3-1-2005

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The K-12 Cybrary at Work
by Lesley Farmer

Now that "everything is on the Net," what are the roles of K-12 libraries and librarians in a digital-age learning environment? Are site collections still needed? Are site-based librarian professionals still a cost-effective human resource? How will the growth of electronic-based education impact school library programs of the future, say by 2015?

The main difference between current educational programs and projected models of electronic-based education (here termed "e-education") by 2015 is probably the existence of an infrastructure that shapes content delivery systems, ensures educators' continued competency and accountability, and enables the entire educational community to congregate and interact in real time and from any location. Yet as e-education expands from higher education to K-12 venues, a new tension between standardization and customization has emerged. With the advent of statewide content standards and frameworks, standardized testing, student record databases, Internet infrastructure, and digital libraries, future e-education programs will require much greater coordination than before. In order to serve the distinctive needs of their constituencies, such programs will need to find the right combination of standardized and customized resources and services, taking advantage of resource sharing as well as specialized knowledge.

Because of their training in educational practice, school library media specialists (SLMSs) work with classroom instructors and learners throughout the educational process: from curriculum development to unit/module/lesson plan development and delivery, integrating assessment at each step. As SLMSs—increasingly called K-12 cybrarians because of their technological role—demonstrate their own technological and online education competency, they serve as viable education partners in a digital environment. Yet in the discussion of K-12 Internet-enhanced education, the issue of support personnel, such as SLMSs, has been largely overlooked. Particularly since SLMSs work with entire school communities and often serve as vanguards in integrating educational technology, their active participation throughout the process of planning and implementing future e-education initiatives is key (*Proceedings of the White House Conference on School Libraries* 2002).

As government agencies rethink financial allocations for K-12 staffing and service patterns, educators and administrators need to pursue more effective and efficient library program models. Electronically enhanced education may function as a "hook" to revamp school library services and extend the role of the SLMS/K-12 cybrarian. In what follows, I explain and illustrate how these two roles currently work, and in so doing, look ahead to how these roles should be expanded to meet the needs of future e-education programs.

Today's SLMSs

For the sake of clarity, I will use the term "K-12 cybrarians" to designate those librarians who provide e-library resources and services, often at a distance, and the term "SLMSs" to refer to site-based K-12 librarians who focus on customized needs in collaboration with school and local communities, and who can act as liaisons between local library programs and cyberlibrary services. The core mission of SLMSs and K-12 cybrarians is to help students and teachers become effective users of information and ideas (American Association of School Librarians 1998). To that end, these librarians play three important roles: program administrator, information specialist, and teacher.

As program administrators, SLMSs make sure that library media programs support a school's mission as well as implement a library's vision. In this role, SLMSs plan strategically to incorporate appropriate technologies,

such as budgeting for access to subscription databases. They ensure that library staff members are trained to carry out technological tasks such as installing software, updating Web sites, maintaining automated circulation systems, and troubleshooting common application problems. They also configure library facilities to incorporate hardware and Internet connectivity efficiently.

As information specialists, SLMSs evaluate, select, organize, and provide access (both physical and intellectual) to materials and information. School libraries not only maintain print and nonprint collections, but also regularly incorporate electronic resources and extend their information base by emphasizing *accessing* as much as *owning* digital information. For many students, the ability to find information is no longer at issue; the Internet provides access to all kinds of information, false and true, from around the world. Instead, SLMSs assist students in evaluating sources and using relevant, accurate information.

SLMSs also provide individual and group help in locating and evaluating high-quality resources through just-in-time reference services, including online digital reference help. To help K-12 students outside of normal school operating hours, the American Association of School Librarians (AASL) initiated KidsConnect, an e-mail-based national reference service, in 1996. Since that time, state and regional online services have replaced a national model so students can get academic help that is informed by state standards.

As teachers, SLMSs and K-12 cybrarians are rapidly becoming information "packagers" and producers. They extract and synthesize key research findings, create Webliographies and library portals to digital and print information, produce teaching and learning aids, and offer educational programs in collaboration with a variety of education providers. Indeed, teachers and students cannot take maximum advantage of the wide variety of information resources or fully experience the joy of lifelong learning without SLMSs.

Resource Sharing to 2015

Increasingly, educators and administrators are sharing and coordinating valuable library resources at local, regional, and national levels, often through central library services, to provide cost-effective access for entire learning communities. The following examples indicate several trends that in turn point toward the future role of K-12 cybrarians:

- Individual libraries and higher-education consortia now coordinate educational Web sites and learning objects organized by subject; examples include the University of California Riverside's Infomine, the Lakewood (Ohio) Public Library, and Merlot. The Internet Public Library also provides access to resources that address students' personal and recreational needs, indexed for various audiences.
- Digital libraries are adding Web-based tutorials, multimedia presentations, and learning activities, such as simulations, WebQuests, and virtual trips, to their resources. Georgia's project GALILEO, for instance, trains both students and librarians to locate, evaluate, and use electronic resources.
- Almost all state libraries now provide statewide access to K-12 digital educational resources, including databases and union library catalogs; California and North Carolina provide electronic databases for their public universities, though not for K-12 resources. This trend sometimes has started with state initiatives underwritten by grants and other times has grown out of public library consortium efforts.
- The statewide California Learning Resource Network links nonprint and Web-based resources to state K-12 content standards. Additionally, the California School Library Association is developing subject- and age-specific Webliographies of online resources, intending to designate K-12 cybrarians from around the state to maintain those lists.
- On a regional basis, the Los Angeles Office of Education offers TEAMS distance learning opportunities, supporting this effort with a Web portal of indexed online resources.
- MarcoPolo, a national nonprofit endeavor, gathers and organizes online content for K-12 classrooms, including lesson plans; states such as Kentucky are already using this vehicle to coordinate instructional content.

By 2015, educators and administrators should be able to coordinate and optimize these disparate initiatives to take advantage of national—and international—resource sharing balanced by local needs. Already, the Institute of Museum and Library Services has begun an initiative on 21st-century learners with a focus on collaborative, community-wide education infrastructure. It recommends supporting national digitization projects, such as Creative Commons, to facilitate the organization of a federated repository system to collect, organize, and disseminate all forms of documentation.

To access all these resources, international consortia such as the IMS Global Learning Consortium and the International Committee for Documentation are developing standardized formats (e.g., the conceptual reference model) and controlled vocabularies to facilitate interoperable databases and overall learning environments. K-12 cybrarians will serve as part of this international librarian team to ensure equitable access by K-12 educational communities around the world. Users will be able to find the information they need by standard, format, concept, reading level, developmental level, and other factors.

Balancing this international coordination of resources, district K-12 cybrarians can collaborate with other local public and special librarians to focus on local or ephemeral sources of information such as historic landmarks, school alumni, town happenings, and nearby agencies; their portals can combine national and local links seamlessly for their learning communities. Other "packages" of information might consist of three-dimensional DVDs, interactive broadcasts, picture phone messages, referral expert systems, or even print publications. The key will be to match information with anticipated use, and to modify those packages based on their actual application; this kind of analysis should be routine by 2015. Presently, public library systems have taken the lead in this endeavor; the Sunnyvale (California) Public Library, for instance, provides online local referral information and physical access to video oral histories. School librarians can also provide this same kind of oral history, at least within their own school settings.

Instruction to 2015

Just as K-12 library resource collections may develop into a two-tiered structure by 2015, so, too, may the service aspect of school librarianship evolve into a two-tiered format to take advantage of scale and yet provide individualization.

Thus, for national- and state-based e-education programs, a cadre of subject- and grade level–specialized cybrarians could work with their content teacher counterparts to ensure that appropriate resources are available for K-12 student e-learners. Even current online high school enrichment programs such as the University of California College Prep Online include the input of a K-12 cybrarian. Not only can K-12 cybrarians locate, evaluate, and organize materials, but with improved data archiving and statistical tools, they would also be able to assess students' success with those sources in order to fine-tune selection and delivery methods.

K-12 cybrarians can also serve as online reference homework experts to help students upon need, building on present 24/7 reference services. For instance, 24/7 Reference is now expanding its service to K-12 students, training SLMSs to conduct online interviews and developing "scripts" to help other types of librarians give better service to youth.

These online venues also provide rich opportunities for information literacy instruction as K-12 cybrarians—or automated assessment tools—diagnose student research process success. Either source can redirect student research strategies and suggest more effective approaches. Advantages of the human interface include the personal touch, as well as the possibility for follow-up discussion or assistance with related questions. Either method, though, could merge with existing statewide student record systems, sending results to students' instructional teams, including local SLMSs, in order to leverage the e-learning situation.

As e-education evolves, some students will access their instruction primarily via technology: migrants, students with special needs, students with time constraints (e.g., athletically gifted students, full-time workers,

teenage parents with several children, incarcerated juveniles). A model of a stable instructional team of online teachers and cybrarians with whom students could work for several years (e.g., primary grades, middle school, and high school) would facilitate interaction and optimize developmentally appropriate learning. As these educational teams become personally acquainted with students, they could provide them with better, more individualized service. One example of this educational model—the Los Angeles County Office of Education's distance learning initiative for migrant children—included a K-12 cybrarian who gave stable, personal attention to students regardless of where they moved. Unfortunately, with budget cuts, that interactive service was eliminated. Nevertheless, the program established an admirable model for future e-education efforts, one in which cybrarians and e-teachers could work with students to provide the most effective learning activities.

To further facilitate a two-tiered structure for future e-education, national or state teachers and cybrarians can develop standards-based learning activities supported by a rich collection of electronic resources. On the local level, teachers and SLMSs can work as a team to focus on individual student diagnosis and interventions.

Thus, for face-to-face schooling, the SLMS should serve on the instructional team as a cross-curricular resource specialist and literacy partner. The SLMS can serve as a generalist, focusing on students' personal and developmental needs, rather like a personal trainer or family physician. The local SLMS can also help provide drop-in e-learning students with the technology and related skills needed to succeed in distance education situations. When students need more in-depth or specialized library service, the SLMS can refer them to a district or regional subject specialist K-12 cybrarian. In effect, this tiered system would provide optimal service through its commitment to understanding each student and to offering varying degrees of educational expertise.

The 2015 Cybrary

Will the school library still exist in 2015? Probably. Having a centralized collection of resources, both material and human, remains a cost-effective way to serve the face-to-face needs of entire school communities. Will it look the same as today's school library? Perhaps. It may well be part of a school information commons, linked with administration, counseling, and career and health services. It may well share a facility with community services. It might be more casual, or more streamlined. It *should* be more differentiated to provide more customized service with an emphasis on interaction between learners and ideas.

In any case, SLMSs and K-12 cybrarians will need to keep current in technology and e-learning and train their peers through publications, meetings, and online interaction. Most importantly, they will need to collaborate with other constituencies and demonstrate their impact on student achievement. With a positive track record of knowledgeable collaboration and impact on student learning backed by solid data, SLMSs and K-12 cybrarians can build a credible case for financial backing, leveraging a strong foundation of broad collegial support. Particularly as they participate in site councils and curriculum development committees, these professionals can work with administrators to build a cybrary program that is well-integrated throughout the curriculum and that facilitates the entire e-education environment.

One thing is certain: Tomorrow's students will be bombarded with information. They will need help discerning what is true and what is relevant. They will also need to figure out what to do with the information they choose. Uniquely positioned to gather and organize high-quality information, educational information professionals, in their capacities as SLMSs and cybrarians, will continue to act as critical partners in helping students to access and produce knowledge in a digital age.

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