History of the Town from 1835 until 1937* and thus would seem well prepared to write the first comprehensive history in sixty-five years of one of the South's leading liberal arts colleges.

Although Beaty begins promisingly by identifying 1835, the year of the college's organization by the Concord Presbytery, as "squarely in the midst of the great era of denominational college founding," she fails to maintain the promise of providing a contextual background in a consistent and meaningful manner. She does, of course, periodically describe the relationship between the college and its governing presbyteries, but her

almost complete silence on related educational developments in North Carolina is especially troubling. For example, she fails to mention that Baptists also were dissatisfied with the secular education provided by the state university at Chapel Hill and opened Wake Forest Instititute in 1834. Both Davidson and Wake Forest operated initially on the manual labor scheme, and both faced opposition in the legislature to their being granted charters because of their denominational control. References to such similarities, and to differences when appropriate, would have required little additional commentary and would have helped the reader to discern to what extent Davidson's development was unique or typical at any particular time.

Beaty has, however, done a thorough job documenting the internal history of the college, and she has done so by skillfully blending the personal and the institutional. Possessing a lively writing style, she is at her best when describing the daily lives of students and faculty.

This book will have its greatest appeal to those associated in some way with Davidson College, but it should be acquired by most college, university, and public libraries in the state.

Robin Brabham, University of North Carolina at Charlotte

Kaye Gibbons. ***A Virtuous Woman.*** Chapel Hill: Algonquin Books of Chapel Hill, 1989. 158 pp. $13.95. ISBN 0-945575-09-2.

"And after it all, after it's all said and done, I'll still have to say, Bless you, Ruby. You were a fine partner, and I will miss you." Thus Blinking Jack Ernest Stokes begins to tell the story of his marriage to Ruby Pitt Woodrow Stokes who has died of lung cancer only four months before. And in alternating chapters of Kaye Gibbons' second novel, ***A Virtuous Woman,*** Ruby does the same, describing the childhood and early adult years that led to this her second marriage.

Born to a prosperous farming couple forty-five years before, Ruby confounds her loving family by running away to marry the first man who ever paid attention to her—mean, abusive, womanizing migrant worker John Woodrow—because "...I just didn't have enough sense to say no, plain and simple." Even though she realizes her mistake almost as soon as they drive out of her parent's driveway, she stoically endures her fate until the day Blinking Jack Stokes comes to tell her that Woodrow has been killed. Freely admitting that he wants to be the one to tell her the awful news, Blinking Jack is determined to be there, strong and solid for her grief, because he has already decided that he will marry her in spite of their age differences. She is only twenty and he forty-five.

And marry they do, living the next twenty-five years in love and quiet happiness, Jack a tenant farmer on his friend Burr's land and Ruby his friend, lover, housekeeper, and cook. Together they bring peace and joy to each other's existence, Ruby tolerating Jack's drinking, Jack enduring Ruby's smoking, both with quiet good humor. Theirs is the calm acceptance of each other's foibles that only true love can manage. Their only sadness is that they can have no children, a fact that Ruby counteracts by loving and protecting Burr's and Tiny Fran's daughter June.

A Virtuous Woman is a quiet book, much like Jack and Ruby's marriage—quiet, but deep, peaceful, and surprising in its understated and occasional violence and pain. It is Gibbons' complete mastery of the southern cadence, her consummate storytelling, her ability to encapsulate an entire thought or experience into a single sentence that enables the reader to become a part of this marriage, grieve at its loss, and totally understand Ruby when she says, "The quiet kind of love is better than the other, lasted longer, been better to us." Much like their marriage, this quiet book will linger with the reader, offering a smile and the simple affirmation of what love and marriage can be.

Frances Bryant Bradburn, East Carolina University

Warren Moore. ***Mountain Voices: A Legacy of the Blue Ridge and Great Smokies.*** Chester, Conn.: Globe Pequot Press, 1988. 276 pp. $29.95. ISBN 0-87106-671-8.

For six years, Warren Moore taped and photographed western North Carolinians to put together ***Mountain Voices,*** a book designed to be a "true picture of the area as they see it." Born in North Carolina, Moore spent her younger years as a "summer person" visiting in the mountains. She developed her book idea while living and teaching in New York City. With the zeal of a transplant reclaiming native soil, Moore used her camera and tape recorder "to put elements of Appalachian culture back into their proper perspective."

Setting the record straight is a familiar motive among amateur oral historians, who believe in the tape recorder's power to allow "real voices" of unheard people to speak. Like the camera, the recorder cannot lie. Yet, oral histories

are shaped on both sides of the microphone, and the resulting "truth" is the product of choices on each side.

To Moore's credit, her choice of voices is broader than most writers who attempt to describe mountain life. The people of these pages are farmers and town folk, rich, poor, influential, extroverts and homebodies, professors, politicians, hunters and truck drivers, attorneys, bankers and beekeepers, mill workers, homemakers and teachers. Moore sorts their reflections into thematic chapters and specific topics—mountain terrain, the people and their history, mountain living, the Cherokee, culture and society, progress and problems. The interview excerpts bring together different people's perspectives on similar subjects—rivers and floods, subsistence farming, politics, the Depression, school days, marriage, the country store, community entertainment, living with change, and lasting values.

Moore selected and arranged the voices, but she does not mediate this oral history in obvious ways (no fussy footnotes, no meticulously dated interviews, no deep background from research in written sources, no name index to all locations for a given person's comments). The book must also be weighed for what it leaves out, as well as what it includes. Where, in this southern book, is the subject of race relations? We have the Cherokee chapter (a kind of editorial reservation). Where are the voices of black Appalachians? We have Clifford and Annie Casey of McDowell County. But what of the many voices in Asheville, descendants of black farmers and railroad workers who moved to town, black entrepreneurs, members of the diverse black churches, descendants of laborers and domestic workers who helped build and run Biltmore for George Vanderbilt?

Moore does not skimp on other material. The crowded print threatens to run right off the bottom edge of many pages. Her photographs lighten the dense text, however, without moving the book into the coffee-table class. In black and white and in color, they parallel the text but are unidentified. Captions or a photo index would have been appropriate.

Moore's introductions to the chapters display her genuine respect and affection for the people she interviewed. Her book suffers, however, from the enthusiasm and the diffidence that can be occupational hazards for oral historians. The power, beauty, and individuality of voices captured on tape tempt the interviewer to recede into the background, convinced the voices "speak for themselves." But there are no typefaces for intonation, cadence, accent, or the emotional modulation between loud and soft speech. While the page forever echoes unique voices to the interviewer, we as readers are content-bound, occasionally moved by a felicitous phrase, which sounds in *our* ears in our *own* reading voices. As a result, this book can be boring when taken in long stretches. It's better when taken in brief, leisurely snatches.

Years of resentment against the negative stereotype of Appalachians as "poor national orphans who needed more help than other people" (Jan Davidson, p. 240) has fueled a publishing industry intent on defining "the true" Appalachian culture, character, and spirit. But the substitution of self-affirming, positive stereotypes for negative ones cannot yield a realistic picture of people's lives in the mountains. "Now I think we're in a new phase where we place our cultural life somewhat on a pedestal" (Jan Davidson, p. 241).

Moore's book, despite her array of voices, takes the pedestal approach, for seemingly noble reasons—her love for the people she met and interviewed. This is not a book, however, for those who are passionately devoted to *and* intellectually objective about the mountains, although it contains the voices of some who are both.

Della Coulter, Elbert Ivey Public Library, Hickory

Paxton Davis. ***Being a Boy.*** Winston-Salem: John F. Blair, Publisher, 1988. 253 pp. $16.95. ISBN 0-89587-065-7.

"Boyhood is like an orgy, a lot to do and a lot of people to do it with...."

Winston-Salem native Paxton Davis's childhood memoir, ***Being a Boy,*** is a sentimental journey back to "a nice place, during nice times, with nice parents and nice friends." In this autobiography, Davis recounts the first fourteen years of his life growing up in the Buena Vista neighborhood of Winston-Salem during the 1920s and 1930s. Davis's parents moved to the Forsyth County seat during the 1920s, where his father served as a department head for Reynolds Tobacco Company.

After a stint with the U.S. Army during World War II, Davis served as a reporter with the *Winston-Salem Journal*, *Richmond Times Dispatch*, and the *Twin City Sentinel*, and later as a journalism professor and department chair at Washington and Lee University. Currently, Davis writes a weekly column for the *Roanoke Times and World-News*. In addition to his childhood memoir, he has written short stories, poetry, reviews, articles, and several other books.

Being a Boy grew out of a column Davis wrote about the Ravens, a neighborhood football team from his childhood. Their rivalry with the Carolina Cubs featured the likes of Sanford Martin, the Speas brothers, big Grady Southern, and the diminutive Willie Shore, "who could outrun anyone alive." So well received was the feature that it was reprinted in *The New York Times.* That reception, coupled with Davis's desire to provide his own children with a portrait of the grandparents they had never known, prompted him to write this memoir.

The book centers on the exploits of Davis and his neighborhood friends, "a group of squirrelly boys." In the era before television, *Sports Illustrated,* and Pop Warner football, sports consisted of the neighborhood lot and an imaginative interpretation of the rules. Baseball bats were kept together by black electrical tape, a consequence of the times, while a football game could end abruptly when the ball's inner bladder exploded. As forthright, law-abiding citizens, Davis and his friends created the Mekechum Detective Agency to help the FBI apprehend John Dillinger.

Davis's recollections are not merely the recitations of the antics of childhood chums. With humor and candor, the author recalls the dances at the all-female Salem Academy, memorizing catechism in the Presbyterian Church, and his Boy Scout troop whose ideals centered more on good times than the acquisition of merit badges. Relived are Saturday matinees featuring cowboy heroes, the family gathered around the radio listening to Lowell Thomas and "Amos 'n Andy," and summers spent with grandparents and at camp.

This portrait, though filled with anecdotes and humor, is honest to the era. While the upper middle-class position of his family and neighborhood friends allowed them to live in relative comfort during the Depression, he recounts vividly the starkness of visits to friends with jobless fathers and homes bare of furniture. And as in any other southern community, segregation ruled in Winston-Salem.

The memoir ends in 1939 as Davis and his friends return from the New York World's Fair. During a stop in Washington, D.C., newspaper headlines heralded Hitler's invasion of Poland. With that, Davis recounts his group's inability to grasp the consequences of the news. "Nor could we guess the sweet, safe, innocent America of our birth and boyhood would vanish, forever."

This book is highly recommended for academic, public, and school libraries. Davis has written a book full of wit, charm, and humor. ***Being a Boy*** allows older generations the ability to relive this time in their lives, while historians, sociologists, and other scholars can gain a new perspective on life in a southern city during the Depression.

Randy Penninger, University of North Carolina at Charlotte

Theda Perdue. ***The Cherokee.*** New York: Chelsea House Publishers, 1989. 111 pp. $16.95 ISBN 1-55546-695-8.

Change and adaptability are part of the Cherokee heritage. The author presents a history of these Native Americans and the social, cultural, and religious changes they have faced over the past several hundred years.

Western North Carolina was the heart of the Cherokee homeland. The arrival of the first Europeans in 1540 brought rapid and dramatic changes to all areas of Cherokee life. The Seven Years' War and the American Revolution brought political change for the Cherokees. They now needed to delegate political power to tribal spokesmen in order to gain security for themselves and their homeland.

After the American Revolution, the Cherokees suffered severe economic depression and had to relinquish large tracts of territory to the United States Government. For the first time, these Native Americans began to accumulate individual property. They also reorganized their method of governing, wrote down their laws, created a police force, and developed a central government. The United States wanted to "civilize" the Cherokee; the Cherokee hoped that by integrating into the American way of life they could peacefully live within the United States.

Since the United States' government did not recognize that Native Americans had a legitimate claim to their own land because the latter were not Christians, disputes arose over Cherokee land. Eventually, in order to expand its own territory, the government forced the tribe to migrate to western territories—now Oklahoma. The forced march became known as "The Trail of Tears" because of the suffering and hardships endured by the Cherokees along the way. Only forty-nine Cherokee families remained in North Carolina.

World War I and World War II broadened the world for some Cherokees. Many served in the armed forces and went on to receive a college education through the G.I. Bill; some moved to the city.

This book, written for young adults, outlines the relationships between the United States and

the Cherokee, and the ways in which the Cherokees, throughout their history, have answered the question, "Can we survive in modern society?" It is written by Theda Perdue, a professor of history at the University of Kentucky. She is the author of several books and articles on Native Americans, including *Native Carolinians: The Indians of North Carolina.*

The Cherokee, a title in the series "Indians of North America," is a very readable book. It includes a bibliography, glossary, index and illustrations. It is highly recommended for middle school, high school, and public libraries.

Sarah Stubbs, Laurel Hill Primary School

Charles Harry Whedbee. ***Blackbeard's Cup and Stories of the Outer Banks.*** Winston-Salem: John F. Blair, Publisher, 1989. 175 pp. $9.95. ISBN 0-89587-070-3.

After publishing four earlier collections of Outer Banks tales and legends, Judge Charles Harry Whedbee has produced yet another volume of stories from the North Carolina islands. ***Blackbeard's Cup and Stories of the Outer Banks*** contains sixteen stories culled from the rich Banker oral tradition. A retired district court judge who still maintains a private Greenville, North Carolina, law practice, Whedbee has become an authority on coastal folklore. He has spent a lifetime of summers at his family's Nags Head cottage, collecting and preserving this oral tradition.

Among the most interesting stories in this volume is one which Whedbee recounts from personal experience. As a young law student in the 1930s, Whedbee participated in a secret ceremony on Ocracoke Island. He has waited fifty years before telling how he came to hold and drink from the skull of the pirate Blackbeard.

One clear August evening, Whedbee and a fellow student knocked at the door of a large white house known as Blackbeard's Castle, stammered the password "Death to Spotswood," and joined a group of men gathered around a large table. After swearing an oath of secrecy, the two young men particpated in an endless round of ritual toasts. As Whedbee and his friend soon learned, the unusually shaped cup that passed from hand to hand was nothing less than the silver-plated skull of Edward Teach, the infamous pirate Blackbeard!

Throughout the long evening, the students were treated to many tales of the pirate, but never did they hear the surnames of any of those present. Eventually, and long before the ceremony seemed likely to end, Whedbee and his companion made their escape. For fifty years, Judge Whedbee has tried to trace the cup from which he drank that night. To that end, he now offers a thousand-dollar reward to the owner of the cup in exchange for the opportunity to examine it for a few hours.

Judge Whedbee's tales also include a Chowan County doctor's lifelong hunt for buried treasure, complete with a secret map; a magic lute which revealed the murder of one sister by another, for the love of a suitor; and the origin of the Sea Angel, a legendary creature which Whedbee himself claims to have seen.

Charles Harry Whedbee's earlier volumes are *Legends of the Outer Banks* (1966), *The Flaming Ship of Ocracoke* (1971), *Outer Banks Mysteries* (1978), and *Outer Banks Tales to Remember* (1985). His fifth collection, ***Blackbeard's Cup and Stories of the Outer Banks,*** certainly should be included in any library or special collection of North Caroliniana. Academic, public and school librarians will find this book to be popular with their readers as well.

Kathryn L. Bridges,
Charles A. Cannon Memorial Library, Concord

Other Publications of Interest

In ***Biographical Dictionary of Famous Tar Heels,*** editor Richard Cooper provides brief information on slightly more than two hundred North Carolinians, some living but most deceased. Sketches are short, many no more than a couple of lines, although several pages are allowed for some of the better-known personalities. Intended for schoolchildren and general readers seeking basic identifications, the sketches cover Tar Heels of accomplishment in a wide variety of occupations and activities, such as art and music, business, writing and journalism, medicine, entertainment, and government. The book may be ordered from Creative Productions, Box 30515, Raleigh, N.C. 27612; ISBN 0-89136-088-3; $16.95; hardcover; 128 pp.

First published in 1968, John Bivins, Jr.'s, comprehensive study of gunsmithing in the eighteenth and early nineteenth centuries, ***Longrifles of North Carolina,*** has been out of print for a number of years, a status now remedied with the release of a revised second edition. Bivins adds twenty-four new pages of rifle illustrations to his study of American longrifle production in the Tar Heel piedmont and mountains. He argues that

there were several distinct schools of gunsmithing in the state and provides biographical information on more than four hundred gunsmiths. Numerous illustrations of silver and brass inlays and stock carvings support Bivins's contention that the longrifle was not only an instrument of practical use but also an important folk art form. Copies of the second edition may be ordered from George Shumway, Publisher, R.D. 7, Box 388-B, York, Pa. 17402; ISBN 0-87387-097-2; $45.00; hardcover; 223 pp.

Initially operated as a prosperous plantation, the large Caledonia tract along the Roanoke River in Halifax County is today best known as the site of a state prison farm of approximately 5,500 cultivated acres. In ***Caledonia: From Antebellum Plantation, 1713-1892, to State Prison and Farm, 1892-1988,*** retired Caledonia employee W. Alfred Cooke presents an informal history of this rich agricultural area. He relates how the land was first leased to the state for a prison farm, then bought for that purpose, later abandoned and sold to private farmers, and finally redeveloped as a prison farm that today produces huge quantities of foodstuffs for the state prison system and for sale. Cooke, often quoting extensively from prison records and newspapers, tells how the farm was planned and operated, of prisoner escapes and strikes, and, in a lengthy section, of Caledonia's most famous inmate, David Marshall "Carbine" Williams, the noted gun designer. The book may be ordered from the author at P.O. Box 96, Tillery, N.C. 27887; $20.00; paper; 329 pp.

Tar Heel Tradition: 100 Years of Sports at Carolina is sure to delight fans of collegiate athletics and especially those who follow the fortunes of the featured institution, the University of North Carolina at Chapel Hill. In this coffee-table-style album, editor Philip L. Ben presents approximately two hundred photographs, black-and-white and color, of the students of Chapel Hill in competition during the past century. Football and basketball are emphasized, but the non-revenue sports are also included. Text is limited to picture captions and a few short essays, but the well-chosen views of contests and contestants sufficiently portray the joys of athletic struggle for the men and women of Carolina blue and white. The book is available from Lightworks, 5700 Chapel Hill Road, Raleigh, N.C. 27607; ISBN 0-942399-05-6; $39.95; cloth; 160 pp.

Compilers Loyal Jones and Billy Edd Wheeler have gathered in ***Curing the Cross-Eyed Mule: Appalachian Mountain Humor*** over 450 jokes and stories collected from the people of Appalachia. Many touch in some way the daily life of the southern mountaineer, and most were contributed by natives of the region. Divided into broad categories, the jokes and stories deal with a variety of topics, such as love and marriage, moonshine, old age, politicians and lawyers, and medicine. Some of the funniest contributions concern the relationships of Appalachian residents and condescending or rude tourists, such as the lost traveler who snapped to the old man along the roadside, "How do you get to Boone?" He received the calm reply: "Well, sometimes I walk, and sometimes my son-in-law takes me in his pickup truck." The book may be ordered from August House, Inc., P.O. Box 3223, Little Rock, Ark. 72203; ISBN 0-87483-083-4; $8.95; paper; 211 pp.

Copies of articles from this publication are now available from the UMI Article Clearinghouse.

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NCLA Minutes

North Carolina Library Association
Minutes of the Executive Board
April 28, 1989

Barbara Anderson	Ruth Hoyle
Barbara Baker	Marjorie Lindsey
Nancy Bates	Howard McGinn
Doris Anne Bradley	Gloria Miller
Waltrene Canada	Teresa Miller
Geneva Chavis	Nancy Ray
Melanie Collins	Cal Shepard
Jinnie Davis	Leonard Sherwin
Patric Dorsey	Frank Sinclair
David Fergusson	Carol Southerland
Nancy Fogarty	Jerry Thrasher
Ray Frankle	Harry Tuchmayer
Janet Freeman	Art Weeks
Patsy Hansel	Lauren Williams

The Executive Board of the North Carolina Library Association was called to order by President Patsy Hansel at 10:05 a.m., April 28, 1989. The above persons were present at Durham Technical Community College. President Hansel recognized Leonard Sherwin, who represented Friends of the Library, and Secretary Patric Dorsey, who complimented the work of NCLA.

Minutes of the January 27, 1989 meeting were approved with one change: the status of the NC Paraprofessional Association was changed from section to round table.

Treasurer Nancy Fogarty's exhibits showed $22,518.61 in the checking account and $69,080.75 in CIA; disbursements totaled $18,730.74 from January 1, 1989 to March 31, 1989. Financial statements from the auditor supported the fund balances arising from cash receipts and disbursements. Treasurer Fogarty said that she was somewhat concerned about the lack of membership renewals even after the second notice. She proposed that NCLA donate to the University of North Carolina at Greensboro the two-drawer file cabinet purchased for NCLA financial records since the university had not charged NCLA for telephone calls.

Barbara Baker talked about the 1989 conference and noted that preconference information would be mailed by June 1. A vendor mailing went out in mid April.

Kieth Wright, ALA Council Representative, was absent.

Jerry Thrasher reported that Elizabeth Curry is the editor of *The Southeastern Librarian*. Charting the future of The Southeastern Library Association is the focus of the May 5-6 Leadership Conference in Atlanta. An increase of $5 for regular membership dues is being proposed and will be voted on at the Leadership Conference. SELA has 1,355 members, and 185 of these are from North Carolina.

In the absence of *North Carolina Libraries* Editor Frances Bradburn, Marjorie Lindsey delivered a revised report on reorganization of the Editorial Board, recommending elimination of some of the complicated selection processes. Discussions focused on a general board and an editorial board, the appointment of associate, book review, and research column editors, and an advertising manager. A motion was made by Barbara Baker and seconded by Harry Tuchmayer to "accept the concept of the two-tiered board for *NCL* and that refinements to the wording be made and reported at the July 28 meeting." The motion passed unanimously. It was further suggested that every effort should be made to assure a broad representation on the board.

The "Changing Needs...Changing Behavior" seminar held March 31 and April 1 in Greensboro was successful for the 36 attendees according to Cal Shepard, chair of the Children's Services Section. The Section will sponsor two programs at the fall conference: breakfast with Jamie Gilson and a reception co-sponsored with the Round Table on the Status of Women. "See a Film, Read a Book" is the tentative title of a publication that includes books, activities, songs, films, and videos for children. The publication should be ready for sale by the October conference. In addition, Shepard said that the nominating committee will complete its slate and mail ballots in July.

Jinnie Davis reported that the College and University Section will co-sponsor Jesse Carney Smith from Fisk University at the fall conference, and the program session will be called "Libraries, Librarianship, and the 1990s."

R. Frank Sinclair reported that the Community and Junior College Section collaborated with the College and University Section to arrange a program for the Biennial Conference by Jesse Carney Smith, Academic Librarian of the Year, 1988. An increased membership continues to be a priority, A slate of officers is being prepared, and Barbara Baker represented the Section at National Libraries Legislative Day in Washington.

Lauren Williams reported that the Documents Section will sponsor a workshop on May 5 entitled "Government Documents and Online Catalogs: Alternatives," partially funded by a $1,000 NCLA Program Grant. Carolyn Jamison, Jan Swanbeck, and Arlene Hanerfeld will discuss document cataloging problems and issues, cataloging of documents in an online catalog system, and document short record entry into OCLC/LS2000. Senate Bill 62 has undergone many revisions. The bill, "An Act to Require State Publication Procedures, Manuals, Administrative Review Procedures for Publication and...Agency Noncompliance" (shorter title is "State Publication Policy") has been referred to the Senate State Government Committee. Harry Tuchmayer made a motion that NCLA send a letter of support to R.C. Martin and members of the Senate State Government Subcommittee endorsing Senate Bill 62. The motion passed after being seconded by Howard McGinn.

The theme for the summer issue of *North Carolina Libraries* will be government documents, and Pat Langelier and Ridley Kessler are guest editors. Chair Lauren Williams also distributed a brochure from the Government Documents Round Table of the American Library Association.

Junior Members Round Table will offer its biennial award, a plaque and $25, to a young librarian who is a member of NCLA, has been employed less than six years, has experience in NC, shows enthusiasm for state activities, and demonstrates a commitment to the library profession. Application for the award must be made by July 1. Melanie Collins also reported that by-

laws for the Round Table have been completed and that the program at the fall conference will focus on role models.

Geneva B. Chavis, chairman, mentioned that REMCo received a project grant to present Ann Allen Shockley, newspaper staff writer and columnist, librarian, and consultant from Nashville, Tennessee, and Casper LeRoy Jordan, Deputy Director, from Atlanta, Georgia, at the NCLA Biennial Conference. The session will be "Road Builders—Librarians Who Paved the Way." An outstanding academic, public, special, school, and library education librarian will be recognized and honored. A slate of officers is being prepared. Stories are being compiled for the *Heritage Book of Black Families in North Carolina*, a publication scheduled for a fall release.

The North Carolina Library Paraprofessional Association will offer "Improving Staff Communications" on May 25 and 31 at the Wilson County Public Library and Appalachian State University respectively. The workshops are partially funded by LSCA Title III and will be presented by Dr. Ernie Tompkins, Training Director for the City of Winston-Salem. Kathleen Weibel, Director of Libraries, Ohio Wesleyan University, will be the speaker for "I Work in a Library, but I'm Not a Librarian," the program planned for the Charlotte conference.

The North Carolina Association of School Librarians donated $200 to the NC High School Library Association, David Harrington and Sandra Smith represented NCASL at Legislative Day in DC, and School Library Media Day was celebrated with billboards, bumper stickers, a proclamation, and a broadcast on the Distance Learning by Satellite. Carol Southerland, NCASL chair, announced speakers for the fall conference: Dr. Phil Turner, author of *Helping Teachers Teach*, Alvin Schwartz, children's author and folklorist, and Bob Etheridge, Superintendent of Public Instruction.

David Fergusson, in the absence of Irene P. Hairston, stated that program announcements were mailed for the May 18 and 19 conference of the NC Public Library Trustees Association. Sponsors include the State Library, the Public Library, Trustees Section, the Public Library Section of the NCLA, the NC Public Library Directors Association, Friends of NC Public Libraries, and the North Carolina Library Staff Development Program. Program highlights include economic and educational growth of communities, current developments and issues, automation and networks, building or renovating, and fiscal responsibilities. A preconference program, "Meeting the Censor, A Skills Development Workshop," is planned for NCLA's Biennial Conference.

Nancy Bates, incoming chair of the Public Library Section, attended Legislative Day. The Section co-sponsored the Trustees Program May 18-19. Will Manley is being co-sponsored with Reference and Adult Services at the biennial conference. The Public Library Section is looking for applications for the Public Library Development Award. Inquiries should be addressed to Carol Myers. The $500 cash award will go to the librarian doing the most to promote public libraries in North Carolina. Martha Davis was recommended for reappointment to the State Certification Committee of the State Library Commission.

Barbara Anderson, reporting for Reference and Adult Services, noted that two speakers, Kaye Gapen, Library Director of the University of Wisconsin at Madison, and Will Manley, Library Director of Tempe (Arizona) Public Library will speak at the Biennial Conference. RASS will begin a statewide electronic newsletter to communicate information about anything useful in the area of reference and adult services. Charles Montouri of the State Library assumed a crucial role with the bulletin board project and created an editorial board to handle organizational matters.

Harry Tuchmayer noted that Resources and Technical Services will issue an award to a first attendee and a merit award to recognize a person who has contributed significantly to resources and technical services in North Carolina. Flyers will be distributed. A newsletter is being started, and the resource directory for catalogers is being updated. Sandy Berman and Tom Broadfoot will present programs Wednesday and Thursday during the fall conference.

Round Table on the Status of Women in Librarianship reported that Dr. Alice Warner's March 16 presentation on "Money and Librarians" went well, and had 35 in attendance. RTSWL will return $135.26 of their LSCA Continuing Education grant to the State Library. Conference plans are shaping up. Jinx Melia, author of WHY JENNY CAN'T LEAD (republished as BREAKING INTO THE BOARDROOM) will participate. They are investigating the sale of MsMANAGEMENT note pads as a fund raiser. In addition, the Round Table will co-sponsor a reception at Discovery Place with the Children's Services Section. The next meeting is July 15 in Asheville.

Nancy Ray submitted a report on the Library Administration and Management Section. The keynote speaker for the October conference will be Dr. Jerry Campbell of Duke University. Bylaws for the new section were finalized for review by the Constitution, Codes, and Handbook Committee. LAMS is included on the current NCLA biennial membership form.

The Constitution, Codes, and Handbook Committee submitted three amendments to the *Constitution of the North Carolina Library Association* and requested that they be presented to the membership at the 1989 biennial meeting. They are:

Amendment 1. To insert after Article IV the following new article, to be numbered Article X.

ARTICLE X. Committees [New]

1. The President, with the advice of the Executive Board, shall appoint committee chairmen and suggest other members except as otherwise provided. The President shall be an ex officio member of each committee with the exception of the Committee on Nominations.

2. *Standing Committees.* The Executive Board may establish standing committees to perform the continuing functions of the Association.

a. Standing committees shall include the following:

Archives Committee
Conference Committee
Constitution, Codes, and Handbook Revision Committee
Finance Committee
Governmental Relations Committee
Intellectual Freedom Committee
Membership Committee
Publications Committee
Scholarships Committee

b. Standing committees shall report to the Executive Board

3. *Special Committees.* Special committees for specific purposes may be appointed at any time.

a. The Committee on Nominations, to be appointed by the President each biennium, shall be considered a special committee.

b. Special committees shall function until their purposes have been fulfilled.

Amendment 2. To renumber the present Article X as Article XI.

Amendment 3. To renumber the present Article XI as Article XII.

Committee chair Doris Anne Bradley also presented a draft of the make-up and responsibilities of the Publications Committee. Functions include developing and recommending policies and guidelines, with the exception of *NCL*, identifying publication needs and making recommendations as appropriate, and providing advice and recommendations regarding publications to sections and round tables. After a discussion of the purpose and the validity of the committee, it was moved by David Fergusson and seconded by Jerry Thrasher to add a statement that an NCLA publication is defined as being published by NCLA, other than by a section or round table. The motion passed.

Grant money has been spent according to the Finance Committee.

Helen Tugwell submitted a report for the Goals and Objectives Committee for reaction and input on a permanent address, employment of an executive secretary, and a permanent part-time office.

The Honorary and Life Membership Committee chair Waltrene M. Canada made recommendations for Honorary and Life Membership in NCLA. A discussion followed on some of the nominations. Since there were no guidelines, the committee will look at Carol Southerland's request to add two names.

A discussion on the granting of posthumous awards resulted from the proposed North Carolina Library Association Distinguished Library Service Award. "One award every two years to a professional librarian or, when deemed appropriate, in memory of a deceased professional librarian" was the motion to amend the criteria made by David Fergusson and seconded by Ray Frankle. The motion passed.

A workshop sponsored by the Literacy Committee will be June 8-9 in Boone. Discussions include writing and readability tests, building coalitions, collection development, funding, promotion, staff training, plus more.

Art Weeks said that the Marketing Committee will meet June 1.

Ray Frankle stated that the membership brochure will be in publication by June, and there are no major changes.

Nominating Committee chair Leland Park submitted a written report which said that biographical information on the nominees would appear in *NCL*, and ballots would have to be returned postmarked no later than May 31.

The Recruitment Committee participated in the North Carolina High School Student Library Association Conference which was held in Charlotte on March 16-18 for approximately 300 young adults. In addition to a panel of four professional librarians who discussed "Word Up: Library and Information Careers," an exhibit with brochures and career information was displayed.

The Ad Hoc Minority Recruitment Committee submitted a report on where to recruit individuals to library education and the library profession, the need for scholarship funding, the lack of information about what professional librarians do, and the need for involving libraries in cooperative internship programs.

Friends of NC Public Libraries will hold its annual meeting in Elkin. The new president is Gorda Singletary, and the group has asked for a place on the NCLA fall program.

President Hansel read several communications including one from North Carolina Central University on the celebration of the 50th Anniversary September 28-30, 1989 of library science instruction at NC Central. The Board was reminded of the July 28 meeting in Wilmington.

There being no further business, the meeting was adjourned at 1:40 p.m.

Gloria Miller, Secretary

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Upcoming Issues

Winter 1989	- Conference Issue
Spring 1990	- Library Humor *Rose Simon and David Fergusson, Guest Editors*
Summer 1990	- Public Documents *Pat Langelier and Ridley Kessler, Guest Editors*
Fall 1990	- Performance Measures *Jinnie Davis, Guest Editor*
Winter 1990	- Supporting the Support Staff *Harry Tuchmayer, Guest Editor*
Spring 1991	- Law and the Library *Tim Coggins, Guest Editor*
Summer 1991	- Children's/YA
Fall 1991	- Library Buildings *John Welch, Guest Editor*
Winter 1991	- Conference

Unsolicited articles dealing with the above themes or on any issue of interest to North Carolina librarians are welcomed. Please follow manuscript guidelines delineated elsewhere in this issue.

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