

Effective **Internet** Research

Out on a Lim
With Educational
Technology

BY JANINE LIM

As more schools get connected to the Internet, they need to find effective ways to use this tool in the classroom. The Internet offers a wealth of current information, online journals, magazines that the school budget may not cover, and more. However, it also can be difficult to navigate and contains some inappropriate material.¹ Still, considering the wealth of information available² and the need to teach information literacy, teachers must find ways to use the Internet in the classroom.

So how can you use the Internet effectively? First, students need direction. They should never be allowed to use the Internet without a curriculum-specific purpose or task. Here are two ways to guide students as they do research on the Internet.

Organize Research Ahead

By organizing research, teachers can control the sites students visit. This makes efficient use of classroom time since the sites are listed in advance. However, it requires more preparation, as the teacher must find and approve Web sites.³ Also, each student has to research the same topic.

One way to organize the research is to create a hotlist, or list of sites pertaining to the topic of study. Use your browser's Bookmarks⁴ or Favorites to create folders for each topic of study, such as animals, zoos, and appropriate search engines for young people.⁵ Or you can create a hotlist of active links in your favorite word processor.⁶ Students then open the word-processing document and read the assignment. To answer a question, they click on the Web

site link, find the information, and switch back to the word processor to type their answer.

Another way to organize the research is to create a treasure hunt with questions to be answered at various sites. This can serve as the introduction to a lesson, a review, or an investigation. For an example of a treasure hunt, visit a site I created for learning about and praying for countries in the 10/40 window.⁷ It includes questions such as:

Visit *Azerbaijan International* and scroll down to Topics. Choose Just for Kids and read the article about Red. Name some reasons why red is the important color in Azerbaijan. If you were going to choose a color for your country, what would it be? Write about why

the color is important in your country.

In this example, the italicized words link to the appropriate Web page. These examples show how to create questions that require students to not only find information, but also to apply what they have learned. By organizing student research ahead of time, you can provide a rich learning experience while protecting students from inappropriate material.⁸

Having Students Conduct Their Own Research

When students choose their research topics, you will need to plan carefully and structure the assignment so that they are less tempted to "surf the Net."

First, think carefully about the re-

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search project. Assignments should require more than fact-finding because students can find whole term papers on various cheat sites on the Internet.⁹ If the assignment requires critical thinking and synthesis, it will offer fewer opportunities to cheat.

Next, as part of the pre-writing activities, have students brainstorm questions and keywords related to their topic. Rather than gathering all information about the subject, have them select key questions so that they obtain only pertinent information. Focus questions on big issues that begin with “Why?” “How?” and “Should?”¹⁰ Before they use a search engine, have students list 20 to 30 keywords from books, magazines, journals, and other sources to guide their research. I recommend requiring a defined number of Internet sources and print materials. Have students prepare a research planner, and include this in your assessment.¹¹

As students do their research, have them prepare an electronic version of “note cards” to keep track of Internet resources. In a word-processing document,¹² they can create a table like the one on this page for each reference.

Everything from the Internet should be documented, including graphics, sound, and video clips. These electronic “note cards” can later be used to create a bibliography. It is important to teach students to obey copyright law and to give credit for materials from the Internet, just as they would with articles and quotations from other sources.¹³

Evaluating Web Sites

Finally, whatever method you select, keep in mind the need for students to acquire information literacy. This is a new concept for teachers and students alike. We are accustomed to editors verifying the accuracy of information be-

fore it is published. However, on the Internet, anyone can publish anything. Many people assume that if it's on the Internet, it must be true. For example, have you received an E-mail offering free Gap clothes, a trip to Disney World, or \$1000 from Bill Gates? How many have forwarded such offers to friends, thinking they were legitimate? To help you decide if the E-mail is a hoax before passing it on, visit a site such as the Computer Incident Advisory Capability prepared by the U.S. Department of Energy.¹⁴

You can evaluate the quality of information on the Internet based on the URL (Uniform Resource Locator) or Web site address. For example, by looking at the following Web address for a scientific image gallery, http://www.uq.edu.au/nanoworld/images_1.html,¹⁵ I can tell that the site is sponsored by either a university or college in Australia. It is more likely that the information is accurate and correct because it is published by a university.

Students can also evaluate sites by asking questions like these:

- Who provided this information?
- Why?
- Is someone trying to sell us a product or point of view?
- What possible biases can we detect here?
- If quotes or data are provided, are they appropriately referenced?
- How can we find other information with which to compare and evaluate accuracy?
- How do the visuals influence the way we receive this information?
- Are the sound effects intended to influence our thinking?
- Does it appeal to the emotions?
- Do the visuals and the text convey the same message?

Help students analyze the purpose

of Web sites. The type of site can offer a clue. For example, news pages provide current information; advocacy pages attempt to sway opinion; and business pages attempt to sell you a product. You can help students evaluate Web sites by taking them to a site that is incorrect and asking them to evaluate it. A graduate-level class in Mankato, Minnesota, offers a few good examples, such as a site advocating that we “ban dihydrogen monoxide.”¹⁸

By organizing your students' research and structuring their activities on the Internet, you can help them learn to effectively use the wealth of knowledge available and to become information literate. ✍

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NOTES AND REFERENCES

1. Undesirable Internet sites include ones featuring pornography, violence, or bigotry, as well as sites that involve fantasy games and magic, fraud, and a wide variety of secular and religious “isms.” Blocker programs can be used to prevent student access to some of these sites, but teachers need to be constantly vigilant about student use of the Internet. See the Internet Advocate for more information: <http://www.monroe.lib.in.us/~lchampel/netadv.html>.
2. For a sample of helpful materials for education, visit a site that I maintain for the schools in my county: <http://www.remc11.k12.mi.us/bcisid/classes/>.
3. Some great places to start a search for good sites can be found at: <http://www.remc11.k12.mi.us/bcisid/classes/search.htm>.
4. If you use Netscape, the bookmark file is really a Web page that can be easily published on the school's Web page. Then students can visit class sites from home. See <http://www.andrews.edu/~freedj/jae.htm> for instructions.
5. For example, www.ajkids.com; <http://www.rcls.org/ksearch.htm>; <http://www>.

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Item	Date	Author	Title	URL
article about research	downloaded: 1/25/99 published: Vol. 7, No. 8, May 1998	Jamie McKenzie	“The New Plagiarism: Seven Antidotes to Prevent Highway Robbery in an Electronic Age”	http://www.fno.org/may98/cov98may.html

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yahooligans.com/; or <http://www.studyweb.com/>.

6. The later versions of Microsoft Word and WordPerfect automatically link URLs or Web addresses. If you use ClarisWorks 5.0, the links can be created easily using the Internet toolbar. Or you can save the file as a Web page and publish it on the school's Web site or view it locally. Idea from <http://www.essdack.org/tips>.

7. Visit <http://www.andrews.edu/~freedj/1040window/> to see the full treasure hunt. For two other treasure hunts created for teachers, visit <http://www.atie.org/mission/> and <http://server.remc11.k12.mi.us/bcisd/classes/hunt.htm>.

8. For more advanced treasure hunts, try a WebQuest. Learn all about them at <http://edweb.sdsu.edu/webquest/webquest.html> and find great examples at <http://www.atie.org/webquest.html>.

9. Visit the Instructor's Guide to Plagiarism at <http://www.carleton.ca/~gsenecha/guide/>. Read more about Digital Deception from <http://www.electronic-school.com/199903/0399f2.html> and read about the New Plagiarism at <http://www.fno.org/may98/cov98may.html>.

10. Read more on questions at: <http://www.fno.org/sept96/questions.html>.

11. Visit my page at <http://www.andrews.edu/~freedj/jae.htm> for a printable research planner.

12. This idea is from <http://www.essdack.org/tips>. For another method, see <http://www.fno.org/may98/cov98may.html> and check out "Antidote 5."

13. Read more at the copyright Web site: <http://www.benedict.com/>. For information on citing electronic documents, visit <http://owl.english.purdue.edu/writers/documenting.html> for Modern Language Association style and <http://www.beadsland.com/weapas/> for American Psychological Association style.

14. See <http://ciac.llnl.gov/ciac/CIACHoaxes.html>.

15. The *au* tells me that the site is located in Australia. The *edu* indicates that the site is a university or educational institution.

16. See book review of Jane M. Healy, *Failure to Connect*, in *Electronic School* 185:9 (September 1998), p. A42. See also <http://www.electronic-school.com/>. For other articles on evaluating sites, visit Kathy Schrock's *Guide for Crit-*

ical Evaluation Information at <http://discoveryschool.com/schrockguide/eval.html>; *Evaluating Educational Web Sites* at <http://oii.org/html/evaluate.html>; and *Evaluating Internet Based Information* at <http://www.lme.mankato.msus.edu/class/629/Cred.html>.

17. P. Tjomsland, Presentation handout from *Cybrarians: Media Specialists and the Internet*. Presented at the Connected Classroom Conference, November 1997.

18. Visit <http://www.lme.mankato.msus.edu/class/629/dhmo.html> for the Ban Dihydrogen Monoxide site. Other examples can be found at <http://www.tass.net/> and at <http://www.kalama.com/~zimba/integration.htm>. On the last site, scroll down to the evaluation section.

Separate Articles
Removed