



## FIND YOUR PATH!

### Making Research Easy with Virtual Libraries

#### The Problem with the Web

Today's students see the Web as their major information source. But students face challenges finding information in this manner. No longer limited to the traditional collections physically available in their school libraries or to the content of their textbooks, student researchers confront an explosion of information choices through a trillion-page Web. This Web was created primarily for adults and is largely devoid of professional indexing and search standardization. So, it is only natural for users of any age to be baffled by the multiplicity of search choices offered by the Web—the online databases, subject directories, portals, and millions of pages, most notably the subscription databases that schools and libraries invest in so heavily. As the volume and variety of digital information expands, so does an urgent, corresponding need to bring order to this glut of information.

#### The Problems with Learners

Though popular literature attributes near-guru status to young people as technology users, research reveals troubling data relating to students' information technology capabilities. Learners often misunderstand the ways in which information is organized. Though they have high expectations for how quickly they receive information, students have only limited understandings of the workings of search environments. And despite common feelings of self-efficacy, they often approach their work with little persistence or flexibility. Learners need strategies to help guide them through the complicated, often overwhelming processes of accessing and using information. Students need to answer these questions:

- Which search tools should they use for a particular information task: search engines, subject directories, subject portals, or subscription databases?

- Which search strategies should they employ within each chosen search tool?
- How should they evaluate their overwhelming lists of results?
- What does a quality information source look like?
- How should they document the varying types of sources they select?

#### Attacking Two Processes with One Solution

If students are going to be effective seekers and users of information, they need two types of guidance: **information skills critical for the twenty-first century, and customized, appropriate, and well-designed online learning environments.**

Virtual libraries do the job on both fronts. More than ever, librarians and other educators are needed to intervene with customized, user-centered interfaces that create order while they offer instruction. If today's students are truly "born with the chip," our school libraries are expected to achieve its mission for learners both physically and virtually. It is logical that the virtual school library will have as broad an influence as its physical counterpart, expanding and reinterpreting library services that meet young users' information needs where they live, play, and work. Virtual libraries allow teachers and librarians to apply their traditional skills for collection development, collaboration, reference, and instruction in powerful new ways.

The effective virtual school library offers 24/7 instruction, "just-for-me" learning opportunities, and customized resources. As distance learning becomes increasingly viable as an option for enhancing K–12 education, the virtual library must serve those learners who may never enter the library facility. Virtual libraries let librarians and educators guide unlimited numbers of students at any time.

Virtual libraries customize the Web for particular groups of students. No curricula are exactly the same. Because one teacher's environmental research assignment looks different from other environmental research projects across the country, the virtual library at that particular school will point students to the specific resources and strategies they'll need for success on that project.

## Where to Find Models

Virtual school libraries exist in large numbers and in great variety. **SchoolLibraries.Net** ([www.school-libraries.net](http://www.school-libraries.net)) and **School Libraries on the Web** ([www.sldirectory.com/index.html](http://www.sldirectory.com/index.html)) compile a growing directory of several hundred school library sites submitted by teachers and librarians around the world. These directories represent a significant investment of professional time and effort. But what models exist as best practice? For several years, the **International Association of School Librarians (IASL)/Concord Award** pointed to outstanding efforts in virtual library service ([www.iasl-slo.org/web\\_committee.html](http://www.iasl-slo.org/web_committee.html)). *School Library Journal's* **Web Site Reviews** frequently point to exemplary practice ([www.schoollibraryjournal.com/community/152/Web+Site+Reviews/2856](http://www.schoollibraryjournal.com/community/152/Web+Site+Reviews/2856)).

## Common Elements of Virtual Libraries

Virtual Libraries exist as rich multi-page sites. Among many common pages, most share the following essential elements.

### 1. Mental Maps and Navigational Aids

Virtual libraries let students envision the scope of their resource choices by helping them create mental maps for the information landscape. **Springfield Township's** and **Palmerston District Primary School's** virtual libraries both use physical library metaphors to organize Web resources. The metaphor is so effective that Springfield alumni often return saying they prefer its comfort and logic to their university's site. Frances Jacobson Harris, librarian at the **University Laboratory High School Library (UNI)**, describes the importance of her site's organizational structure. "Our Web site is the front door to all things library. We try to be consistent so students know what to expect. Major resources are front and center (online catalog, databases, and so on). Value-added resources (citation guides, course project guides, and searching guides) are off to the left. Reading-related and fun things are off to the right. After repeated exposures, students know that when they have a project they should look in the class projects page under their teacher's name."

The **Greece Athena Middle and High School** virtual libraries are similarly designed to facilitate student navigation. The homepage offers a clean table of important resources and a site map is included at the bottom of most pages.

### 2. Search Tools and Database Pages

Without guidance, student searchers are likely to visit one or two search engines on the Web and are not likely to remember that there are several genres of search tools available to them. Though **Google** ([google.com](http://google.com)) is pretty terrific, there are many reasons students should use the selectivity of **Librarians' Index to the Internet** ([lii.org](http://lii.org)). Students will discover subject-specific search tools or special tools for finding news, images, and hot issues. The Springfield Township High School Search Area separates

search choices with a page devoted to the various free Web search tools and another devoted to subscription services. UNI High School's clean interface effectively describes available database selections and uses charts to describe the features of free Web search tools.

Schools, public libraries, and state governments invest in rich and expensive proprietary databases that offer students access to journal articles, reference materials, primary sources, and other quality content not available through the search tools of the Web. If no interface sends students to these resources, they are not likely to look beyond commercial search engines. The best way to highlight these rich information resources is in the context of the virtual library.

### 3. Documentation Advice

If students are expected to document information ethically and to make their way through the thorny details of citation styles, they need help. Virtual libraries make the citation requirements of a school or district immediately available to students. Some interfaces link students to online citation generators such as **NoodleBib** ([www.noodletools.com](http://www.noodletools.com)). Most create and post customized style sheets with examples of the specific sources used most heavily by students. Springfield Township offers examples based on the resources in its own online collection. Library Media Specialist Will Haines notes that the Greece Athena Bibliography Guide is often linked to or copied by other virtual libraries. The page's strategy is to ask the question "What source are you citing?" and to link to bookmarks further down the page with the proper formats and examples.

### 4. Handouts, Lessons, and Activities

As schools, departments, and individual teachers create online tools for students in the form of rubrics, handouts, organizers, and WebQuests, it makes sense to maintain this online archive of resources in a central location. The regular classroom setting and library instruction can be significantly reinforced by online resources. An archive of such resources demonstrates collaboration to the entire learning community. Springfield Township's site offers a full research guide; organizers for preparing speeches and debates; and a multimedia research rubric. Springfield Township's online lessons page lists many activities generated by teacher/librarian partnerships.

In its Research Assistant, **St. Andrew's Episcopal School's** site offers ideas for topics; guides for asking essential and supporting questions; and advice on choosing and locating sources, note taking and documenting, avoiding plagiarism, synthesizing information, writing projects, and presenting conclusions.

The UNI site offers a variety of online computer literacy lessons on evaluation, Boolean strategies, searching, netiquette, and more. **Tomlinson Middle School** offers an impressive archive of its **Research Unit Archive** ([www.fairfield.k12.ct.us/tomlinson/ctomlinson02/archive.htm](http://www.fairfield.k12.ct.us/tomlinson/ctomlinson02/archive.htm)). **The Montgomery Library** links to online activities with strong information literacy goals. When the librarians at Greece Athena collaborate with classroom teachers on a curricular activity, they facilitate student access to project details and resources. These project pages range in scope from simple hotlists to formal WebQuests and they provide significant scaffolding for learners.

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Examples of classroom collaborations include:

## Remembering the Holocaust

[www.greece.k12.ny.us/ath/library/holocaust/default.htm](http://www.greece.k12.ny.us/ath/library/holocaust/default.htm)

## Battle of the Books

[www.greece.k12.ny.us/ath/library/battleofbooks/index.htm](http://www.greece.k12.ny.us/ath/library/battleofbooks/index.htm)

## Child Labor: Yesterday and Today

[www.greece.k12.ny.us/ath/library/teachers/philp/index.html](http://www.greece.k12.ny.us/ath/library/teachers/philp/index.html)

## Ten Wonders of the World

[www.greece.k12.ny.us/ath/library/teachers/epsilon/connell/wonders2003/default.htm](http://www.greece.k12.ny.us/ath/library/teachers/epsilon/connell/wonders2003/default.htm)

## Newbery Reading Project

[www.greece.k12.ny.us/ath/library/newbery/default.htm](http://www.greece.k12.ny.us/ath/library/newbery/default.htm)

Barbara Braxton at Palmerston District Primary School notes that her school's Web site "is now an integral component of our school's information and communication procedures as well as our resource collection." The site's instructional functions are to provide:

- information about the school
- access to materials that help parents understand how their children develop and learn
- a virtual staff room for professional development
- support for the implementation and delivery of classroom curriculum
- access to a virtual library of selected online resources
- opportunities for students to participate in national and international online learning projects
- opportunities for students to celebrate their learning and share it with others

## 5. Reference Service

Many librarians offer an email link for student reference. The Springfield Township Ask Me link is front and center. The librarians at the Greece Athena Middle and High School Libraries offer Ask-a-Librarian services for students through online forms, where students can get suggestions on how to research a topic or locate particular kinds of information. The form models the traditional reference desk query, asking students about their topics, resources they have already checked, and about the class for which they are doing the research. As Will Haines says, "We don't give the answers to students' questions, but we do respond, whether by email or in person, with advice as to where they can look for answers to their questions. Ask-a-Librarian is nothing we invented. Many public libraries offer this service but we don't see many school library sites that offer this service."

Martha Oldham, who maintains the **Lawrence High School** site, notes that students also need questions answered in the larger community. "It is sad to say, but in this era students need to know where to find help when they need it. That is the reason we included telephone numbers of help lines and hotlines in the Lawrence community."

## 6. Reading Motivation

Most virtual libraries link students to Web-based catalogs to find print resources as well as the online catalogs of public and academic libraries and statewide databases for interlibrary loans. Virtual libraries are also perfect vehicles for leading students back to reading offline. They may include summer reading lists, books selected by local public libraries, or the wonderfully rich lists created by the American Library Association. Springfield

Township's site links its summer list to Amazon reviews. Other virtual libraries offer Accelerated Reader lists. The Lawrence High School Library site has a strong reading emphasis with its student-created book reviews, READ posters featuring student readers, descriptions of its Read to Succeed activities, and original student poetry. The site is packed with reading lists (teacher picks, senior picks, books-made-into-movies, book slide shows, and more).

Frances Jacobson Harris hosts online book discussions and an engaging new book blog on her University Laboratory High School Library site. On the elementary level, the Palmerston Resource Centre's BookLook, maintained by Barbara Braxton, offers lists of series books, grade-by-grade read-alouds, and a list of elementary favorites.

## 7. Pathfinders

Since the early 1970s, pathfinders have been used in the library world as blueprints for researchers. Web-based pathfinders are tools for helping students and their teachers experience independence while getting their arms around a confusing volume of resources. They ensure that students cover all the bases, while clearing a 24/7 path through the information jungle. Pathfinders are generally customized to meet the needs of a particular group of students for a particular assignment. They link students to the specific resources recommended by their teachers and librarians. Pathfinders move students beyond **Google** and **Ask Jeeves (aj.com)** to explore:

- potential keywords
- definitions of key concepts
- potential questions to ask
- call numbers for reference books
- print magazines and newspapers
- subscription databases
- quality subject-area portals
- the best specific Web sites
- email experts
- streaming video resources
- blogs

Pathfinders make all of this guidance accessible using a limited number of clicks. A growing number of teachers and librarians are creating attractive, logically-organized, do-it-yourself comprehensive guides for research, as well as blueprints for constructing pathfinders.

## If You Build It, They Will Learn!

Virtual libraries and pathfinders are now an essential component of teacher/librarian practice. They are perfect environments for classroom collaborations. If we are going to meet learners' needs with quality resources and if our goal is to graduate learners with twenty-first century information skills, there is no time to waste. The time to build strong virtual libraries is *now*.

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## Examples of Pathfinders

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### Springfield Township High School Pathfinders

These pathfinders include college and career searches, finding primary sources, and addressing social issue resources. An educational research pathfinder is designed to guide faculty through graduate research, as well as reflective practice.  
[mciu.org/~spjvweb/pathmenu.html](http://mciu.org/~spjvweb/pathmenu.html)

### Lakewood High School Pathfinders

These pathfinders are customized for specific class projects and function as outstanding models of teacher/librarian collaboration.  
[www.lkwdpl.org/lhs/lhspath.htm](http://www.lkwdpl.org/lhs/lhspath.htm)

### Adelaide High School Virtual Library

This site maintains a wide array of pathfinders in nearly every imaginable subject.  
[www.adelaidehs.sa.edu.au/ahsintranet/subjects/index.htm](http://www.adelaidehs.sa.edu.au/ahsintranet/subjects/index.htm)

### A Pathfinder for Constructing Pathfinders

John Newbery Elementary presents a variety of pathfinders designed for younger students. The colorful and attractive pathfinders cover such topics as dinosaurs, the American Revolution, the Lewis and Clark Expedition, and more.  
[home.wsd.wednet.edu/pathfinders/path.htm](http://home.wsd.wednet.edu/pathfinders/path.htm)

### Methuen Media Center Pathfinders

These pathfinders are accessible from an elegant menu and cover such diverse research topics as chocolate, political scandal, and explorers.  
[www.methuen.k12.ma.us/pathfinders](http://www.methuen.k12.ma.us/pathfinders)

### Designing Pathfinders for Children and Young Adults

Anita Lamb offers advice and examples of best practice and lists factors to consider when designing pathfinders for children and young adults.  
[www.eduscapes.com/earth/path3.html](http://www.eduscapes.com/earth/path3.html)

### 20<sup>th</sup> Century History by the Decades

Peter Milbury gathers and annotates links for his students on his Chico High School site. Milbury's Latino links are written in Spanish.  
[dewey.chs.chico.k12.ca.us/decsq.html](http://dewey.chs.chico.k12.ca.us/decsq.html)

## Related Links

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**Springfield Township High School Virtual Library**  
[mciu.org/~spjvweb](http://mciu.org/~spjvweb)

**Palmerston District Primary School Resource Center**  
[www.palmdps.act.edu.au/resource\\_centre/rc\\_main.htm](http://www.palmdps.act.edu.au/resource_centre/rc_main.htm)

**University Laboratory High School**  
[www.uni.uiuc.edu/library](http://www.uni.uiuc.edu/library)

**Lawrence Public Schools**  
[www.usd497.org](http://www.usd497.org)

**Greece Athena Media Library**  
[www.greece.k12.ny.us/ath/library](http://www.greece.k12.ny.us/ath/library)

**St. Andrew's Episcopal School**  
[www.sasaustin.org/library](http://www.sasaustin.org/library)

**Tomlinson Middle School Virtual Library Media Center**  
[www.fairfield.k12.ct.us/tomlinson/ctomlinson02](http://www.fairfield.k12.ct.us/tomlinson/ctomlinson02)

**The Montgomery Library**  
[www.greenhill.org/divisions/montgomery\\_library/library\\_projects.htm](http://www.greenhill.org/divisions/montgomery_library/library_projects.htm)