The Effect of Emerging Technologies on Children's Library Service

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As an agrarian-based culture of the past gave way to the industrial age, the introduction of electronics has revolutionized twentieth-century culture.¹ Proponents of the "Information Age" may vary in their visions of the effect that high speed communication and data transfer will have on the twenty-first century and beyond, but it is clear that whatever developments finally materialize, today's children will be profoundly affected by the introduction of technological applications into their lives.²

Faced with a seemingly endless stream of new technology, children's services professionals may well feel drowned in a flood of new devices, new equipment, new applications, all of which carry a vocabulary of foreign terms. The steady stream of new developments and information often seems to be swelling into a raging torrent, threatening to overwhelm the professional with too many choices. Caught in the maelstrom, it is easy to lose one's head or to retreat entirely. Since there is no sign that the flood will be receding in the near future, it is wise to look over the situation and assess this vast influx of new information technology.

On the surface it may seem unnecessary for the children's services professional to be concerned with how technology is shaping the fields of education and librarianship. The schools are investigating computer applications in education and teaching computer literacy while library reference and technical services departments are applying the new technology to acquisitions, cataloging, and reference services. The expanse

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and expense of such undertakings are beyond the scope and budget of all but the largest children's services departments. Concern for these matters seems to be unnecessary until sometime in the future. Yet the trend toward falling prices and rapidly improving technology makes it imperative that children's librarians investigate the potential of new technologies now, before the procedures and systems are formalized, so that children's departments can ensure that when innovations are implemented they will have the capabilities to provide not only for the internal management needs of the department but also to improve the services to young patrons.

Even libraries with limited budgets and no immediate plans for adding technological innovations such as computerized catalogs need to be aware of developing trends; in time such systems will become affordable for even the smallest libraries as power and storage capabilities increase and the prices of hardware fall. An awareness of the capabilities of each emerging technological tool will enable children's librarians to analyze department tasks and to identify appropriate applications in order to communicate their departments' specific needs to the software and hardware vendors.

The professional who remains intimidated by the advent of new mechanisms will find him/herself compromising quality service, important applications, and necessary avenues of access by allowing vendors to dictate the library's needs. It is imperative to analyze and evaluate this field with the same attention that is paid to space allocation, equipment needs, and collection development. Professionals should no more blindly settle for products created by the producers and distributors of technical systems than blindly accept the output of the publishing field. Criticism and expressions of department needs are necessary to ensure that the technical tools are shaped to work for us rather than finding we are required to work with inflexible, established tools that shape our work. As more applications and services are offered by vendors and suppliers, it is important for the library community to communicate with technical suppliers and not accept less than the best approach to local needs.

Technology can bring improvements only if the library community views technology as a tool in the provision of library service. Technology should not be embraced blindly for the sake of progress; it can be useful only if it is viewed as a tool and is found to deliver what is needed in a practical manner that is efficient, labor saving, and cost effective.

Children's services librarians are not strangers to the nonprint arena. Innovative formats have been used in children's programming
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and services for a long time. Filmstrips, 16mm films, toys, games, puzzles, and similar realia are familiar aspects of most libraries' children's services programs. But the newer technologies of microcomputers, databases in online and laserdisc formats, video formats, and cable television have not been widely discussed in relation to children's library services. These emerging technologies are beginning to find applications in children's services. Because the familiar media formats have been examined and discussed in numerous articles and monographs, this discussion will be confined to these newer technologies that have only begun to be examined.

Microcomputers

Of all the new technological formats, the microcomputer is likely to have the greatest influence on children's library services. Increasing numbers of children are encountering microcomputers as part of their school curriculum and developing a facility with computer use. The availability of microcomputers for public access use in libraries aids in extending the educational power of the computer for young patrons to other applications beyond the classroom.

A growing number of software programs now exist that provide entertaining exercises that reinforce logic skills enabling the child to progress at his/her own pace sequentially from comprehension skill levels through application of knowledge. With well-written programs, the child is able to receive immediate feedback to incorrect responses. The infinite patience of the computer provides for as much repetition as is necessary for the user to grasp a concept. Graphics programs such as PRINT SHOP, NEWSROOM, DAZZLE DRAW, and others offer the opportunity to exercise creativity and experiment with design. Many of these programs offer a set of preset pictures thereby allowing young artists to produce satisfying designs without requiring technical drawing skills.

In a similar manner, word processing programs also encourage creative expression among young patrons. Putting pencil to paper can be a laborious task for some children while using the computer for language composition can offer an alternative means of expression that produces satisfying results. This mode of expression is especially useful with patrons with handicaps or learning disabilities.

Even though use of microcomputers is increasing in the field of education, there still exists a vast need for good software that can provide challenges for the student in place of electronic seatwork. Too
much of what is presently available duplicates standard teaching practices without using the computer's abilities to its full potential. Purchasing is difficult when so many programs exist and so few are adequately reviewed. Programs such as Educational Products Information Exchange (EPIE) and local clearinghouses for examination and review are a move to focus on the quality of software programs by obtaining examination copies and reviewing software for appropriate uses, ease of operation, and quality of accompanying documentation such as manuals, charts, and similar support materials.  

As public-access computing develops in more libraries, library personnel must become critical, discriminating consumers. The problems revealed by the schools' entry into the computer age can easily be avoided by children's services librarians willing to study the experiences of their educational colleagues. This will mean developing a facility with the use of these tools and a familiarity with their capabilities.

While the use of computers in schools is limited by the constraints of curriculum, the public library can offer a wide range of educational software that challenges young patrons as well as giving them the opportunity to experiment with writing programs on their own. Excellent software programs that are not appropriate to curriculum needs often fit the public library's need to provide a broad range of information. Librarians willing to experiment with the computer will become comfortable with its use, develop an understanding of its capabilities, and gain confidence in evaluating new software for use by patrons or in the management of department tasks.

In a discussion of his LOGO programming model, Seymour Papert warns against using technology only to perpetuate traditional approaches to tasks. With new technologies offering a revolution in present operating procedures, library professionals must be careful not to simply automate library operations without examining each task to determine if a new approach made possible by the new technology, might produce faster, more efficient results. Using a printed dictionary is a more effective use of a tool than searching a computer program for spellings or definitions. But there may be other operations more efficiently handled by a microcomputer—i.e., compilation of statistics, mailing lists, serials holdings, or other tasks that require constant modification of data. In these areas the creation of a microcomputer database to control information can save staff time.

The microcomputer's potential for information storage and retrieval will add a new dimension to the old debate about providing information directly to patrons v. teaching patrons to use reference
tools. While it is impossible to predict when compatibility problems will be solved, the microcomputer has great potential—e.g., to connect the user with online databases and library networks through telephone modems; to provide faster access to databases, directories, and large collections of information with the development of compact discs with read-only memory (CD-ROM); and to access and interact with information through videodisc formats.13

Most library instruction now takes the form of teaching the patrons to use the card catalog, locate library materials, and use specific reference tools. Widespread use of microcomputer databases will make it easier for patrons to search broad collections of information on their own. Freed from the duties of the reference desk and instructing in how to use specific tools, the librarian can direct his/her attention to giving instruction in research strategy and the basic principles and patterns of information organization and flow.14

While children cannot be expected to grasp search protocols as they now exist for online databases, simplified access in the future can enable students to satisfactorily use networks and local library databases without intensive knowledge of what is now the realm of reference professionals. A free-inquiry approach to seeking information would prepare the student for life-long skills in problem solving and information-seeking techniques without requiring that he/she become proficient in elaborate search terminology.15

Adult reference departments are experimenting with instructing patrons in how independently to search such databases as BRS-After Dark, Knowledge Index, and Wilsonline. With instruction in search strategy, students certainly would be capable of constructing their own search procedures for science projects, extensive reports, and research papers. Presently search protocols are not sufficiently standardized for use by young people and the fees for searches eliminate most student use, but interactive videodiscs and CD-ROM may present opportunities for students to search these formats as database subscription and connect-time fees fall within reasonable rates.

The laser disc and interactive video formats have the capability to store large quantities of information that can be accessed randomly. Experimental databases, encyclopedias, and union lists are beginning to appear in these new formats as the profession investigates the relative merits of each information source on disc format v. print format.16

The creation of departmental databases using the computer or laserdisc formats fits into the present children's services practice of providing information resources in a multitude of forms. W. Bernard
Lukenbill's view of the learning resource center of the future is a model public library children's services departments should consider. Lukenbill foresees the future learning resource center to be holistic in philosophy, incorporating teaching and learning resources, information advisement and counseling, instructional development and design, and information media production.

Delivery of current information would be accomplished through database control of news items, government publications, documents, and crisis and community information resources. Access via a database will circumvent the delay inherent in the use of the print medium. While almanacs, encyclopedias, journals, and pamphlets are often dated by the time they appear in print, databases and interactive videodiscs allow for constant modification for information currency.17

Cooperative ventures between schools and public libraries could extend this concept to incorporate learning packages, content-related bibliographies, subject access to fiction, community resource files, pathfinders, and access to materials at specific reading levels. As interactive videodisc and CD-ROM continue to be discussed within the profession, children's librarians need to be investigating the development of these formats and evaluating their potential use with young people.

Video

With the increasing number of households acquiring video recorders, libraries have begun to add video cassettes to their circulating collections.18 These collections are rapidly growing in size and popularity of use, but few children's departments have explored the potential benefits of this technology because copyright considerations prevent unrestricted use in programming. Many children's books already have been adapted to film and released on videocassette.19

This new area of the collection raises questions of concern to children's librarians. As significant numbers of video titles are added to the collection, are children's personnel involved in purchase decisions? Are children allowed to borrow these materials themselves? Are separate registration requirements in force?

The VCR video format is compact and more easily loaded for use than 16mm films or filmstrips. Children are capable of loading, searching and rewinding programs independently with less likelihood of damage. While the picture quality presently limits use to small groups, technical advances in monitors and large screen projection will soon make the video format more appropriate for use with larger audiences.
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Present use of videos in programming seems to fall into the "public performance" realm of the copyright law requiring libraries to acquire leases or licenses for use of this media in library programming. Legal tests of the public library's relative uses for education and entertainment have not appeared, leaving questions as to whether libraries qualify for educational exemptions or if the law will be modified or clarified in time. As copyright questions and circulation policies are resolved and more works make their way into video from the feature film market and the arenas of commercial, cable, and public broadcast television, the body of visual interpretations of children's literature will expand the horizons for the children's services professional.

Book talks accompanied by excerpts from the visual media will offer involvement of both the auditory and visual learning modes, thus sparking the interest of more children. Adaptation of children's books accounts for a significant percentage of many libraries' circulating video collections. Libraries presently circulating videotapes have already noted the trend that videos generate requests for the literature used for the video adaptations.

While a few adventurous libraries have begun to experiment with in-house production of videos for program recording and staff training, advancements in the technology and declining prices of equipment will make such productions more common in every library. The inexpensive cost of the tape medium will enable children's services departments to tape library orientation presentations for circulation or use with school visits. With permission of publishers, book talks could be filmed featuring readings from related books. Puppet shows and other special programs could be taped and video formats could be used to provide an overview of summer reading program activities for presentation to a library's board. The public library and school personnel could share equipment or work together on projects of mutual concern. The declining costs of video and improvement in production techniques will also enable libraries to purchase several video titles for the same price as a single 16mm feature film.

Children's librarians will be challenged to develop expanded selection skills to evaluate these forms of media and to supervise filming of library productions. A new vocabulary will be needed to understand production values, variety of camera angles, transition between camera shots, faithfulness to the written text, and similar concepts. It is an area that will put demands on professional skills and library staffing, but it may be worth the investment if the development of program packages for school visits, book talks, and special programming can reduce staff planning time.
Commercial, Public, and Cable Television

Many of the concerns inherent in video formats are also applicable to broadcast television. It is a grey area as to whether libraries qualify as purveyors of programming “for educational use.” The present law perceives off-air taping, except for face-to-face instruction, as a violation of present copyright restrictions. Children’s services personnel need to capitalize on the visual interpretations available through the television media as copyright questions continue to be examined.

Despite criticism of television’s role as an electronic babysitter offering a lack of quality programming, this medium plays a significant role in children’s culture and is a strong influence in their lives. After-school programming and television series such as Reading Rainbow have the potential to introduce children to the joys of reading by presenting visual renderings of settings, characters, concepts, and ideas. Rather than ignore the medium, it is incumbent on children’s services professionals to capitalize on children’s use of television as an information source. Librarians can promote better programming by commending networks and sponsors who have produced quality shows; by communicating with local commercial, public, and cable stations; and by promoting programs based on children’s books.

The growth of cable television in the 1980s opens a new outreach source for the public library. While cable contractual arrangements vary throughout the country, the public service mandate often offers libraries studio use, program taping services, and character-generated bulletin boards for announcements. Children’s librarians have explored cable productions of young patrons doing book reviews, preschool story hours, library tours, and other special library programs. While not all cable companies are eager to cooperate in assisting with local productions—and the planning and execution of such programs is time consuming and labor intensive—the public’s use of television as an information source makes this medium an important format for libraries to explore.

Two recent projects being developed show promising opportunities for blending technology and provide important information sources for children’s services professionals—i.e., the University of Pittsburgh’s School of Library and Information Science Mister Roger’s Neighborhood project and the Kidsnet database.

Pittsburgh’s School of Library and Information Science has begun extensive cataloging and analysis of the concepts introduced in the Public Broadcasting System’s series, Mister Roger’s Neighborhood. Videotapes of the programs are screened, analyzed, and assigned subject
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headings which are entered into an online database using child development terms. While problems have been encountered in applying AACRII rules and MARC formats to the puppet characters, imaginary friends, live actors, and concepts of the programs, the project is a model for the subject analysis, organization, and treatment of videotape and television media as a research tool.26

The keyword list developed by Pittsburgh's project will provide an example for future study of children's television programming and a focus for further investigation of other visual formats that could be applied to public, commercial, or cable programs as well as videocassettes and videodiscs.

With a broader scope, the Kidsnet database of information on children's radio and television is a computerized clearinghouse aimed at providing students, parents, teachers, and librarians with evaluations, synopses, and current data on upcoming programs and related events as well as providing an archival database on previously aired programs.

While still in the development stages, the four-year-old project comprises data on 20,000 programs with access available by subject, curriculum area, grade level, instrumental design, and learning objectives. Special needs audiences are also served by the database through notations concerning programs available for the visually impaired, developmentally disabled, emotionally disabled, motor impaired, bilingual, multiethnic, gifted, and talented. Additional elements identify underwriters and/or sponsors, the availability of study guides, bibliographies, scripts, and related materials, and source information for preview, rental, and purchase. Adaptations from literary works are coded by broadcast title as well as by author and title of the original book, play, or short story thus identifying the title changes that so often occur with radio and television productions. In the future, Kidsnet will carry the "Read More About It" bibliography listings in advance of the Library of Congress mailings to schools and libraries.27

Targeted to go online in 1986, the Kidsnet database is an important step in helping children's services professionals encourage quality viewing and in making radio and television programming relevant to children's educational and informational needs.28

Emerging technology does not spell the death of books, reading, or human contact as one might fear. As movable type revolutionized the dissemination of information, modern advances will speed communication and refine the delivery of data with more efficiency. Librarians have the opportunity to emerge as valuable orchestrators of a diverse set of information formats if they perceive their professional role more as managers of information rather than as caretakers of books.
We are comfortable with books as information tools, but each new emerging format is also a potential tool for entertainment, education, or enlightenment, able to serve young patrons when employed appropriately. Children's librarians serve clients who deserve the best sources of information delivered with efficiency and personal attention.

The future rests on how well children's specialists can help the young to make their way in the complex new century to come. If new technology can deliver the answers they need faster and more efficiently, then every children's librarian and child will have more time to curl up with a good book.

References

11. Ibid., p. 57.
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