Incorporating the Internet into Traditional Library Instruction

by Tony Fonseca and Monica King

Critical thinking skills

Search strategy

Web directories

Print directories

Online directories

Brief descriptions

Web search engines

Books, serials, journals

Full-text sources

Web sites

Evaluate information

Gain the knowledge you need

http://www.intelidex.com

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Aft er conducting numerous workshops over the last 3 years, one of us (Monica King) realized that developing a methodology for creating and teaching research strategies was important. Frustrated with having to "reinvent the wheel" for every program, she decided to develop a "template" for the purpose of training and bibliographic instruction. She wanted one that not only she could use, but that other staff could use as well.

King knew that teaching patrons about the library's resources with tools like the online catalog and magazine databases was important, but she also knew that, as information increasingly migrated to digitized formats and onto the Web, incorporating Internet sites and online databases was critical for effective instruction. When she became interested in incorporating Web searching into that template, King found herself facing the hurdle that many in our profession do: As Janet Balas succinctly expressed it, "librarians who search the Web frequently know that current search technologies return many irrelevant hits." To counter this, she began collaborating with another librarian (Tony Fonzo) in order to develop a template for a training program that would allow patrons to effectively incorporate Web searching into their library research. Together, they've generated some fundamental rules for effectively using, and teaching about, Web directories and search engines.

We first presented this template at the 1999 Louisiana Library Association Conference. A packed room of fellow librarians wanted to know the best methods for finding electronic information, especially on the World Wide Web, and for incorporating that information into more traditional instruction for patrons. This high turnout verified our assumption that many librarians feel uncomfortable at best with using the Internet in research strategies.

When we were preparing for the Louisiana conference, we created three different research assignments (genealogy, grant resources, and term paper research) that illustrated how the methodology that King had developed could be easily modified to fit a given information need. We then found Web sites that would enhance research on these topics. At the conference, we demonstrated how to follow the template for instructing patrons in the use of library research and search strategies.

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**Template for Teaching Traditional Library Research**

Here are the steps that we suggest you take when you're teaching a library instruction class:

**Talk About Searching**

Introduce class attendees to the online catalog, or reintroduce them to it, as need be. Tell them what topic you'll be using as you demonstrate various types of searching.

**Printed Book Resources**

Demonstrate how to locate the printed book sources available on this topic, including non-circulating and circulating titles or special collections. Describe how to locate these materials using your online or card catalog.

**Printed Serial Resources**

Demonstrate how to locate the printed serial materials available on the topic. Describe how to use your magazine indexes.

**Online Serial Resources**

Demonstrate how to access online full-text magazine and journal resources in subscription databases.

**Special Online Resources**

Demonstrate how to access any special CD-ROM or Web-based product such as business directories, grant collections, legal research subscriptions, etc.

**Internet Resources**

Demonstrate how to use Web directories and search engines to locate other Internet resources.

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**Template for Incorporating the Web**

1. Describe the differences between directories and search engines, explaining the usefulness of each.

2. Explain how to devise a search strategy and create a search term. Determine whether a phrase or a keyword search is most appropriate. Offer examples of different phrases to consider.

3. Explain how to use search engines; review Help files for chosen engines.

4. Go over tips for evaluating online resources. Tell the class to consider things like relevancy, content, and authority.

5. Illustrate the entire search process for locating Web sites with screen captures or flow charts.

6. Discuss the best practices for effective search engine use.

7. Discuss how to read URLs to evaluate a Web site's usefulness.

8. Introduce search tools and explain how to find them on the Web.

9. Describe shortcuts or tips for locating information within a given Web site.

10. Distribute handouts that illustrate the entire process so that others can either remember the steps or simulate the teaching methodology.

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sources, and emphasized the benefits of teaching that effective strategy to others. We went over how to use various search engines to research those topics. Instead of adhering to the usual role of checking only the favorite search engine of the librarian, our focus was on diverse meta-search engines, such as Highway 61, DOGPILE, Mamma.com, Northern Light, ProFusion, and Google. We had developed a few rules for assessing search engine capabilities, and for using the right type of engine with the right type of search. We also drew attention to the need to formulate search strategies before actually beginning a search, and the need to run comparison searches. Finally, we both shared a few tricks of the trade we knew for quickly and efficiently assessing a site’s relevance to the search, based on the lists of results turned in by each search engine. Now, with this article, we hope to break the barriers of proximity and share our knowledge, our “template” if you will, with librarians outside of Louisiana.

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Why Include the Web in Our Library Instruction?

We as librarians must accept the reality that patrons continue to be enamored of the Internet and the huge wealth of information it has the potential to provide. Patrons embrace the Internet, often as their first source for information—despite the problems of irrelevancy and misinformation (caused by the unchecked growth in the number of Web sites in the last several years). The good news is that, even given the lightning rate of change we have encountered in the information profession, our primary functions as librarians have not so much been re-created as they have evolved. With the growth of the Web as a valid source of information, we are faced with the challenge of strengthening our newly formed e-logs and becoming cybrarian.

As Mary Ellen Bates astutely notes, “being a librarian means thinking creatively about information.” When we as cybrarians think creatively about online information, our objective becomes learning how to incorporate relevant, accurate, and authoritative Internet-based information into traditional library research methods, and then deciding how to pass this information on to our colleagues and patrons.

Our Teaching Methodology

Here is the template we created to help others integrate Internet information successfully into their traditional library instruction classes.

General patron instruction for productive library research should follow the broad steps in our traditional template, a point we emphasize in our Research Methods presentations. Then we take traditional library instruction a step further by including other information from the “Internet-at-large,” and emphasizing that librarians and patrons alike should remember to apply the fundamental rules of evaluating electronic information to all sources. These guidelines include the consideration of title and contents, type or format, content level, availability, and dates of coverage.

Incorporating the Internet

Good searching begins well before the researcher enters the topic terms into a search engine. Critical thinking capabilities are as necessary in using a search engine as they are in using any print source or database. To illustrate this point, trainers can use a good flowchart, either created in house or taken off the Web. (See “The Search Process” Web site that we list in our Web Resources box.) When a trainer is outlining the steps for effective Internet searching, it is important for that trainer to remind participants of the need to differentiate a broad-based information request from a specific one. To explain this distinction to an audience of librarians or patrons, certain considerations must be paramount: The trainer must first decide on a primary focus, based on the student group. While it is good to have a generic library orientation presentation, you should consider customizing lectures for special groups as well. Our experience has taught us that popular topics, such as small businesses, genealogy, grant research, job searching, and term paper research, will promote genuine student interest and will result in better retention.

We stress that there is no magic involved in online searching, just strategy. The general online search rule that applies is one of practicality. We’ve found something that’s particularly useful to a group of students—understanding the difference between Web directories and search engines. Here’s how we explain the difference: Directories are subject trees that “catalog” or create classification schema for selected Web sites. Researchers starting with broad topics use directories to move from general information to more specific subsets of that information, by accessing sub-folders within the classification schema. Search engines, on the other hand, perform keyword searches, which are created by software programs often referred to as “robots” or “spiders.” Here it is essential to stress that, despite the fact that information retrieved is not evaluated or organized, search engines are necessary tools for finding specific pieces of information.

http://www.libtoday.com

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We then suggest further Web reading for more detailed discussions of the differences between search engines and directories, such as Schrock’s “Guide for Educators: The Mystery Solved,” Barlow’s “The Spider’s Apprentice,” and Axel Library Reference Department’s “Searching the Internet.” (See the URLs for all these in the Web Resources box.)

Here’s an Example of How We Conduct a Class

When we teach, we explain that a search for broad information should begin with a Web directory, which groups sites into subject categories. Examples of Web directories include The Argus Clearinghouse, britannica.com, INFOMINE, and many more. (See box below for names and addresses of some popular directories.) In general, Web directories can be useful when broad information is required, but their main use in a search for specific answers is to help whittle down a research topic.

Doing a more specific search with a phrase like “small business start-up incentives” requires that the researcher use a Web search engine. We share our rule of thumb, which is to begin with an exact phrase search, especially if searching for a name, organization, Web page title, or a concept that contains unique wording. We then do specific searches for sites that would lend themselves to exact phrase searching, such as “documenting online sources” or “government assistance to small businesses,” pointing out that the exact phrase is most commonly represented by enclosing the search phrase within quotation marks. We also present screen captures of the various levels of a search performed on various search engines. It is also useful to point class participants to Search Engine Watch, a site devoted to keeping up with search engine updates. Another helpful Web site is Pomona Library’s (Rice University), which delineates which specific search engines are best for which types of searches.

“We stress that there is no magic involved in online searching, just strategy.”

We note that online searching can take a little time, since all sites are not indexed by all search engines. Therefore it is imperative to perform more than one search and to realize that search engines will pull up exactly occurrences of a phrase. Success in searching may require different permutations, such as “citing online sources” versus “citing Internet sources,” or “Internet search strategies” vs. “online search engine strategies.” We like to give class participants handouts with various popular phrase searches and variations of those searches as well to illustrate this point.

In cases where a phrase search is not appropriate (such as those search terms that have no distinctive words or phrases but only common terms that would produce a huge number of results), we suggest that people use keyword searching. We explain that keyword searching is necessary yet often tricky, because each search engine uses different default Boolean and indexes keywords differently.

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It’s helpful to distribute a “Weblogography” or list of resources, and to alert people to the fact that some engines use full-text indexing while others index only title, headings, subheadings, hyperlinks, some content, and metatags. Other search engine pitfalls we point out are their inability to differentiate homonyms, the fact that they do not evaluate sites, their inconsistencies with weeding outdated sites, and their sometimes-incomprehensible ranking schemes.

Basically, we try to impart the message that the search engine is nothing more than a tool, and therefore, its usefulness is a variable dependent upon the skill of the searchers. We emphasize basic skills such as narrowing or expanding a search, using Boolean operators, adding, eliminating, or combining terms; and varying the search vocabulary and spelling (trying the terms disc, disk, floppy, and floppy to find all occurrences). We also mention fundamentals such as becoming familiar with your search engine of choice by reading its documentation to learn its specific rules for all the variables we’ve mentioned.

We also share various tips we have learned over the years, such as using the Find command in the browser to search a site (using the most unique phrase or word), or using the site’s own internal search engine if it has one. We also suggest one of our favorite tips, which is to true-casing the URL to move back in the site directory toward the index page, looking for related information. Of course, tangential to all this information is reminding researchers to develop their ability to
read URLs, not only for the obvious domain implications (.com versus .org versus .gov), but also for other clues (such as a well-known university name) that will indicate a site's potential usefulness.

Finally, we like to show the workshop participants the alternatives to search engines. Programs such as WebFerrer and Copemic 2000 are excellent extrasearch engines. These freeware products can be obtained at their home sites or at sites such as ZDNet or TUCOWS. They are noteworthy in their formatting of the results list in order to maximize user friendliness and efficiency. For example, WebFerrer uses the same interface as the Save/Send command in Windows, and presents the user with a list of URLs. When the mouse pointer is placed over a URL, a blinking box with the site summary appears. Copemic 2000 uses a typical database interface for searching, and creates separate, appropriate metasearches for Web sites, newsgroups, e-mail addresses, books, software, and hardware.

If possible, we use a live connection in our Internet searching demonstrations. However, experience has taught us that depending on having a live connection is dangerous at best. Trainers should always have a backup plan, such as using an offline browser program that downloads files to your hard drive to demonstrate Web pages (such as the Web Whacker program), or using PowerPoint slides or overheads.

Combining Ink and Electrons

What are the future implications for librarians attempting to teach patrons the best methods for locating information inside (and outside) of the Library? Perhaps it is to create a "brave new catalog" such as the one at Nashville State Tech Library. Like others who have "insouciously the Web," staff there have integrated Web sites into the online catalog. It's paramount, however, to never lose sight of the big picture: "As advocates of literacy and learning, we can choose to connect the world of print to the world of electronic and photons—not to build a hybrid, but to create an enhanced milieu that expands the experience of learning. It would combine the permanence of print with the immediacy of emerging information." Remaining focused on the traditional tools of library instruction while expanding patron knowledge is to include the use of authoritative and relevant Web sites for research is a future that all librarians must learn to embrace.

Monica King is a library technology consultant working in Ouachita Parish, Louisiana. Over the last 3 years, she has conducted over 100 workshops and presentations to both patrons and staff on the use of technology in libraries and has written several articles on security issues. She also recently completed a research project with Dr. David Robins and David Landry, both of Louisiana State University, entitled "The Gates Library Initiative: Internet Technology's Impact on Staff in Louisiana Public Libraries." Tony Fonseca is systems administrator at The State Library of Louisiana in Baton Rouge. Over the past 2 years, he has organized and helped teach in-house workshops to train staff for a new automation system, and over the past 5 years, he has guest lectured on the use of the Internet for research with the English Department at Louisiana State University. He is also co-author of the Readers' Advisory guide Hooked on Horror: A Guide to Reading Interests in the Genre (Libraries Unlimited, 1999).

References
2. According to research done by Matthew Gray, author of the World Wide Web Wanderer, the first autonomous agent on the Web, there were 130 commercial sites in 1993, and only 10,000 Web sites existed by the end of 1994. However, those numbers continue to rise dramatically: OCLC statistics show that the number of Web sites increased from 1,270,000 in 1998 to 2,851,000 in 1999 to 4,382,000 in 1999. Web Growth Summary. http://www.infol.gov/people/mkgray/net/web-growth-summary.html.
4. Web volatility has emerged as a major issue in research. One recent study by OCLC revealed that the number of IP addresses that were no longer associated with a Web site had been associated with the previous year was an alarming 44 percent between 1998 and 1999. June 1999 Web Statistics: http://www.nclc.org/polo/research/projects/Websstats/minted2.html.

Web Resources

Referred to in This Article

Copemic 2000
http://www.copemic.com
Guide for Educators
http://school.discovery.com/schrockguide/mystery/mystery1.html
Internet Searching Strategies
http://www.rice.edu/Fonders/Netguides/strategies.html
Search Engine Watch
http://www.searchengewatch.com
The Search Process
http://www.slu.edu/departments/english/research/wicont5.html
Searching the Internet
http://ozolin.lib.pitt.edu/ref/internet.html
The Spider's Apprentice
http://www.monash.com/ajp/author.html
TUCOWS
http://www.tucows.com
WebFerrer
http://www.ferrersoft.com/webferrer/index.html
ZDNet
http://www.zdnet.com