

Technology for the School Librarian

Theory and Practice

William O. Scheeren



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School Librarian*

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1

School Libraries in the “Bad Old Days”

WHY COMPUTER TECHNOLOGY IS IMPORTANT

For school librarians entering the field in the past twenty years, there is little or no recollection of the school library without computer technology. This is a fact, but within this library there are widely varying levels of technology hardware, software, and expertise. The use of technology in the school library is a given among the practitioners of today, but the questions of “what,” “how,” and “who” as they relate to school library technology are ones that must be addressed—and if we do not address them in a satisfactory way, the job of the school librarian, and even the existence of the school library as we know it, could be in danger.

Am I trying to alarm school librarians? I am, and I hope that I succeed, because our future as a profession is at stake. One has only to read the newspapers (something that is still important!) and to watch the media portray the ways that people have changed their information-seeking behavior to realize that this is true. The media collectively says that today we are a society founded on information. If that is so—and there really is no reason to doubt that it is—shouldn’t the library, and in our case the school library, be at the very center of this search for information? One would think so, but too often school librarians are presented as being out of the “new” information loop. Recently I was able to hear a member of a local school board say that there really wasn’t any need for a budget for school libraries—or, for that matter, any need for school librarians—because everything the students need as far as information is concerned is available on the Internet for free. For all the power and information the Internet has given us and our students, using the Internet as a replacement for the school library is just wrongheaded.

How do we counter these statements? We become leaders and experts in technology in our school libraries. How many of us have the level of expertise in the technology to be leaders in our schools? Just out of curiosity, how many of us still keep and maintain a hard-copy shelf list because we just do not trust the electronic database not to crash and instantly erase all the information about our collection? Don't be shy—put your hands right up. How many of you know that it would be good for your students to be able to access library materials remotely but don't know how to make the case for such capabilities to your technology coordinator or your administration? If you answered yes to either of the last two questions, you need to take a hard look at your technology skills, at the technology available in your library, and at your current capacity for being a leader in the field of educational technology.

So far, we have addressed the shortcomings in technology and technology expertise that could be disastrous for the school librarian. Am I saying that the role of the school librarian has changed to a point at which we are “information managers,” rather than school librarians? Although a case could be made for this, that is not what I am saying. Rather, I wish to emphasize that if the school librarian does not add technology leadership and technology expertise to the litany of skills he or she now has, then the field will pass librarians by, and we will be less and less relevant in our field and in our schools.

HOW TECHNOLOGY HAS CHANGED THE SCHOOL LIBRARY

How has technology changed the school library and the school librarian? Go back about forty years and consider how the school library typically worked. Forty years ago, the first of the baby boomers were completing high school and moving on to college or into the workforce. In many cases, smaller schools were overwhelmed with more students than they could handle, and the first school consolidations began to take place. The advent of Sputnik in 1957 caused increased emphasis on mathematics and science in American schools, but in some ways schools were much the same in 1969 as they had been 100 years before. Take, for example, the school year. In 1969, as well as today, the school year is based on the farm cycle, with nine months of school and three months off in the summer. The school year was like that in 1869, was like that in 1969, and remains like that today.

In many ways, the school library of 1969 might look very familiar to us. It would have books, magazines, and perhaps some other types of print media. In the late 1960s, there would probably be a nascent audiovisual collection: films, filmstrips, and records, available for teacher use. These

audiovisual materials were the extent of technology in the school library, except for the librarian’s typewriter, which turned out endless catalog cards for filing. Occasionally, the school library was also home to the record players and projectors needed for use of the library’s audiovisual technology.

Physically, the school library would probably closely resemble today’s facility. Some amount of restricted access led into an essentially square room with tables and chairs for students. Book stacks lined the walls and perhaps extended from the wall perpendicularly, if the collection was large enough. Magazines and newspapers were available. In the center of the facility was the charging desk that was the domain of the librarians and their student assistants. And don’t forget one thing: the card catalog, that set of drawers with cards allegedly created to help find books but really created to torture the unwary student or teacher. Who among us can forget those helpful words of the school librarian: “Look it up in the catalog!”

Let’s jump forward forty years to the typical school library of 2009. The room is still square, and the books and book stacks are still there, as are the magazines and newspapers. Perhaps the biggest difference between the school library of 1969 and that of 2009 is the computers you’ll see—and the absence of the card catalog. Still, though, we hear: “Look it up . . .”

What is described above is the usual level of technology available in school libraries. The question then arises: how much is enough technology? and even, for some: how much is too much? If we were to ask our students, they would say you can never have enough technology. Their parents would probably agree, to a point, but would advocate technology that would assist their children’s learning. The school administration and governing body would probably say that whatever technology can be paid for is a sufficient amount. The school librarian might cap technology at the limit of what can be maintained and used.

It is interesting to note that several of the Keith Curry Lance studies showed a similar conclusion, regardless of the state: technology extends the reach of an effective library program, with evidence showing that schools with effective technology programs have more effective library programs. Curry Lance further stated that the best school libraries were integrated into computer networks, and provided remote access to library resources to their students.

LEVELS OF TECHNOLOGY ACCEPTANCE

Kochtanek and Matthews (2002, 7) in their work dealing with technology in all types of libraries, identify four different levels of acceptance of technology among librarians. Although their conclusions relate not just to

school librarians, we can identify those among us at the different levels of acceptance.

The first level of acceptance Kochtanek and Matthews identify as the “bleeding edge.” Librarians in this category are far out ahead of the pack and are eager to implement any new type of library technology application as soon as it is released. Along with the desire to lead, they want state-of-the-art hardware as soon as it is released. School librarians at this bleeding edge of technology are the envy of many of us, because they always seem to have the resources at their disposal to move forward with library technology.

Some school librarians do not envy those at the bleeding edge. These are the school librarians who are generally satisfied with the level of technology in their libraries and have a great deal of trepidation about moving forward. Worse, their students, their parents, and their administration are often comparing them to those at the bleeding edge, to their embarrassment and chagrin.

Being at the bleeding edge of technology is not always an unalloyed positive. The possibility of buying technology that is inefficient or rapidly out of date is a real possibility. Furthermore, there is always technology that promises much and delivers little. As a cautionary tale, we should keep in mind the teaching machines of the 1960s and 1970s. School districts may still have storage areas full of teaching machines, a technology that promised much and delivered little. Many districts were a bit skeptical of the proliferation of computers, asking if they were the second coming of the teaching machines.

The second level of technology acceptance in the school library, according to Kochtanek and Matthews, is the “leading edge.” School libraries in this category are still considered to be leaders in the use of technology, but not to the extent of those at the bleeding edge. Typically, school libraries in this category are eager to move forward with technological innovation but are willing to hang back enough to see how successful these innovations will be. These are the school librarians that are not using beta versions of software or the latest operating systems as soon as they are released, and whose libraries are not demonstration sites for the most advanced library technology applications.

Instead, people on the leading edge carefully evaluate new technology. Once a technology has been proven in the field, they are ready to move. Librarians at the leading edge seldom have a storage area filled with outdated technology that never quite served its purpose or never quite worked right. School librarians at the leading edge are largely supported in their technology initiatives by their administration, because they seldom make foolish purchases, seldom waste funds, and generally keep their school libraries leaders in technology.

The third level of technology acceptance is where the vast majority of school librarians fall, for better or worse. This is the level known as being in the wedge. They are not risk-takers, and are satisfied to be in this wedge area. These school librarians report to their administrators that the level of technology in their libraries is the same as most schools in their area. This response, this approach, could also be called the “safe” approach. The theory is that if you never take a risk, you will never make a mistake. A visitor to a school library in the wedge would certainly see an online catalog and online databases, but a limited number of computers for students. The school librarian is not one of the leaders in technology in the school.

The fourth and final level of technology acceptance is known as the trailing edge. In World War II flying parlance, such librarians would have been known as “tail-end Charlies.” School librarians in this category have to be dragged kicking and screaming to accept any kind of technology in their school libraries. It is not a matter of money, but more the lack of inertia, or the outright unwillingness, to move forward. These are the school librarians who still have their shelf list cards because they think the system may crash, causing all of their data to be lost.

The librarians on the trailing edge always have an excuse for why they haven’t moved forward with library technology. “I only have ____ years until retirement.” “I’m too old to learn all of this technology stuff.” “My administration won’t let me spend any money.” “I still like to hold that book in my hands.” We have all heard these excuses, and each time one is overcome there are others waiting. Librarians at the trailing edge rarely change: they will not move forward with technology, no matter what. So who will be in danger if they do not move forward with technology? It goes without saying that those school librarians in the trailing edge are at risk—as well they should be. And the school librarians in the wedge are at risk, and don’t understand why. As we move into the twenty-first century, it is not enough to be in the crowd as a school librarian. We, as a profession, have to be leaders in technology. We have to provide our students with the highest-quality library services available, and that means being a leader in technology. The technology train for school librarians is leaving the station: if you aren’t on it, you’ll be run over!

THE EVOLUTION OF TECHNOLOGY IN THE SCHOOL LIBRARY

In this section, we outline how new technologies have affected the operation of the school library. Not all these things have happened in all school libraries, and neither have they taken place at the same pace in all school libraries. Furthermore, school libraries have rarely been the leaders in

the implementation of these technologies. Academic libraries, and to a lesser degree public libraries, have generally had that role. Why? Most school libraries are open during the fall and spring semesters, but closed all summer. Consider that the typical school library is almost exclusively curriculum-driven, without the other missions carried out by academic libraries (such as the research agenda of the faculty) and public libraries (meeting the recreational needs of patrons). It has often been easy for school librarians to place less emphasis on technology than have their counterparts in academic and public libraries.

In other cases, the duties of the school librarian have precluded their taking the time to learn and implement technology innovations. This can be a slippery slope on which to embark, but elementary school librarians scheduled to teach every period of the day as prep-time relief for a classroom teacher are severely limited in the time available for even the most mundane library administration tasks.

Circulation Systems

Although technology applications did not begin to appear in school libraries until after 1980, as a general rule, automated circulation systems begin to appear in academic libraries some period before that. Circulation has always been viewed as a repetitive task that some think can be accomplished by nonprofessionals. Academic libraries (and all libraries, for that matter) have viewed the automation of circulation as laborsaving, and a natural outgrowth of using college computer systems.

Circulation was also generally the first library function in the school library to be automated, but it occurred considerably later than in academic libraries. This was so because school libraries rarely had the in-house computer systems and expertise required to accomplish this. For many schools through the mid-1970s, total computing capability was computer time leased—perhaps one or two hours at a time—from a local college or industry to perform business functions. There just was not the expertise or capability to automate the school library's circulation system. That had to wait for the proliferation of microcomputer technology into school libraries.

Security Systems

Many school librarians would not consider security systems to be technology in the most modern sense of the term, but a strong case can be made that a security system is technology. Not only is it technology, but it was the first technology that many school librarians had the opportunity to use. Security systems filled a practical purpose and were approved by school administrations and school boards for one simple reason—they saved

money! As security systems became more prevalent in the 1970s, school librarians, especially those in high schools, found they were typically saving between 80% and 90% in lost book costs. School boards and administrators quickly saw the financial savings and became strong proponents of security systems.

Not all school libraries were designed to take best advantage of security systems. Some aesthetically pleasing features of school libraries, such as multiple entrances and exits and outside access, can make school library security systems less effective, but their ability to reduce book losses continue to make them near “must-haves” in the twenty-first-century school library.

Cataloging, Library Systems, and MARC

In pretechnology days, the cataloging of materials was a major undertaking in the school library. Cataloging was laborious—and, some school librarians with a bent toward cataloging would posit, has its own artistry. Perhaps, but cataloging was often an area that received less than its due share emphasis before technology came to school libraries.

Few veterans in the profession can forget how beneficial it was to receive books from jobbers that included catalog cards. It was not always neat Dewey Decimal Classification System or Library of Congress cataloging, but it fulfilled the primary purpose of cataloging—allowing books to be found on the shelves. Although the best possible cataloging was always the goal, sometimes less than that was acceptable for purposes of getting books into circulation, and allowing them to be found on the shelves.

The advent of the technology that allowed for automated cataloging happened first in the academic arena, for many of the reasons outlined above. Academic libraries generally took advantage of their on-campus computer systems to automate the cataloging function. Furthermore, they had the personnel with the cataloging expertise to make the system work, in contrast to the school library, where even best-case scenarios had perhaps only two librarians to perform all functions in the school library, including library skills instruction. As was the case with automated circulation systems, proliferation had to wait for the widespread use of the personal computer.

Personal Computers

Computers have been with us since the 1940s. Early computers were invented to automate repetitive tasks, such as the formulation of artillery trajectories. The first practical computer that did just this was ENIAC, built at the University of Pennsylvania. These early computers operated using

a combination of vacuum tubes and circuits to perform their calculations. Without going through a lengthy history of the development of the computer, keep in mind the evolution of a device that filled an entire building with less computing power than is contained in today's personal digital assistants (PDAs). As a matter of fact, the United States put men in space with less computing power than an iPod has.

Two developments eventually brought us to the personal computer as we know it. The first was the development of the transistor at Bell Labs in 1947, for which William Shockley, John Bardeen, and Walter Brattain received a Nobel Prize. The second was the development of the silicon chip, which made the personal computer in its present incarnation possible. We are not in the business of trying to determine the most significant inventions in history, but the personal computer would certainly have a high rank. This is equally true for its impact on the school library and the school librarian. Although automation in the school library was possible using mainframes and minicomputers, it was not practical. The personal computer, however, changed that.

As we move forward in our continuum of computer technology in the school library, we can recall the first stand-alone personal computers in a school district. They looked good, but what could be done on them? Many summer workshops were spent writing simple BASIC programs that calculated such things as speeding fines for drivers' education. In those days floppy disks were just that, and we used a paper punch to punch a notch on the disk to make it double-sided, to increase capacity and to save money. For school librarians, the big advance was to be able to use an application such as Appleworks to actually automate some library functions.

One of the early goals of technology, and not just in libraries or businesses, was to create what was optimistically known as a paperless society. This goal was as much a pipe dream as were the expectations of Thomas Watson, chairman of IBM, 1943, regarding the need for computers: "I think there is a world market for maybe five computers" (Strohmeyer). Not only do we not have a paperless society, but the explosion in the amount of information available has geometrically increased the amount of paper used.

The evolution of the personal computer suddenly made it possible for school libraries to automate functions such as circulation, cataloging, and the use of the library catalog. Closely tied to these innovations was the invention of easy-to-use, easy-to-maintain networks. Without these networks, it would not have been possible to provide practical public online catalogs. It was wondrous to use that first library system in which one could see items in nearly real time when they were added to the system, searching

for all the books on a particular subject to see whether they were checked out. We are miles beyond that today, but in our minds, we still should see that school librarian who keeps the shelf list up to date because “the system might go down.”

Audiovisual Equipment and Materials

Through the “bad old days” down to today, the school library has frequently been the home of audiovisual hardware and materials. For many years this meant film projectors, filmstrip projectors, record players, cassette players, and perhaps even videotape equipment. In addition, the school librarian maintained a store of spare parts and bulbs to answer that inevitable call: “This thing won’t work!” A certain level of repair expertise was also part of the job description. Although the media and the hardware have changed over the years, this function is generally still a part of the school librarian’s duties.

Today, instead of film projectors, school librarians distribute DVD players. Computer projectors, located in most classrooms, are now used to stream video available from commercial sources. As we look at different methods of delivery, it may well be that what was formerly available in the school library or in a support facility may be available electronically. This is an area that will bear watching, for it has the potential to significantly change the operation of the school library.

Internet and Electronic Resources

We have discussed the impact that the invention and proliferation of personal computers have had on the school librarian. A logical outgrowth of the technology, and an innovation that has had a profound impact on the school library, is the Internet, along with the use of digital resources. This is one of the easiest areas in which to contrast the past with the present. In the past—certainly prior to 1985—neither the Internet, to any practical degree, nor digital resources, existed.

Prior to the use of the Internet and electronic resources, what was available to students in the school library was simple: books and magazines. Books were located using the card catalog, and students took notes on the information needed—or, if they were fortunate, were able to photocopy material. If they were using an encyclopedia and another student was using the volume needed, they simply had to wait. The use of magazines was also straightforward. A student would search the *Reader’s Guide to Periodical Literature* for articles relating to a certain topic and then determine whether their library had the magazine desired. If not, it was back to the *Reader’s Guide*. While disarmingly simple, the process was little changed since the advent of school libraries.

School librarians recognized early that this was an area that could be significantly improved by technology. One of the earliest attempts to use technology to improve student access to resources came in the form of a product named Info-Trak. This product allowed users to search a microfilm file that was supplied monthly to find magazine articles, and then to view the article on microfiche. It was no longer necessary for the school library to have paper copies of all indexed magazines.

As revolutionary as this was, it was the introduction of online searching using services such as Bibliography Reference Service (BRS) or Dialog that really broadened the availability of resources. These computer-based services were far from easy to use, and searching remained the purview of librarians. In many cases, school librarians were required to take college courses in the searching techniques required to use these databases. The use of BRS and Dialog required the use of a database thesaurus, and the use of the databases required per minute payment. This intermediate step was only a prelude to . . .

. . . the Internet! It is difficult to overestimate the impact and value the Internet has had on information-seeking behavior in the school library. From its earliest days as a terminal-based network using Mosaic to its ubiquitous graphical-user interface, the Internet has significantly changed the ease with which data could be accessed, in ever-increasing amounts. This significant change has not all been for the good. The huge amount of information available on the Internet has made it incumbent on the school librarian to thoroughly and completely teach how to evaluate information. Too often students use search engines using general search terms such as “World War II” or “Shakespeare” and then are flummoxed when the search yields 10 million or more results.

The nature of the Internet as an unmediated network has resulted in large numbers of Web pages with invalid, incorrect, or biased information. Too often our students take this information at face value, saying, in effect, “If it’s on the Internet, it must be true.”

Collateral to the Internet is the use of electronic databases, which use the Internet for access but provide information that is always credible. With training, they allow users to find exactly the information they need. These databases can be general, or extremely specialized. For example, many of the general periodical indexes allow users to access the full text of 2,000+ magazines dating back as far as ten years, or even longer. This stands in stark contrast to the days of the *Reader’s Guide* and hard-copy magazines.

Other databases are very narrow in their coverage. These are specialized databases that are designed specifically for college students; others are specifically for elementary school students. One of the major issues that school

librarians face with relation to electronic databases is their cost. One of the innovations that will be discussed in more detail later in the book is such participatory databases as Wikipedia. Such free databases based on the contributions of users will have an impact on the school library.

Web 2.0

Web 2.0 is a group of social networking applications that have since their inception been the purview of the students rather than the teachers. This seems to be changing as schools and school librarians are adapting such Web 2.0 applications as blogs, wikis, podcasts, and virtual conferencing to educational use. In some ways the most difficult task the school librarian faces when using these applications is convincing parents and school administration that there are educationally viable reasons for using these Web 2.0 applications.

What is the future for school librarians and technology? Only time will tell, but one fact is inescapable: school librarians must be leaders in educational technology if they are to remain viable in the schools of the future.

Chapter 1 is an introduction to the broad scope of technology in the school library. The “bad old days” of the school library without technology were described, and a description of the possibilities of technology in the school library was presented. The point was made that it is important for school librarians to become leaders in technology if they are to retain their relevance. Chapter 2 will be a detailed examination of the technology skills that school librarians must possess to continue being the hub of learning in the school.

RESOURCES

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