Web Sites and Digital Services in Israeli School Libraries: How is a Digital Environment Changing How School Libraries Work?

Snunith Shoham
Department of Information Science, Bar-Ilan University, Israel

Zehava Shemer-Shalman
Librarianship & Information Science Department, Oranim Academic College of Education, Israel

The Internet Age can lead to three possible scenarios for school libraries: status quo, change, or obsolescence. This study examines the ramifications of school library Web sites for the work done by Israeli school libraries and the services they provide. It is based on an analysis of the Internet sites of 78 school libraries in Israel, in-depth interviews with nine librarians in Israel, questionnaires completed by 22 librarians in the United States and other countries, and a review of literature on the subject. The findings of the study suggest that school libraries in Israel are in the status quo phase; however, there is a slight move toward the change scenario in which the library will continue to exist but will offer a different mix of services.

Background

Gunn (2002) states that school libraries can exist in a physical space or in a virtual space or can maintain a hybrid space that is both physical and virtual. In recent years, more school libraries have found themselves unable to ignore the digital Internet environment and have begun to build Internet sites that give expression to their activities. These Internet sites gradually allow the addition of a range of digital services.

D’elia, Jorgensen, Woelfel, and Rodger (2002) claim that the Internet Age can lead to three possible scenarios for libraries. The first is a continuation of the status quo in which the Internet resources complement the library’s own resources, meaning that two suppliers of information exist concurrently (just as there is an industry for movies shown in theaters and a home video industry). Second is the possibility of change, in which libraries continue to exist, but with a revised mission and offering a different mix of services (just as radio changed so that it could continue to exist alongside television). The third scenario is obsolescence. The Internet might diminish the need for libraries to the extent that they disappear (just as horse-drawn coaches did when automobiles became popular).
The construction of Web sites and their proliferation and accessibility was the subject of the study reported here, because one of the most prominent characteristics of change in the information world is the provision of digital services. We asked about the current situation of school libraries and how the digital environment is changing how school libraries work.

The importance of the digital services provided by the school library Web sites is increasing, because many students prefer using Internet resources for their studies. In a survey conducted in 2001 in the United States, 94% of students aged 12-17 who had access to the Internet reported that they used it for school research (Baumbach, Brewer, & Renfroe, 2004). The Pew Internet & American Life Project study (Lenhart, Madden, & Hitlin, 2005) reported that in 2005 nearly 90% of all teenagers in the US were Internet users and that half had broadband connections. In 2007 almost 28% of the online teenagers in the US had created their own blogs (Lenhart, Madden, Macgill, & Smith, 2008), and approximately 55% of them had a profile on one of the online social networks.

**Literature Review**

**Content and Services of School Library Web Sites**

The establishment of school library Web sites opens many possibilities for school libraries. In addition to providing information about the library and its activities, Web sites make it possible to establish digital libraries. However, there is no agreed-on definition of what a digital library should contain. The simplest digital libraries are collections of links to sources of information in a particular field. More complex digital libraries house information sources (generally on a specific subject or directed toward a particular group of patrons) that have been digitized, along with the addition of tools to facilitate access. An additional stage in the development of digital libraries is to consider them not merely a storehouse of information, but also as a tool that can aid users with the processes of asking questions, gathering information, organizing information, analyzing information, and answering questions (Borgman et. al., 2000).

The range of digital services that a digital library can offer is virtually limitless. Virtual libraries provide immediate access to a range of resources not available in physical collections (Gunn, 2002). Such services might include links to Web resources; online tutorials; electronic databases; electronic reference sources; virtual field trips (e.g., museums, zoos, historical places); collaborative online learning using e-mail, blogs, and discussion forums with authorities in the field; online assistance, including technical support, peer tutoring, and electronic reference material; space for sharing such as virtual galleries of students' work; and online newspapers (Lamb & Callison, 2005). Madris and Payo (2007), dealing with science materials, also add virtual laboratories, real-time data, simulations, research reports, materials addressing physical accessibility, and bilingual content.

Diaz (1998) outlines a number of roles that the library Web site can fulfill.
1. It can serve as the library’s workstation;
2. It is a way of making the library’s internal resources or products accessible;
3. It can become an agent for archiving and retaining transient information from other sites;
4. It is both a window to and a component of the Web at large;
5. It can serve as a communication tool for the library and its users: not only students, but also parents, teachers, and administrators.

Braxton’s (2004) list for an effective Web site includes an introduction to and information about the school; access to materials that help parents understand how their children develop and learn; a virtual staffroom; support for the implementation and delivery of the classroom curriculum; access to a virtual library of selected online resources; and opportunities for students to participate in national and international online learning projects.

Clyde (2000) mentioned that a school library Web site also could:
1. Create a library without walls and make information accessible 24/7;
2. Serve as an electronic brochure that describes activities of the school and the library media center;
3. Provide links to the school’s online catalog and to the catalogs of other libraries too;
4. Support the curriculum with links to homework help;
5. Showcase students’ work.

Possible additions to these lists include:
1. Links to Internet search engines;
2. Book reviews by students and recommended reading lists;
3. A guide on how to select the best information from the Internet;
4. Basic Internet tutorials (Lamb & Callison, 2005);

School library Web sites can also play a role in encouraging reading by featuring new books, highlighting authors of children’s and young-adult literature, providing links to quality literacy sites, and descriptions of or reports on reading programs (Baumbach et al., 2004).

It seems that when the first Web sites were built for school libraries, the librarians were vague about the reason or purpose for the sites (Clyde, 2004). There was confusion about the concept of a home page, and the librarians were usually uncertain about what they wished to do with the site (Lopez, 1998, cited in Clyde). Valenza (2005/2006) describes new virtual school libraries as “multi-page, online resources devoted to the needs of their specific learning communities. From a home page, users access search engines, databases, references, and general library and school information.” On the most sophisticated sites, Web 2.0 functions have also been introduced; some school libraries have begun to use blogs and podcasts (Harris, 2006; McPherson, 2006).

Content Analysis of Web Sites
Clyde (1996, 2000, 2002) conducted a series of studies in which she analyzed the content of school library Web sites and examined their development. Clyde’s research shows that over time, the sites became more sophisticated, grew to offer an increasing number of pages, provided additional resources, and showed consistent improvement in graphic design.
Based on an analysis of 32 school library Web sites in 2002, Clyde (2004) found that the main features on school library Web sites (apart from information on the libraries) were links to selected resources on the Internet (69% of the 32 sites studied), links to online indexes (63%), links to Internet search engines (56%), links to other libraries’ catalogs (53%), links to online encyclopedias and reference works (50%), links to the school library OPAC (44%), links to Internet resources for teachers (38%), information on research skills (28%), and book reviews and books lists (22%). However, it should be remembered that Clyde’s sample size was small and included only 32 sites.

The research reported here attempted to examine not only the content of Web sites as Clyde (2004) did, but also the implications of the sites for the functioning of the libraries, librarians, and patrons. Recent changes occurring in the use of academic library services are largely the result of the digital services they now offer. For example, academic libraries have witnessed a reduced use of library physical facilities. A study for the Digital Library Federation revealed that undergraduates spent one third of their study time in the library and faculty members only 10% (Falk, 2003). No data are available on changes in school libraries.

In the literature that analyzes Web sites, many studies focus on the structure and characteristics of sites. For example, Wilkinson, Bennett, and Oliver (1997) offer a long list of questions to ask about a Web site in order to pinpoint characteristics that indicate the accuracy of information, ease of use, and aesthetic qualities of Internet material. Many articles focus on guidance and instructions for effective Web site design. However, no research has been published on the implications of the library Web sites for the functioning of the school library, and this is the theme of the research reported here.

Methodology

The study used both qualitative research methods (content analysis and in-depth interviews) and quantitative research methods (questionnaires). The study was conducted in five phases.

Content analysis. The content of the Web sites maintained by 78 school libraries in Israel was analyzed to gain insight into the changes in the services provided by school libraries. The services provided through the site were examined, as well as the organization of material on the site, its timeliness, and links. In this study, we employ descriptive content analysis (Babbie, 2007).

We were aware that Web site research had been plagued by difficulty in establishing a population and sampling framework (Neuendorf, 2002). For this study, 78 school libraries with content-rich, active Web sites were examined. Libraries with single-page sites were not included. The libraries selected were geographically distributed and located in towns and cities of various types, because our purpose was not only to report and describe the situation of library Web sites in general, but also to identify trends and changes in how libraries functioned in the context of and as influenced by the Web sites.

In-depth telephone interviews were conducted with nine Israeli librarians whose libraries had especially rich and active Web sites. They were asked about their perception of the evolving nature of libraries in the school environment and the purposes of innovative services.
Questionnaires were completed by 10 school librarians in the US. The librarians were also asked about the activity of their libraries and their perception of the evolving nature of libraries in the school environment and the purposes of innovative services. Questionnaires also were completed by 12 librarians from other countries that were represented at the International Association for School Librarianship Conference in Portugal. The results of other studies were also analyzed in order to obtain a broader picture of the situation.

**Research Tools**

Content analysis was used to examine the content of the school library Web sites. The criteria for analyzing the sites were developed while browsing through the initial selection of sites. The list of the criteria is given below in the section on Findings.

The questions for the interviews with librarians were based on the content analysis of the Web sites. We interviewed nine librarians whose libraries had especially active and sophisticated Web sites. Their responses were transcribed and analyzed. The in-depth telephone interviews with nine libraries clarified the level of their involvement in constructing the Web sites and the areas of activity included on the sites. They were also asked about their perspectives on how adding the Web site had influenced the role and work of the librarian, how students used library services, and the extent of their contact with the school’s teachers.

The questionnaires completed by US and other non-Israeli librarians consisted of 13 closed-ended questions, but also included an opportunity for adding additional comments. The questions about the librarians’ perspectives on the purposes of school library Web sites requested information about the services provided by the Web site, the teachers’ involvement in the site, and the changes that had occurred in the library, in the librarian’s opinion, as a result of the Web site.

**Findings**

Not all school libraries have Web sites. In Israel approximately 20% of school libraries have Web sites, most of them built in the past two to five years. In other countries also not all school libraries have Web sites. For example, in 2005 fewer than 50% of public schools in North Carolina, US had school library Web sites (Hunsinger, 2005). It is important to remember that the first school library sites were created as recently as 1994 (Clyde, 2004).

The interviews with the Israeli school librarians showed that in 50% of the cases, the initiative to build Web sites came from the librarians themselves. In the remaining cases, the initiative came from school administration, IT (information technology) managers (in small schools, the IT professional is frequently the computer teacher), or from the headquarters of the educational network when the school was part of a national network.

The Web sites themselves were set up either by the person responsible for the school’s IT systems or by an external company that provides IT services. The IT professional provided technical support, whereas the librarian was responsible for the content of the site. The interviews also showed that many librarians had taken courses in Web design.
Content analysis of 78 Israeli school library Web sites, the interviews with nine Israeli librarians, and the questionnaires completed by 22 librarians in other countries revealed the following categories or areas of activities: (a) curriculum support, (b) enrichment materials on additional educational subjects, (c) provision of general information, (d) promotion of reading, (e) information literacy tools, (f) electronic reference, (g) resources for teachers, and (h) information on the library.

**Curriculum Support**
It is a given that supporting learning is the ultimate role of a school library (almost all the librarians said that supporting the curriculum was the main goal for their library’s site), and the Web sites reflected this goal. Almost all the international library sites and many of the Israeli sites offered links to online databases (51%), search engines and indexes (49%), bibliographies (31%), and e-journals (22%). Some also offered links to sites offering paid content (14%).

Research on Web sites in the US showed that a larger percentage of the sites offered external links. Jurkowski (2004) found links to search engines in 71% of the 34 school libraries’ Web sites studied in Missouri and links to online databases on 65% of the sites. He found that 65% also had reference links. Baumbach (2005) found that 68% of the 100 school library Web sites that she analyzed in the southeastern US had links to search engines, and 67% had links to online databases. Hunsinger (2005) found links to search engines on 45% of the 20 North Carolina sites that she studied and links to online databases on 70%. A similar situation was reflected in Clyde’s (2002) content analysis of 32 Web sites of international school libraries: 56% provided links to Internet search engines.

The results from our international questionnaires were similar. Almost all specified that the school libraries’ sites included links to information sources that were relevant to the school curriculum.

**Enrichment Materials on Additional Educational Subjects**
In this category, links were provided to government sites, particularly to the Ministry of Education (32%); to academic institutions (18%); to library-related Web sites such as the LC catalog (17%); to public libraries such as the Tel Aviv municipal library (the largest public library in Israel with 20 branches); to the National Library, sites that provide activities to encourage reading, and the local, municipal library (10%).

The results from our international survey also revealed links to the catalogs of other libraries.

**Provision of General Information**
General information was provided on the Web sites of 32% of Israeli school libraries. These included links to the Israel Airports Authority, Bezeq (the Israeli telephone operator), Yellow Pages, Israel Postal Authority, Egged Bus Company, Yad Vashem (Holocaust Martyrs’ and Heroes’ Remembrance Museum), Israeli maps, games, Israel Railways, Israel National Authority Road Safety, newspapers, television stations, Israel Meteorological Service, news, Israel Postal Bank, migrating birds, astronomy, and so forth.
Responses to the international survey questionnaires showed that the school library Web sites of more than half of the respondents included referrals to useful and popular information for enrichment purposes.

**Promoting Reading**

Many of the pages on the Israeli school libraries’ sites dealt with the important subject of encouraging schoolchildren to read (60%). In this context, we found a range of diverse activities.

1. The Book Parade project, which issues a list of recommended books each year (a list of selected books is published by the Ministry of Education; children are asked to read the books and then vote on those they liked best: the project includes a reading competition and ranking of the books by varied schools;
2. Book reviews by students;
3. Book reviews by librarians;
4. Links to reading lists and quality literacy sites;
5. Classes dedicated to encouraging reading;
6. Plays about the books;
7. Works written by students;
8. Quizzes and other activities;
9. Classroom activities; and
10. Meetings with authors.

Of the Web sites studied, 13% had links to authors’ sites, 27% had links to bookstores, and 37% provided reviews of articles, books, or new databases.

Similar results have been found in other studies. Of 100 school library Web sites analyzed in the southeastern US, Baumbach (2005) found that 62% had some type of feature focusing on reading, and 18% of the sites had book reviews. Hunsinger (2005) found reading encouragement on 80% of the studied sites, but only 10% had book reviews. Furthermore, 45% had links to Web sites about reading, and 20% had links to authors.

The school librarians spoke in their interviews about the reading encouragement activities as a means of marketing and advertising the library to the students and teachers. However, it is interesting to note that both the Israeli and US sites made almost no use of the sites to show the library’s new acquisitions.

Our international survey revealed that 68% of the respondents stated that their libraries used the sites for encouraging reading. Among the activities cited were lists of new and suggested books to read, book reviews, book fairs, information about reading contests, links to authors’ sites, authors’ profiles, summer reading list, and reading clubs.

**Information Literacy Tools**

In 22% of the Israeli school library Web sites studied, the sites provided training or information about training on how to use the library well. Of these, 18% provided information about the Dewey Decimal System, which is used to classify materials in the library. However, only 9% provided information on how to write research papers of gave guidelines for citations.
The Israeli respondents noted that in addition to the library’s traditional orientation provided on how to use information sources, there was also a need to provide training on how to locate information on the Internet and how the school library could facilitate remote searches. These responses are consistent with Valenza’s (2005/2006) research that revealed troubling data about students’ ability to navigate the Internet to find the resources they needed for academic research.

US libraries dedicated much more space to information literacy. Baumbach (2005) and Hunsinger (2005) found that 49% and 70% respectively of sites in their studies provided tools for information literacy. Our international survey found that 77% provided guidance on writing a term paper or conducting an individual study, and 86% provided a citation manual or instructions.

**Electronic Reference**

Close to one third of the Israeli school library Web sites provided electronic reference service, whereas almost all the international surveyed librarians stated that they provided this service. Most frequently this service was provided via e-mail sent to the librarian. In rare instances it was done through the library forum.

Electronic reference services should be an important and integral aspect of the online services that the sites can provide to students. Despite this, not all the sites published the e-mail addresses of the librarians.

The librarians interviewed noted that because it has become possible to search for material independently even from home and e-mail requests are possible, they received fewer face-to-face requests from students. This streamlined the process for students and saved time because they did not have to line up to see the librarian. However, it did not reduce the librarians’ workload, because it required them to prepare the materials, select links, and then provide the students with appropriate training.

**Resources for Teachers**

Only 30% of the Israeli school library sites provided links to Internet resources for teachers. These included, for example, further education courses on reading encouragement, ideas for work following reading, teachers’ unions, further education funds, Hebrew teachers’ forum, a pedagogical database, and a newsletter for literature teachers.

Clyde (2002) reported that 37.5% of the 32 international sites she analyzed provided resources for teachers. Jurkowski (2004) reported that 41% did so, and Hunsinger (2005) reported that 20% did so.

**Information on the Library**

Most of the Israeli school library sites analyzed were taking advantage of the Internet to provide general information on library activity, and 25% had also uploaded their policies and procedures. The findings of studies on library sites in the US (Baumbach, 2005; Hunsinger, 2005; Jurkowski, 2004) were different. Between 20% and 40% displayed their policies and procedures, whereas 15%-34% presented their mission statements and 12%-40% published library news.
Few of the Israeli libraries allowed online access to their catalog (15%). However, some schools belonged to educational networks, and these provided access to their network’s union catalog.

Interestingly, not all US school libraries allowed online access to an OPAC (20%, Hunsinger, 2005; 35%, Jurkowski, 2004; 41%, Baumbach, 2005). This is in contrast to college and university libraries, where the most obvious feature is online access to the OPAC (Still, 2001).

One obvious feature of the Israeli school library sites was the emphasis on support of the educational system and focus on the curriculum. In contrast, most were closed to the additional possibilities offered by the Internet. Nearly 87% of the Web sites did not allow students to use private e-mail in the library. Furthermore, neither did they take advantage of the opportunity to warn students about the dangers of the Internet: Only 18% contained warnings to students.

Teachers’ and Students’ Involvement
An interesting trend revealed in the findings was the involvement of teachers and students in preparing the site content. The need to receive assistance and learn about their knowledge and needs (as they are the end-users) increases their involvement with the library beyond the level common in a traditional library. In many schools (in Israel and other countries), the teachers prepared and updated the links that were relevant to the subjects they taught.

This appears to be a global phenomenon: half of the librarians from other countries stated that the teachers in their schools were involved with site content related to the subject matter that they taught. They helped to update subject content, were involved in projects to encourage reading, took responsibility for links in the their subject areas, were involved in indexing and preparing subject bibliographies, and provided the librarians with information about changes in the curriculum so that links could be updated.

It was further established in the interviews with the Israeli school librarians that one of the most salient changes in library activity was that students could now search for material from home. This process had led to greater student independence and less dependence on the librarian to search for them. However, this was a process, and students still required training on how to use the new tools. In addition, 18% of the international librarians stated that the new library Web site had opened a dialogue with the students’ parents.

Discussion
We begin with the research question: How is the digital environment changing the way school libraries work? We can conclude that having a Web site opens doors to new opportunities for the school library.

Library Material
Setting up Web sites for school libraries leads to an increase in the knowledge resources available to students and teachers. Access is available around the clock and is not limited to the library’s work hours, which are relatively short in Israel. The site can provide access to a wide range of materials.
1. Study materials: Lessons, lectures, bibliographies, e-journals, reference materials, links to databases, catalogs belonging to the library, other libraries in the network and also to public and academic libraries, or to important libraries around the world, links to government sites, research centers, and so forth.
2. Enrichment materials on general educational subjects, for example, holidays, Memorial Day, Holocaust Memorial Day, and so forth.
3. General information: On general subjects not related to the library (train schedules, weather, movies).

Accessibility to online reference sources led to less purchasing of printed reference books. Instead, libraries now offer additional computer work stations

**Improving and Upgrading of Services**

Certain services were upgraded due to the Web site.
1. Online training: How to use the library, locate information, and understand the classification system used to organize shelves (e.g., Dewey). This information is on the site and is accessible to students at all times.
2. Providing information literacy:
   a. Guidelines on writing a bibliography;
   b. Guidelines for writing papers (introduction, contents, chapter headings);
   c. Basic guidelines for typing papers (formatting titles, cover pages, selecting fonts, adding pictures, tables).
3. Encouraging reading: Providing information about books and involving students in reading encouragement programs.
4. Electronic reference: Allowing access from home and use of e-mail and various forums.

**Involvement of Teachers**

Once Web sites are set up, there is a trend toward increased teacher involvement. Their input is required on issues related to their areas of specialty, and in many schools they decide which links will appear on the site for their relevant fields. This follows years where their lack of involvement in the library was a serious problem that prevented the library from being fully integrated into the school system.

**The Students**

With respect to the students, we see interesting changes in patterns of behavior:
1. More cooperation between students and the library (generally through a library committee), involvement in site content, and sometimes even in technical maintenance of the site.
2. More independence: As they gradually learn to look for material alone, often from home (for those who have computers and Internet), they search by themselves and begin to use electronic reference services. This is a major change in their relationship with the library. In past years, student preferred going directly to the librarian for any information they needed. Now when they approach the librarian, they are much more focused.
3. Exposure to new channels of communication with librarians and even with their student peers: e-mail and forums.
**Librarians**

The number of students visiting the library seems to have dropped, and this reduces the workload with students on reference and searches. To balance this, there are now new tasks: creating a Web site for the library or cooperating with a third party on design of the site, deciding on a policy that will influence the nature of the site and variety of areas and content included, selection of the materials required by users, processing the information for various types of access via the site, and the computerized tools: online when possible, training students how to use online databases, and, of course, updating the site regularly. For all this, the librarians must understand the online medium, study, and acquire computer skills.

**Parents**

The site allows the library to provide parents with information and to enter into dialogue with them. The result is an effective channel of communication with parents. Parents can use the site to find out what is happening on in the library, what projects are being offered, and what new books have arrived or are recommended.

**Conclusions**

In all the areas where we see changes, one of the most obvious is the emphasis placed by librarians on using the school library Web site to expand reading encouragement activity. Odd as it may seem, this means that in the Internet era, we see emphasis on attempts to foster reading books that take advantage of both the library site and the entire Web.

However, school Web sites are relatively new, and they vary. In many cases, the main effort still focuses on trying to provide traditional services, although with additions that the new Internet medium allows.

This phenomenon is typical of the introduction of IT systems in many areas. The first thought is to continue to offer the previous and/or traditional activities, but to use the computer so that this can be accomplished more effectively for less effort. Additional small features can also be added. This is evidenced by a total ban on using the site for e-mail, games, or chats.

Not all schools have sites, and even in those with Web sites the new options available remain largely unused. There are many reasons for this, including budgetary and technical limitations. The library computers are not always current. Some schools created their Web sites using ready-made templates, and some do not have room for subjects relating to the library itself. Not all students have Internet access at home. Another issue that must be taken into account is the current lack of training: some librarians are not computer-literate and do not know how to create a Web site, and others are unaware of the potential that the current site offers.

The content of the pages on the school library sites should be the flagship of the library. The existence of these Web pages is a tangible expression of change, although they are still insufficient. To maintain relevance, the 21st-century school library must expand and reinterpret library service (Valenza, 2005/2006). Furthermore, Web 2.0 opens a wide range of sophisticated technological tools for use on school library Web sites.
Regarding the current situation of school libraries, we can conclude that school libraries in Israel are in the status quo phase. However, there is a slight move toward the change scenario in which the library will continue to exist, but will offer a different mix of services.

Acknowledgments

We thank Professor Marjorie Rosenthal and student Dan Josfan for their help in collecting the data.

References


Author Notes

Snunith Shoham has a doctorate from the University of California, Berkeley, School of Library and Information Studies. She was the Chair of the Department of Information Science, Bar Ilan University, Israel from 1998 to 2005. She is the author of books *Organizational Adaptation by Public Libraries* (Greenwood Press, 1984) and *Classification and Browsing: The Conjunction of Readers and Documents* (Sussex Academic Press, 2000) as well as many articles on school librarianship, public libraries, knowledge organization, and information-gathering behavior.

Zehava Shemer-Shalman has a doctorate from the Bar Ilan University, Department of Information Science and a master’s from the Hebrew University of Jerusalem, School of Librarianship and Information, Israel. She is Head of the Librarianship and Information Science Department, Oranim Academic College of Education, Tivon, Israel. She also teaches at the Haifa University, Librarianship and Information Studies. For over 20 years she supervised and developed school libraries at ORT Educational Network in Israel.