DOCUMENT RESUME

ED 367 381 IR 054 931

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TITLE	The Coming Generation of Computer Proficient Students: What It May Mean for Libraries.
PUB DATE	[Jan 94]
NOTE	10p.
PUB TYPE	Information Analyses (070) -- Viewpoints (Opinion/Position Papers, Essays, etc.) (120)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	Academic Libraries; Access to Information; *Computer Attitudes; *Computer Literacy; Elementary Secondary Education; Futures (of Society); Higher Education; *Information Literacy; *Information Technology; *Library Automation; Public Libraries; Student Attitudes; *Technological Advancement; Users (Information)
IDENTIFIERS	*Information Age

ABSTRACT

As elementary and secondary schools increase computer training for their students, computer literacy is advancing to a higher level of proficiency for these students. As they make use of academic and public libraries, students will expect high performance computer service and have challenging requirements of that service. Libraries must develop high level technology and complex software to be ready to serve these students/patrons as they come to the libraries in increasing numbers. Library concerns over student/patron reactions to advanced computer usage requirements can be laid aside, as complexity will be expected and welcomed by users. (Contains 15 references.) (JLB)

The Coming Generation of Computer Proficient Students: What It May Mean For Libraries

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Gerard B. McCabe and Rebecca M. McCabe

Why This Interest:

Until recently, students attending generously endowed private schools or from a few well supported school districts had a monopoly on computer user skills when they entered college. Many attended elite institutions, in the ivy league perhaps, or the well known and intellectually demanding engineering and technology schools. Now with computer training being given in so many public and other private elementary and secondary schools, computer literate students are coming in increasing numbers to all academic campuses. More and more are visible in our public libraries. In their understanding of computers these young people aren't too different from the typical librarian. They grew up with television and learned about computers mostly in the schools. Most librarians acquired their knowledge of computers as adults in college, in library school or on the job. In academic libraries students learn quickly to access the online public access catalog (OPAC) or a computer based catalog, and retrieve citations for their projects and assignments. In the public libraries, high school students access similar data sometimes working in groups at an OPAC terminal. When a helpful librarian approaches to offer assistance, the eager students ask "Is there more?" If the system has been upgraded the librarian will show them, or perhaps lead them, to a different terminal to access a local area network which provides more databases. Perhaps, however, another solution is possible. Yes, there is more and the thoughtful librarian will guide the students to Boolean searching. If a cooperative endeavor exists between local high schools and the public library, the librarian can give a practical lesson supplementing what was taught in the classroom. (Ala and Cerabona 1992)

Larger public libraries while upgrading their online services often are offering alternatives until system upgrades are in place. Some public libraries offer advanced database searching at their main libraries only, while others offer these services in their branches through a local area network which can be accessed from high school libraries or from modems in homes. In most cases the databases are the same as those offered in academic libraries such as ERIC,

PSYCHLIT, and so forth. High school students in the public libraries use these services with great enthusiasm and so inspire the librarians to push the frontiers of service firmly ahead. These young users will queue up to use electronic databases when paper form is only a few feet away with no waiting.

In a similar way the online public access catalogs of some colleges and universities are being converted into single vendor systems and then interconnected into academic library networks, witness Florida with two systems one for nine state university campuses and one for community colleges, Maryland with a system serving its eleven campus university system, and Ohio with one serving a larger number of public and private academic libraries. For a decade now, the original state wide system in Illinois has been serving over 40 libraries.

All library online catalogs need clear, easy to understand directions. "User friendly" is an overworked term, but it still identifies the objective. Clean databases for these online public access catalogs are essential, so that the information patrons see is accurate, causing minimal user frustration. Library administrators realizing the need are working for improved funding to upgrade these OPACS to full information servers which will offer access to useful databases through a single system service. The descriptive phrase for this new concept is "client/server". Briefly described client/server features software that provides information to an inquirer, usually a person initiating a query, from a source, possibly a databank. Every public library, regardless of size, even the smallest branch or the paperback kiosk on the downtown business corner, should have at least one OPAC or information database terminal connected to the main library. In the rural areas this connection should be to the state library or, cooperative agreements permitting, to the nearest large city library. In the best of worlds, all academic and public libraries should be interconnected to facilitate resource sharing. The wonders of accessibility through Internet amaze everyone, but local and regional interconnectivity on a local or wide area network is a real need. Younger users, however, are not as likely to plan ahead and to have time to wait on resources from another location unless it is delivered immediately. For the young users's information needs "immediate gratification" may be the library's only acceptable response.

For all library administrators, this priority is clear, make as much information as affordable available online! Why? The generation that will use this service and advance libraries through even greater use is here now, and more are coming right behind them. With no memory of life without television, the allegedly tough competitor for books and reading, these young people are readers! Did television have the impact on libraries that computers are having and will have on libraries? Count the number of television sets or monitors in libraries, not very many; a few machines can serve a large number of people. Now count the number of computer terminals and microcomputers, quite a few and often more are on order. There is a difference between learning through viewing, and learning through using a computer. Television can serve group learning, but microcomputers usually serve individuals. Through the intellectual exercise that working with computer software requires, these computer literate high school students are responding to the challenges of the new information age. They are looking for information and that information often is accessed via the computer.

Within a very few years, however, a newer young person is coming, one who is not only literate but computer proficient. As mentioned in the opening paragraph some of these computer sensitive young people have been present for a decade, but now entering the secondary schools are many young people who can and will respond to very challenging and intellectually demanding computer software in their pursuit of learning. Exposed to computers from kindergarten onward, these students know no other way to do class work than with computer help. They will expect and anticipate that what libraries offer them will be high level technology that will reward its users with important information for their study and enjoyment. Their coming to our public and academic libraries will signal the maturing of the Information Age, a true information society. Adding more computers isn't all we need do. We must understand the clientele that is coming to us in a very few years. Knowing how thorough their training has been, and how high their library expectations are will be critical to our planning. Working with these new students will be very exciting for all librarians. Unfortunately, because there are still "pockets of poverty" among the nation's school districts, there will be some who may not have this skill level, and libraries may face a generation of transition. For some libraries this dichotomy of "information haves" and "information have nots" among young library users may pose serious service problems in trying to serve both groups.

How can librarians learn more about these computer proficient young people and what their expectations might be? The writers decided to read articles written by educators of elementary and secondary school children. Our interest was in learning what they are teaching the children, how computers are being used to teach, and therefore, what libraries can expect in the next few years. Our curiosity is not unusual at all, The Chronicle of Higher Education, October 14, 1992, reported on academic researchers returning to the schools for their research on children. (Winkler 1992, A6) Their reasons for doing so are different from ours, but what is the same is the need to know how and what children are learning. If these articles we describe here are accurate and only a few were read of what appears to be hundreds, then librarians are really in for some surprises and, most of all, an opportunity to advance dramatically information service and delivery. But libraries have to be ready. With television commonplace in the American home, library use increased and librarians handled it. With a computer proficient clientele, increases can and undoubtedly will be sky high. We must plan. We must know if what we are doing now is on target, as the time approaches when these young people will enter our libraries as students and users.

The Literature:

Citing a series of publications from reputable sources, noting over 600 dissertations, all concerned with problems in American education and many calling for "use of computer technology" in the schools, Alice W. Ryan calls for better training in computers for teachers (1991, 161-184). Special counseling for children who experience difficulties in learning to use computers is advocated by Margaret Crosbie-Burnett and Charles J. Pulvino (1990, 272-80). Urban schools noting shortcomings of their students when compared to suburban and rural school children are using computer-based drills to help them (Marshall 1990, 21-23). Migrant children, pre-primary to third grade, in Australia learn the basics (reading, writing, arithmetic) through computer-based solutions reinforcing the view that computer literacy can be acquired at a very early age (Lally 1989/90, 424-429).

Carol Wallingford states that "The library media specialist must support computer literacy and must be aware of current developments in computer technology" (1986, 268). Her concern is media services for kindergarten children. In 1982, Andrew Molnar and Patricia Babb described

the findings of Dr. Seymour Papert, Massachusetts Institute of Technology, "that young, elementary school children, given the availability of a computer are capable of solving complex problems in physics, geometry, and physiology...of writing computer-based poetry and music" 1982, 6).

Gail Caissy writes "The schools must formally teach information processing skills and provide repeated opportunities for practice over the K-12 grade span" (1989, 49). "Young children of infant and lower junior age love to work at the computer." So writes Gary Heywood-Everett in a paper about British primary school math classes for seven and eight year old children (1991, 71-79). In a brief review, Raymond Kurzweil notes children lack fear of computers while adults are more likely to be apprehensive (1991, 60-61).

In the Washington, D.C. area, reporter Molly Sinclair reports on thousands of computers in the schools (1992, B1, B7). CD-ROM products designed for schools are advanced according to Roxanne Mendrinos (1990, 34-36).

In an editorial symposium, Reference Librarian of the Future, academic librarians and a library science educator, opine on: reserving reference librarians for "research consultation"' finding librarians who are technologically advanced; the need for librarians to be flexible (Rockman 1991, 72-80).

What libraries are planning:

Are the services that librarians are planning for going to be worthwhile challenges for these new generation students? With young people with well developed information processing skills coming to libraries, those libraries must have advanced computer based information, not easily accessed material but indepth information requiring skill to extract, so that the students face the intellectual challenges heralded by their previous training. This time libraries will be affected more so than by the generations that grew up with television.

These new library users want new technology, their demand keeping up with trends, and academic and public libraries are not immune to change nor should they adapt to it at a slow

pace. These users will expect greater speed, and customized combinations of information through computers. Users want answers to their questions. Technology opens doors for all librarians so they are not limited by what is in their buildings. Academic and public library administrators should lead the way, showing they understand and want the new technology. An awareness of existing technology and how to use it is the meaning of computer literacy; there may be no place for librarians who cannot interact with technology. Continuing education for librarians to help improve basic understanding of computers and the new client/server online systems and networks is essential.

Conclusion:

In a 1989 issue of School Library Journal, New York Public Library's Coordinator of Children's Services. Julie Cummins remarks "Children readily adapt to using microcomputers and they will become adept at using whatever machine-readable format gives them the information they are seeking." (1989, 34) She concludes her short paper with some futuristic remarks. None are disputable. For librarians now is the time to plan for very advanced information systems, disregarding our perceptions of the complexity of automation. Difficult as that may be, it's not going to be a challenge for the young people growing up now, who soon will be in our academic and public libraries with great hopes and excellent skills, to work with anything we can give them no matter how advanced it appears to us.

References

Judy Allay and Kathy Cerabond, "Boolean Searches - A Life Skill." *School Library Journal*, November 1992.

Gail A. Caissy, "Curriculum for the Information Age." *Educational Horizons* 68(1) Fall, 1989: 42-45.

Margaret Crosbie-Burnett and Charles J. Pulvino, "Pro-Tech: a Multimodal Group Intervention... "*Elementary School Guidance & Counseling* 24 April, 1990: 272-280.

Julie Cummins and others, "Furthering the Vision: Three Youth Services Specialists Respond." *School Library Journal* 35 (14) October, 1989: 34.

Gary Heywood-Everett, "Computer Instruction in the Classroom Context." *Early Child Development and Care 69*. Gordon and Breach, 1991: 71-79.

Raymond Kurzweil, "The Futurecast: Learning in the Age of Knowledge." *Library Journal* 116(19), 15 November, 1991: 60, 62.

Michael Lally, "Computer-based Delivery of Early Education for Children of Itinerant Families." *Education 110*, 1989/90: 424-429.

Gail Marshall, "Drill Won't Do." *American School Board Journal*, Special Annual Supplement 177 July, 1990: 21-23.

Roxanne Mendrinos, "CD-ROM: A Technology that is Steadily Entering School Libraries and Classrooms" *Electronic Learning* 9 January, 1990: 34-36.

Andrew Molnar and Patricia W. Babb, "The Electronic Age Challenges Education." *Appalachia* 16(2) Nov.-Dec., 1982: 1-7.

Ilene Rockman, "Reference Librarian of the Future" A Symposium. *References Services Review* 19(1), 1991: 71-80.

Alice W. Ryan, "Meta-analysis of Achievement Effects of Microcomputer Applications in Elementary Schools" *Educational Administration Quarterly* 27 (2) May, 1991: 161-184.

Molly Sinclair, "A Glitch in the Classroom Computer Revolution" *Washington Post*, 8 March, 1992: B1, B7.

Carol Wallingford, "School Library Media Services to Kindergarten Students" *School Library Media Annual* 4, 1986: 260-276.

Karen Winkler, "Researchers Leave Labs, Flock to Schools for a New Look at How Students Learn" *Chronicle of Higher Education*, 14 October, 1992: A6.