

## Teaching Information Literacy Skills in the Age of Search, Click, Copy, and Paste

By Phyllis DiBianco, Scarsdale High School, Scarsdale, NY

The Internet has transformed the social, economic and educational fabric of our society in the same way that electricity, the automobile and the telephone did in previous generations. Having been on the educational scene while this change was taking place I have been fascinated by the way our students' lives have been changed by the explosion of information and communication.

Through hypertext, multimedia environments, interactivity and 24/7 access we now have a framework for teaching information literacy skills. These skills must cover every aspect of research, from basic inquiry to locating relevant print and electronic information, to critically evaluating resources and utilizing data. In developing effective and dynamic instructional strategies it is important to consider what is known about the "clicking," searching, casual browsing and telecommunication habits of our students who have grown up in a world of digital, round-the-clock access to information.

Although we, as school librarians can refer to information literacy standards to clarify our goals when we work with students, we need to put ourselves in their place and



Figure 1

<http://www.pewinternet.org/>

understand more about the realities of information access from their viewpoint. Instead of digging for information, they now wade through piles of books, periodicals, web sites, experts at their fingertips, chat rooms, and papers for sale. As a librarian, I must understand their individual learning differences and help them decipher their personal and curricular information needs. We must keep in mind the fact that our students believe that in most cases the information they have found is "good enough," and what we are trying to teach them is why and how to access the "best" information for their needs.

*How do students use the web for information and learning?*

According to the Pew Internet and American Life Surveys (see Figure 1), students say that the Internet has replaced the library as the primary tool for research. "You can go home, get on the Internet and type in your search terms." The Internet helps them get information about things that are hard to talk to other people about. The Internet frees teens of the 'hassle' of getting to the library (Pew Research Center 2002).

Children (ages 6 to 12) rarely scroll through pages; they mainly

*Continued on page 2*

## The New Information Landscape

According to the Pew Internet and American Life Surveys, students say that the Internet has replaced the library as the primary tool for research. "You can go home, get on the Internet and type in your search terms." Pew reports 73% of college students said they use the Internet more than the library. This is supported in a recent article in *School Library Journal* stating that "78% of teens use the Web to help with schoolwork," and "83% of teens say that the loss of Internet access would have a negative effect on their schoolwork." As librarians read

this, I can hear them asking, "But is the information authoritative and accurate?"

In a recent report issued by OCLC it seems as though consumers are, by and large, satisfied with the quality of the information they find on the Web. More than 78% of survey respondents said the open Web is providing "most of what they need," and 52% of users surveyed believed that most or all of the information is reliable and accurate. (<http://www.oclc.org/membership/escan>)

Phyllis DiBianco, one of our *Cybersites* columnist discusses this phenomenon in the cover article and provides some guidance on how to support students in becoming information literate – facing head on with the fact that our students believe that in most cases the information they have found is "good enough," and what we are trying to teach them is how to access the "best" information for their needs. She identifies pertinent websites and includes a bibliography that is worthy of your summer reading.

---

### ***Teaching Information Literacy...continued from page 1***

interact with information that is visible above the fold. Kids are willing and often prefer to read instructions (at least in a game). There are greater differences between boys and girls than among adult men and women in that boys are more annoyed by verbose pages while girls complain when a site lacks good instructions (Nielsen 2002).

#### **The Digital Disconnect**

There is a widening gap between Internet-savvy students and their schools. Students report that many of the Internet-based educational assignments they receive consist of little more than completing digitized worksheets. Not all students have the skills to navigate the Internet effectively, but these needs are not being addressed in schools. Students hold many misconceptions about how to use search engines, how computer viruses are contracted and spread, how their privacy might be compromised online (Pew Research Center 2002).

We also know from research that it is more than three times as common to limit web reading to a brief rather than a full article. When reading a full article, users read about 75% of text. Users alternate between multiple sites, they read something in one window, switch, then switch back, not focusing on a single site. Reading from a computer screen is 25% slower and quite tiring on eyes. The web is user driven—people want to feel active and productive, thus they click. Each page is competing: 'Is this the best page for what I need?'

Studies have demonstrated that Adobe Acrobat (PDF) pages should be presented for printing, not read on screen. PDF files slow reading down significantly (Nielsen 2001).

#### **Children reading on the Web**

Since web information is in hypertext, not linear, our students have learned to read this way. As a result, readers of differing ability and experiences find meaning in the same 'document.' Problems do

<b>Main Menu</b>	
<b>Features</b>	
<b>Teaching Information Literacy Skills</b>	<b>p.1</b>
<b>Columns</b>	
<b>Processing Notes</b>	<b>p. 2</b>
<b>The Pipeline..</b>	<b>p. 8</b>
<b>Cyber Sites</b>	<b>p. 18</b>
<b>Cyber Toolbox</b>	<b>p. 26</b>

arise when students with little or no knowledge of a subject are swamped with too much new information without links to definitions and explanations. It is helpful to encourage students to create their own, personal hyperlinks to information they find useful (Sims n.d.).

In a recent study of college students reading essays, it was found that computer text is harder to understand and is subjectively less interesting than print text. Also, printed text is more persuasive than computer text (Murphy 2000).

## How can teacher librarians provide the best environment and opportunities for online learning?

### *Information vs. Knowledge: Prior Knowledge*

Cognitive psychologists have found that it takes knowledge to gain knowledge. According to Hirsch (2000), de-emphasizing the learning of facts and stressing the belief that kids can always look things up actually disables children from doing effective research. Stressing process at the expense of factual knowledge can hinder children from learning how to learn. In order to look something up, one must already possess a storehouse of knowledge about the subject. This is true whether research is being done in traditional resources or on the Internet.

Historical expert-novice studies have shown that you can only look something up if you already know quite a bit about the subject. According to Larkin (1980), an expert learns much more and faster than a novice. Vocabulary is a limiting factor; in order to understand something that is read, heard or looked up, you need to know 95% of the words. We are constantly refining meanings of previously experienced words, though we are not attending to this. Knowledge builds on knowledge. You more readily learn something new with analogies and points of reference with what you already know.

This means that it is critically important to monitor the understandings of our students as we move into new territory—*hyperlinks* to definitions, maps, and other references should be made available within assignments

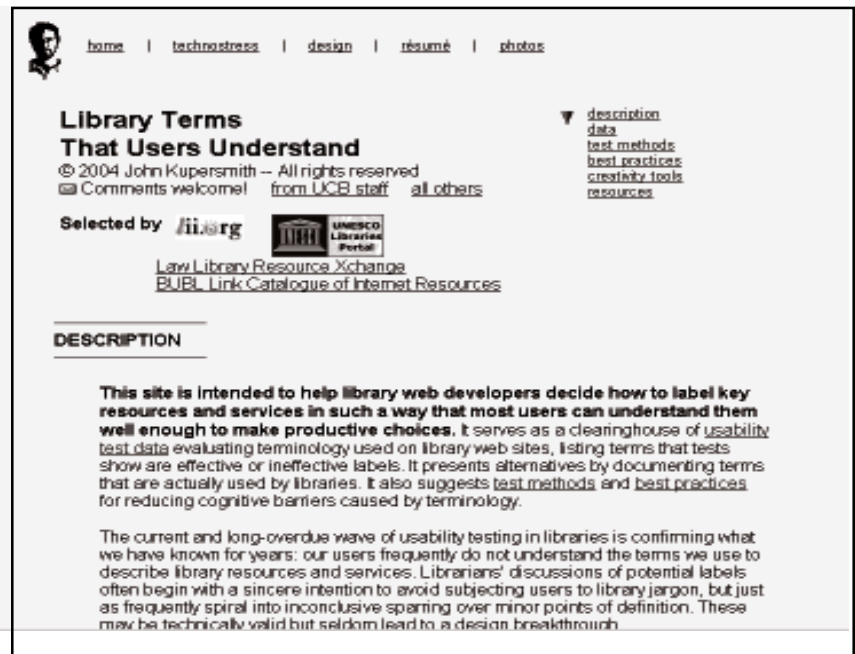


Figure 2

<http://www.jkup.net/terms.html>

posted on the web. Do not use library “jargon” such as *database*, *periodicals*, *in circulation*, *Boolean operators*, *peer-reviewed*, etc. unless you are certain that each student understands the terms (Kupersmith 2004). Use examples from their everyday life when

recognizing an information need (Brown 2003).

### **What must we understand in order to design instructional strategies that will work with students?**

***“...the Internet has replaced the library as the primary tool for research. ‘You can go home, get on the Internet and type in your search terms.’ ”***

teaching skills such as advanced searching (see *Figure 2*).

*Students must learn to ask their own questions.*

They must be lead down the garden path of inquiry. Only when students realize that the information they are seeking is *their own* problem, will they formulate real questions. The process involves moderating “techno-savvy” overconfidence and establishing steps toward

First and foremost, we must collaborate with our teacher partners so that students learn information access skills within the context of an assignment or a real-life need. It is rare for any of us to learn anything out of context, (unless there is another sort of reinforcement). Next, we must *not take anything for granted*. (Today, I had a student ask me what the ‘Telephone Book’ is when he could not find the phone number of his tutor and I

suggested that the telephone book might have it.)

### Students must learn to evaluate information

“Anyone can say anything on the web.” We must take time to clarify the specific differences between the information in a subscription database (generally reprints of articles and chapters in books) and that on the public web. They should understand the book / periodical editorial process. Older students can learn about differences *between peer reviewed academic journals and magazine articles* (Jerz 1999) (see Figure 3) Often our teacher colleagues need staff development time to learn about these differences and to work with teacher librarians to make this an authentic part of the research process.

In addition, the issue of information in context is important; the text may not be the article. According to Crawford (2000), we as educators must be cognizant of the context of the information in databases:

- Does the text include the illustrations, tables, “pull quotes?”
- Does the article stand alone in the periodical, or do surrounding articles enrich the content and provide context?
- Is the article a ‘column’?
- What must be understood about the periodical it appeared in? ex. New England Journal of Medicine vs. Prevention.
- What about cues from the placement and layout of a newspaper article, e.g. front page, or the size of the headline?

Databases such as JSTOR and ProQuest Historical Archives present articles in original format

Home > Articles > Academic Research > Using Research

### Academic Journals -- Compared to Magazines

An article in an *academic journal* may currently resemble a magazine article, but even the surface differences are numerous, important, and actually quite easy to spot. This table shows you some of the outward differences, but by far the most important difference is the fact that articles published in academic journals are *peer-reviewed* (checked and approved by knowledgeable scholars) while magazine articles are not.

	Academic Journals	Magazines
<b>Purpose:</b>	to distribute highly specific knowledge to experts and students; contributors are publishing in order to establish or improve their professional reputation.	to make money by supplying a platform to advertisers who want to reach a particular audience; from a certain, biased perspective, the article only exists in order to trick you into looking at the advertisements.
<b>Frequency:</b>	annual, semi-annual, or quarterly	monthly, weekly or even daily
<b>Medium:</b>	online and/or print	online and/or print
<b>On Paper:</b>	<ul style="list-style-type: none"> <li>• most have a square binding</li> <li>• spines may contain the issue information</li> <li>• inside, the paper is plain, not glossy</li> <li>• footnotes, a bibliography</li> </ul>	<ul style="list-style-type: none"> <li>• folded with a staple along the center line</li> <li>• splashy cover; lots of large headline text</li> <li>• lots of glossy, full-page color ads</li> <li>• no footnotes</li> <li>• possibly a “suggested reading list”</li> </ul>
<b>Content:</b>	each article concludes with a “Works Cited” or “Bibliography” list; article includes (a) footnotes, endnotes, or parenthetical notes; full publication data on all outside sources -- including the page numbers for direct quotes or paraphrases.	possibly a “suggested reading” list, but no formal bibliography, and no footnotes; the article may refer to “a recent government study” or may give the title of a book, but it won't specify the page number where a specific quote or fact can be found in those outside sources.
<b>Online:</b>	<ul style="list-style-type: none"> <li>• site is hosted by a university (.edu)</li> <li>• or possibly a non-profit group (.org)</li> <li>• looks plain, possibly even austere</li> </ul>	<ul style="list-style-type: none"> <li>• domain name ends in “.com”</li> <li>• flashy graphics and marginal graphics that encourage you to spend your money</li> </ul>

Figure 3 [http://jerz.setonhill.edu/writing/academic/sources/journals/vs\\_magazines.htm](http://jerz.setonhill.edu/writing/academic/sources/journals/vs_magazines.htm)

(PDF files) and within context of the periodical issue.

### Developing plagiarism-unfriendly assignments

Many students are so unsure of their skills at research and writing, do not know when and how to paraphrase, are not clear about how to quote an author, and end up with plagiarized work. In order to avoid this problem we can

focus more on the process and less on the product. Visit *The Inquiry Page* (see Figure 4) for a comprehensive discussion of this method. Rubrics can be developed to assess student notes, outlines, and the range of resources used. Free web sites are currently available to create rubrics, such as *Rubric Builder* (Warlick & The Landmark Project 2002) or *Rubistar* (see Figure 5) which even has rubrics created by other

Site: Map / Search Help  
Feedback Form

Join in Login

Welcome! The Inquiry Page is more than a website. It's a dynamic virtual community where inquiry-based education can be discussed, resources and experiences shared, and innovative approaches explored in a collaborative environment.

Here you can search a growing database of inquiry units, and you can also build your own inquiry units. You can see pictures of inquiry-based activities and learn more about some of our partners who use inquiry methods. Learn how to assess and evaluate inquiry-based education or look for more inquiry resources to support what you're doing. Or you can simply find out more about what inquiry and The Inquiry Page are all about.

Based on John Dewey's philosophy that education begins with the curiosity of the learner, we use a spiral path of inquiry: asking questions, investigating solutions, creating new knowledge as we gather information, discussing our discoveries and experiences, and reflecting on our ways.

Figure 4 <http://inquiry.uiuc.edu/>

You are not logged in. Login Sign Out

Register as a user

Create Rubrics for your Project-Based Learning Activities

### What is Rubistar?

**Important Notice:**

During these times of email viruses, we would like to tell all our users that Rubistar, 4Teachers, and HW\*TCO do not send emails with attachments. Do not open any attachments claiming to be from us or anyone we do not know. Please your computer scan software!

Rubistar is a free tool to help a teacher make quality rubrics.

Rubistar is a tool to help the teacher who wants to use rubrics, but does not have the time to develop their own rubrics. **Find Rubrics - Use Rubric Samples** if you have suggestions for rubric categories, new language and content.

Choose a Topic: Deliver to Create a New Rubric Based on a Template:

**Start Here!**

**Pay It Out**  
Use this option if you want to be paid for the 30 day trial or if you want to make additional purchases. You can print a check to be mailed to you or you can use a credit card.

**Find Rubrics**  
See Rubrics in the Context of a Lesson  
This tool will help you get a new spin on an old subject. Rubistar's **Find Rubric Page** is the best source to provide you with the best rubric for your class.

Figure 5 <http://rubistar.4teachers.org/index.php>

educators that you can adapt. Address the issue of plagiarism openly with students; go through the steps from inquiry to final product as you explore the specifics of “How Not to Plagiarize” (See Figure 6) and “Integrating Good Sources” (See Figure 7).

### What should the school library website include to support our students through a coherent research process?

As we work with more and more techno-savvy students, we often find that our professional skills and language must be adapted to reach the students and work with them in their 24/7, hypertext environment. Based on the material above, a school library website should present information clearly, concisely, and allow for exploration without ‘getting lost.’

A site map helps when there are more than a few pages to navigate. Careful assessment should be made so that the site is usable for students of all abilities, levels of development and learning styles. The design should be free of distraction, should link to the school’s main page, have consistent navigation features through all pages, and should be tested with a variety of browsers and screen resolutions.

Websites can include:

- Links to your library’s online catalog and those of local public and academic libraries
- Direct links to databases, including remote access for students at home
- Ready reference / email address of librarians
- Topical pathfinders and resource guides that give students a list of print resources, public web sites and subscription resources, ex.

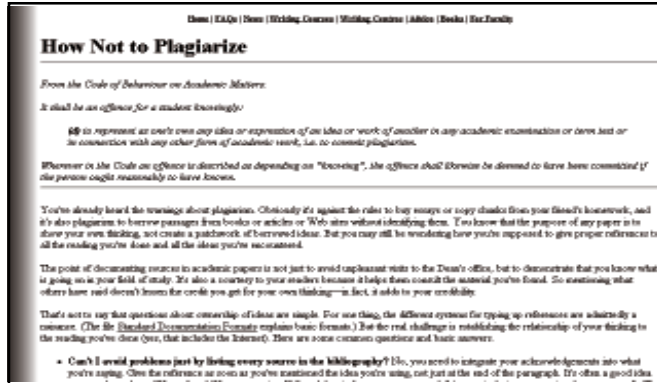


Figure 6 <http://www.utoronto.ca/writing/plagsep.html>



Figure 7 <http://jerz.setonhill.edu/writing/academic/sources/integrating.htm>

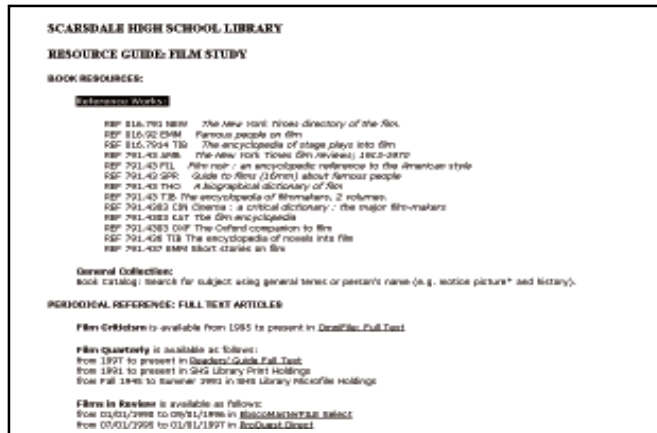


Figure 8 <http://www.scarsdaleschools.k12.ny.us/hslib/film.htm>

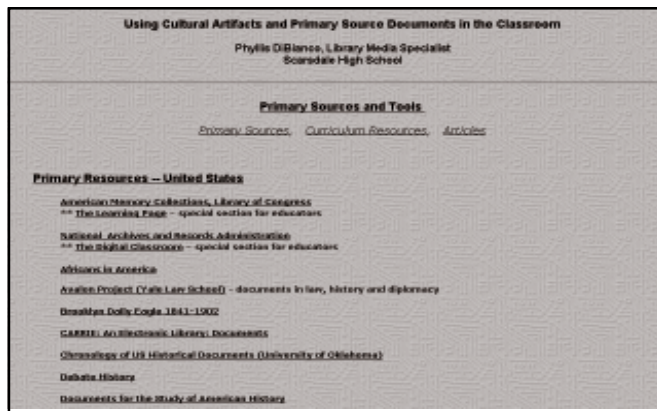


Figure 9 <http://www.scarsdaleschools.k12.ny.us/hslib/memorytools.htm>

*Film Study* (See *Figure 8*); *Primary Source Websites* (See *Figure 9*)

- Step-by-step instructions for finding specific types of information ex. *Hyperguide to finding an article* (See *Figure 10*, page 32), Lovett Schools, GA, USA
- Student discussion and comments ex. *Threaded discussion - Buddhism* (See *Figure 11*, page 32)

### **Tips for developing effective web-based library instruction**

Consider developing a web-based tutorial that students can turn to for guidance in their research. Web tutorials should follow the general principles for good web page design. Provide a clearly defined structure that allows for both linear and nonlinear learning, so students can review sections and/or select the pathways that best meet their needs. Include interactive exercises (active learning) such as simulations, manipulation of objects, interactive quizzes, or the direct application of principles. These will encourage problem solving by students and allow them to self-assess their learning, engage in “deep learning” (understanding the meaning) rather than “surface learning” (memorization and regurgitation).

Give attention to the concepts behind the mechanics so that information skills are applicable to other situations. Incorporate contemporary language and topics, be as succinct as possible, and do not be afraid to entertain. This will establish relevance to students’ lives, not overwhelm them with verbiage and help to keep their interest. Provide a

*continued on page 32*

## **Tutorials on the Web**

### **TILT: Texas Information Literacy Tutorial**

<http://tilt.lib.utsystem.edu/>

An interactive library tutorial, developed by the University of Texas Libraries leads students to explore and research the world. Can be downloaded and customized by educators or used as is via the web. TILT lite requires no plug-ins, while Full TILT provides interactivity. This tutorial works best on a high speed connection, and is very informative, interesting, and fun.

### **Finding Information on the Internet**

<http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/FindInfo.html>

An introduction to searching and questioning what you find, courtesy of The Library, University of California, Berkeley.

### **Information Literacy and You**

<http://www.libraries.psu.edu/instruction/infolit/andyou/infyou.htm>

The Pennsylvania State University Libraries developed this clear and simple set of modules to help students go through various phases of research, from defining your topic to writing and citing.

### **ICYouSee: T is for Thinking**

The ICYouSee Guide to Critical Thinking About What You See on the Web

<http://www.ithaca.edu/library/Training/hott.html>

John R. Henderson, Ithaca College Library has created a friendly site that leads students to question what they are looking at on the web.

### **AskIT: IT Answers to your Frequently Asked Questions**

<http://askit.uq.edu.au/itanswers/>

A different type of tutorial collection, courtesy of the University of Queensland; you are walked through help with hardware, software, Internet and research.

### **UT Crash Course in Copyright**

<http://www.utsystem.edu/OGC/IntellectualProperty/cprtindx.htm>

This University of Texas crash course includes a tutorial with tests for those who want to see how much they really know.

## **Web-Based Instruction**

### **Tips for Developing Effective Web-Based Library Instruction**

Criteria (with links) for good library instruction on the web.  
<http://www.lib.vt.edu/istm/WebTutorialsTips.html>

### **Educational Web Design**

Issues of the interaction of web design and instruction in the areas of screen design, content design, interaction and navigation and site management.

<http://www.une.edu.au/tlc/design/index.htm>

## Bibliography

Brown, C et al 2003, **Turning techno-savvy into info-savvy: Authentically integrating information literacy into the college curriculum**, *The Journal of Academic Librarianship*, vol. 29, no. 6, Nov. 2003.

Crawford, W 2000, **Here's the Content—Where's the Context?**, *American Libraries*, March 2000, pp. 50-52.

DiBianco P n.d., **Primary sources and tools, Using cultural artifacts and primary source documents in the classroom**, Scarsdale High School, NY. [Online], <http://www.scarsdaleschools.k12.ny.us/hslib/memorytools.htm> Accessed 20 Apr 2004.

DiBianco P & Leung Eichler, S 2003, **Buddhism**, Scarsdale High School, NY, USA. [Online], <http://www.libweb.org/sls06/assessment.htm> Accessed 20 Apr 2004.

Hirsch, ED 2000, **You Can Always Look It Up'...or Can You?** *American Educator*, Spring 2000, pp. 4-9.

Geneva Elementary School n.d., **Geneva Elementary School's Library Media Center**. [Online], <http://www.gen.bham.wednet.edu/genlibrary.htm> Accessed 20 Apr 2004.

**Inquiry Page™: Learning begins with questions** 2004, version 1.35. [Online], <http://inquiry.uiuc.edu/> Accessed 20 Apr 2004.

Jerz, DG 1999, **Academic journals –compared to magazines**, last updated 21

August 2001. [Online], [http://jerz.setonhill.edu/writing/academic/sources/journals/vs\\_magazines.htm](http://jerz.setonhill.edu/writing/academic/sources/journals/vs_magazines.htm) Accessed 20 Apr 2004.

Jerz, DF 2001, **Research papers: integrating good sources**, last updated 1 December 2002. [Online], <http://jerz.setonhill.edu/writing/academic/sources/integrating.htm> Accessed 20 Apr 2004.

Kupersmith, J 2004, **Library terms that users understand**, last updated 26 February 2004. [Online], <http://www.jkup.net/terms.html> Accessed 20 Apr 2004.

Larkin, J, Simon HA, et al 1980, **Expert and Novice Performance in Solving Physics Problems**, *Science*, no. 208, pp. 1335-42.

Lovett School Libraries 2003, **The Article Finder: A "hyperguide" to finding the right article in the VWL**, The Libraries@Lovett, Atlanta, GA, USA, last updated 17 April 2003. [Online], <http://www.lovett.org/libraryweb/afast.htm> Accessed 20 Apr 2004.

Murphy, KP 2000, **Texts on Computer Screens Harder to Understand, Less Persuasive Than Same Texts on Paper**, *Study Finds*, *AScribe Newswire*, 10 August.

Nielsen, J 2001, **Jakob Nielsen's Alertbox: Avoid PDF for On-Screen Reading**, 10 June 2001. [Online], <http://www.useit.com/alertbox/20010610.html> Accessed 20 Apr 2004.

Nielsen, J 2002, **Jakob Nielsen's Alertbox: Kids' Corner: Web Usability for Children**, 14 April, 2002. [Online], <http://>

[www.useit.com/alertbox/20020414.html](http://www.useit.com/alertbox/20020414.html) Accessed 20 Apr 2004.

Pew Research Center 2002, **The Digital Disconnect: The widening gap between Internet-savvy students and their schools**, *Pew Internet & American Life*, August 14, 2002. [Online], <http://www.pewinternet.org/reports/toc.asp?Report=67> Accessed 20 Apr 2004.

Procter, M 2001, **How not to plagiarize**, last updated 14 September 2003. [Online], <http://www.utoronto.ca/writing/plagsep.html> Accessed 20 Apr 2004.

**Rubistar: Create rubrics for your project-based-learning activities** 2003, High Plains Regional Technology in Education Consortium. [Online], <http://rubistar.4teachers.org/index.php> Accessed 20 Apr 2004.

Scarsdale High School Library n.d., **Resource Guide: Film Study**. [Online], <http://www.scarsdaleschools.k12.ny.us/hslib/film.htm> Accessed 20 Apr 2004.

Sims, H n.d., **Hypertext in the Secondary School Classroom. A Hypertext project**. [Online], <http://ebbs.english.vt.edu/hthl/etuds/sims/project/hyperprojhome.html> Accessed 20 Apr 2004.

Warlick D & The Landmark Project 2002, **Rubric Builder**. [Online], [http://landmark-project.com/classweb/tools/rubric\\_builder.php3](http://landmark-project.com/classweb/tools/rubric_builder.php3) Accessed 20 Apr 2004.

way to contact a librarian when they have a question.

When the tutorial is used, try to make it course-related further reinforcing the tutorial's relevance. (*ACRL Instruction Section Teaching Methods Committee*)

Improving our web interfaces can go a long way toward helping users make the best choices, especially given that so many of our users never ask for help. Our goal is to create self-teaching interfaces. The web sites in the box on page 6 will provide excellent examples of well-designed, inviting tutorials for you to recommend to students and colleagues.

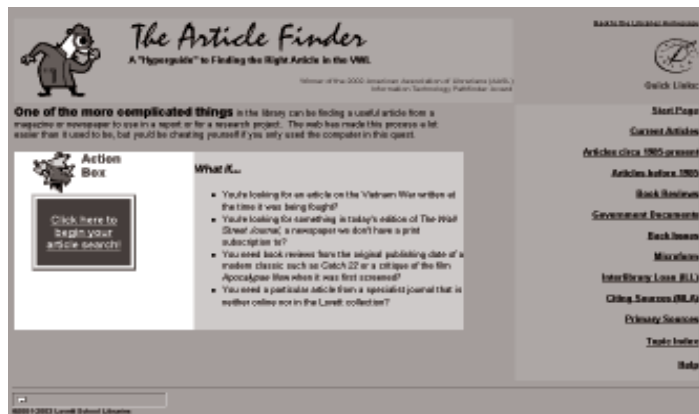


Figure 10 <http://www.lovett.org/libraryweb/afstart.htm>

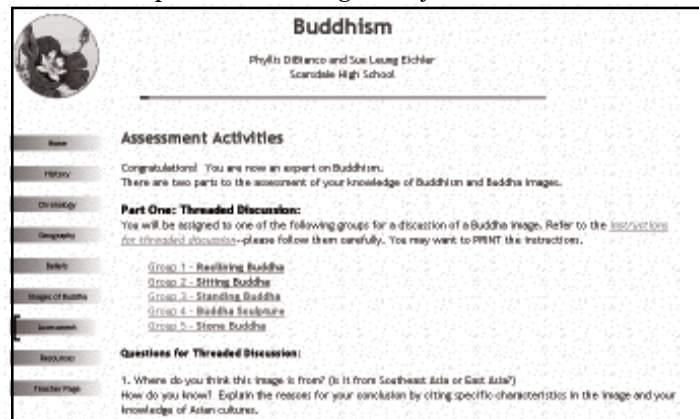


Figure 11 <http://www.libweb.org/sls06/assessment.htm>

*Information Searcher*™

**Editor-In-Chief**

PAM BERGER  
pberger@infosearcher.com

**Circulation Manager**

BILL BERGER  
billberger@yahoo.com

*Information Searcher* is published quarterly by Datasearch Group, Inc., 14 Hadden Road, Scarsdale, NY 10583 (914) 723-1995. subscriptions \$34 annually, \$39 Canada, \$42 Europe and all others.

All rights reserved.

PRSR STD  
U.S. Postage Paid  
Leesburg, FL 34748  
Permit No. 1040