

# Oh, What a Tangled Web We've Woven! Helping Students Evaluate Sources

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**W**riting research papers before the advent of the personal computer and the growth of the Internet was not at all like the task faced by high school and college students today. Doing research in *the olden days* was an endless and well-defined process for English teachers. As students, we started by choosing a topic, narrowing it, and then trying to create a thesis sentence to guide the research. Then came the research, introduced by a mandatory library tour complete with instructions on using the card catalog, reference books, and *Readers' Guide to Periodical Literature*. Once we actually began

searching for resources, we hoped nobody had checked out those sources we needed. Endless hours of reading and transferring information onto note cards often preceded any real thinking or writing about the topic.

Later, as we became those English teachers assigning research papers, we realized we needed to instruct students in the same laborious research process: Make notes on index cards; make a bibliography card for each source; key every note card to source and type. Explaining the type of note card meant we had to teach students the differences among a direct quote, precis, paraphrase, and summary. Bibliographic format, of course, filled several more hours, as we drilled the students in proper placement of commas, dates, and underlining in MLA style. Then, once our students had mastered these techniques and accumulated enough note and bibliography cards, they would be ready to write a coherent, captivating research paper. Or so we told ourselves.

## Enter the Internet

In high schools and colleges today, English teachers and their colleagues across the curriculum are still assigning research papers. Students still go through

a process to research and locate suitable sources for their topics, but the personal computer and access to the vast and tangled web of the Internet have revolutionized the research paper assignment. Not only does word processing, with its quick and easy revision applications, make writing the paper easier, the ability to find resources via the Web makes researching appealing, almost glitzy, to adolescents. Teens enjoy the electronic medium for research; having to surf the Web looking for sources is almost a forced pleasure. They are attracted by the graphics and multimedia extras; they find jumping from link to link in nano-seconds more enjoyable than paging through indexes of thick books. For these students, scanning screens is not as miserable as reading lengthy hard copy articles.

Teachers everywhere, of course, are alarmed by the new technology and what it is doing to writing and research. In a recent *New York Times* article, Steven Knowlton suggests that "without guidance, the Internet's wealth of data can lead to poor research papers" (18). A few months before, David Rothenberg noted the same problem in his article, "How the Web Destroys the Quality of Students' Research Papers." A *Salt Lake Tribune* article, "Is Internet Cheat Sheet or Tool for Education?" describes sites that offer papers for sale,

while surveying English teachers' opinions on the use of the Internet to teach writing.

Of course, the more we use the Internet, the more we know both its capabilities and its pitfalls as an educational tool. Points we all recognize, however, are that the Internet is here to stay, it will be used for research, and we can't ignore its power for engaging our students in writing the traditional term paper.

### The Problem of Sources

The problem of sources really isn't a new one, nor one linked exclusively to Web sites. Published guides such as James D. Lester's *Writing Research Papers* always contain a section on evaluating sources. Standard procedure in teaching the research process to students is to lecture on source quality and credibility. Teachers generally talk about how to know if the book a student has located is a good one for information as well as a credible resource intellectually. We're not sure students always listen. We still receive papers in which students use popular periodicals such as *Good Housekeeping*, *Family Circle*, and *Redbook* as authoritative sources of knowledge instead of academic journals. To many students, a source—any source—on the topic is just that, a source. They mostly want to find the required number of sources to flesh out their bibliographies and to have enough information to piece together, in patchwork fashion, the required number of pages for their research paper assignment.

Helping students learn to navigate and evaluate the staggering amount of information on the Web may actually prove a blessing for English teachers. We have found it so. When we take students to the lab and walk them through the important features of a credible Web site, we have found that, *finally*, they start applying the same criteria to print sources—something we thought we had been teaching prior to the use of electronic research. We end up discussing what makes a viable print source as often as we explain the qualities that make a good Web source.

Unfortunately, students don't always understand what they see on their monitors when they are surfing the Internet. First, they do not know how to differentiate between electronic library resources and public Internet sites. For example, they may assume that a database posted on the Web is as reliable as personal pages that are also

published on the Web. In reality, electronic databases are posted by publishers who screen the content and then organize the resources. Second, students do not realize that Web pages generally do not adhere to any criteria before they can be posted to the Internet. Librarians assure that quality materials are placed in the library, but on the Web anyone can publish a home page. No one entity screens and organizes pages published on the Web.

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### Evaluating Web Resources

Because of the immensity of information—worthwhile and not so worthwhile—on the Web and because of the confusion over all the electronic resources posted on it, we really do need to teach our students how to evaluate what's out there. One of the first steps is to explain the extension domains. The domain provides information about the authority and perhaps even the bias of the source. For example, sometimes students may want to find information from a *.com* site for a paper, but they should know that such a site *is* commercial and has something to sell. Following is the current list of top level domains on the Internet:

.com	commercial entity
.edu	educational institution
.gov	government agency or department
.mil	military organization
.net	network resource
.org	other type of organization, usually not-for-profit
.firm	businesses

.store	online stores
.web	Web related organizations
.arts	cultural and entertainment organizations
.rec	organizations emphasizing recreational activities
.info	organizations that provide information
.nom	individuals who want to be identified as such

With the interest in having students publish their papers on the Web, often as a class project, perhaps another domain ought to be created. A domain of *.stu* would let surfers know that this information is from a student writer's work and not from a psychologist, a sociologist, or other credentialed source. Too often students don't realize the source they've decided to quote is another student paper.

What are the important criteria, then, for establishing the credibility of a Web resource? These criteria are identical, for the most part, to what we use to measure the quality of a print resource: authorship, accuracy, objectivity, currency, and coverage.

### Authority

James Strickland notes in *From Disk to Hard Copy*:

... there's no way to tell who is or is not an authority on the Net. To author tends to give one authority ... In cyberspace, anyone can claim authority, posing as one who knows things, presenting information in a format identical to those whom others would consider experts." (90)

The authorship of a Web site is often difficult to determine. Many times the list of qualifications is absent, and there is no link available to a home page. On the Web, the home page is the sponsor, similar to a publisher in the traditional setting.

When students are trying to establish the authorship and affiliation of a Web page, they should consider the following questions:

- Is the author's name listed?
- What are the author's credentials? Do these identify the author as an authority in the field?
- Is the author's institutional affiliation listed and linked to the home page of that institution?

- Is the relationship between the institution and the author clear?
- Does the author list an address (e-mail or snail mail) or phone number for contact?
- Is there a link to the author's biographical information?

A well-constructed, credible Web site will have many of these informational items present. If they are missing, students should beware.

### Accuracy

In addition to being able to investigate information about the author, students will want to be able to evaluate the accuracy of the information or claims presented on the Web site. Again, they need to remember that *anyone* can publish a Web page. At this point there are no standards and no type of control in place for pages published on the Web. Questions students will want to consider include the following:

- Is the information reliable and free from errors?
- Is a bibliography included to verify the information?
- Is it clear who is responsible for the accuracy of the material?
- Are there links to other reliable sources?
- If statistical material is included, are the sources for these materials clearly stated?

### Objectivity

Students should know that Web pages seldom state the goal or aim of the author. Many times a Web page is only a sounding board for the author. Students will want to clearly differentiate advertisement from actual information on Web pages. To make this distinction, they should carefully look at the domain extension and ask the following questions:

- Is the information presented with the least possible bias?
- Is the site factual, or does the author try to change the user's mind?
- Are graphics or imagery used to sway the opinion of the user?

### Currency

One of the exciting features of the Web is the idea that the information is the most up-to-date,

cutting-edge material available. Publishing to the Web is simple and fast and can be revised quickly as new findings occur. In comparison, publishing in print can take years. But just how current is information on the Web? Students need to be cautioned that not all pages contain dates, and dates given on Web pages can have various meanings. A date on a Web page can indicate when the information was actually written, when the page was put on the Web, or when the page was last revised. As students evaluate Web pages, they should ask the following questions:

- Is the date of the latest revision of the site clearly stated?
- Is the date given for when the information was gathered?
- Is the page kept current?
- Are the links current; i.e., do they really work?
- Is this truly the latest information on the topic?

The best site is the one that defines the meaning of the date. If no date is given on a Web site, however, teachers can help students access that information by sending them to the directory in which the site resides. To access the document directory, users should click on “view” in the menu bar, and then click on “pageinfo.” The last modification date of the page should be listed there.

### Coverage

Coverage is one of the slipperiest Web page areas to evaluate. It is difficult to determine the coverage of a Web site, especially for our students who may not be familiar with a research topic. Students need to be fairly familiar with what has been published in print to know if the site covers the topic in depth. Still, the following questions may help students analyze the coverage of a site:

- Is the scope of the topic clearly stated?
- Are supporting materials (bibliography, charts, statistics, graphics, etc.) given?
- Are there links to other resources on the topic?
- Is the site still under construction?

### Web Sites on Evaluation

Although the five criteria we use will help teachers assist students in evaluating sources they find on the

Web, several sites specifically focus on this process. One of the most thorough and comprehensive is Robert Harris’s site, “Evaluating Internet Research Sources” at [http://www.sccu.edu/faculty/R\\_Harris/evalu8it.htm](http://www.sccu.edu/faculty/R_Harris/evalu8it.htm). Harris, who is affiliated with Southern California College, provides extensive background for teachers, almost a mini-course on Web site evaluation. Anything teachers or students might want to know about evaluation of Web sites can be found on this well-maintained site. Another helpful site dealing with evaluation is found at <http://www.lib.lfc.edu/evalweb.html>, published by the Library and Information Technology Staff of Lake Forest College. An important feature on this brief site is the inclusion of good and questionable examples for each criteria, which may make the evaluating of sites clearer for students. Finally, Kathy Schrock’s “Critical Evaluation Information” page, which is located at <http://discoveryschool.com/schrockguide/eval.html>, contains valuable links to other Web sites that discuss evaluating the quality and credibility of Web resources.

### The Research Paper and Web Evaluation

Teachers who want students to incorporate Internet information in papers will want to set up their research assignments carefully. We’ve found that balancing the number and type of resources—electronic and hard copy—in our assignments works well. Initially, as we had students use Internet resources in their papers, we asked them to print out the pages they directly cited or used in their bibliography. These printouts were for the protection of both of us. Web sites can vanish from one day to the next, so having a printout established that the site really did exist. In addition, it was easy for us as teachers to check the source to see how accurately students used the material and how appropriate the wording was. We also felt that asking students to provide printouts of their electronic materials reduced plagiarism. Students determined to plagiarize could still find ways around this safeguard, but for many, being responsible for turning in their electronic research was a sufficient deterrent.

Even with a well-written handout on the research paper assignment, teachers will still want to guide students through some Web evaluation exercises. We found an outstanding activity that two University of Albany, SUNY, librarians—Trudi Jacobson and Laura Cohen—describe in *The Teach-*

ing Professor. They ask students to do some site analysis on a Web site of their choice. Students ask four questions about the site:

- Who posted the information?
- What authority or special knowledge does the author have?
- Does the site show bias or slant?
- When was the site last revised?

After this first analysis, students go to a page the librarians have created for the assignment called “The Psychosocial Parameters of Internet Addiction.” Working in pairs, students analyze information, which is supposed to be an authoritative, annotated bibliography on the topic written by a professor in a Department of “Psychotechnology.” The librarians carefully guide discussion of the individual items and then ask students to click on the “additional information” link where they discover that the page is a fake. Jacobson and Cohen generously “invite others to take a look at and use the page” (4). The address is <http://www.albany.edu/library/internet/addiction.html>.

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We adapted this assignment by bookmarking three distinctly different Web sites and having students compare the pages based on the criteria discussed in this article. We then send students to the bogus “Psychosocial” site to analyze what appears to be a wonderfully helpful bibliography posted on the Web. Done in close succession in one class period, this exercise is an eye-opening contrast for students.

### Web Evaluation Assignments

Teachers will want to create their own Web evaluation assignments appropriate to their classes, stu-

dents, and degree of access to the Internet, but we have used a variety of the following short assignments to help our students become Web savvy. These assignments can be used prior to assigning a research paper, or they can be used independent of a long project. The point of the activities is to make these criteria for evaluating Web sites “stick”; we find it very helpful to have students produce writing assignments that require them to apply evaluation criteria while also learning about a relevant topic. Three such assignments are a summary report, an annotated bibliography, and an evaluation report.

### Summary Report

The goal of this assignment is to determine the extent to which a Web site is helpful for high school students wanting to use it as a resource in writing a research paper. The site might focus on a specific author or piece of literature, on the principles of writing, or on background information about a topic. Students choose one site and first use a checklist to determine factual information about the site. We have used the guide shown in Figure 1 with our students before having them write a short report.

Once they have examined the site carefully and completed the checklist, we have students write a brief report responding to three questions: What kind of information is presented in this site? Is the information credible? How is the site useful for high school students?

### Annotated Bibliography

A productive second assignment is to have students identify a set number of Web sites that focus on a specific topic; e.g., *Of Mice and Men*, The World of Shakespeare, or the use of the comma. Then, depending on the teacher’s goals and students’ level of sophistication, we require students to annotate and present a summary of the site’s content and credibility. This activity works well as a stand-alone project emphasizing research, analysis, and writing skills, but it could also be used to develop a class list of credible Web sites for students to use in their research projects.

### Evaluation Report

An extension of the summary report, the evaluation report is a more challenging and in-depth exercise that works well with more advanced students. While

FIGURE 1.  
INTERNET EVALUATION LIST

Some criteria to look at before citing an Internet document in a bibliography:

**Author**

- What is the author's name? \_\_\_\_\_
- Are the author's credentials listed?      YES    NO
- Is the author's affiliation listed?        YES    NO
- Is there a link to the home page of the author's institution?      YES    NO
- Does the author provide a link to his/her biographical page?      YES    NO

**Document Information**

- List the date of the last revision of the document \_\_\_\_\_
- Does the document have a header or footer with site information?      YES    NO
- Can the information be verified with given references?              YES    NO
- If the document quotes statistics, can you tell if the statistics are from a reliable or credible source?      YES    NO
- Can the information be verified with given references?              YES    NO
- Can you contact the Webmaster from the document?              YES    NO
- Are the links to other documents working?              YES    NO

These items *must be present* in order to give a site validity.

the summary report requires students to look at factual information about one Web site, this project requires them to evaluate *how well* a site meets the five credibility criteria and *how well* it explains information to a high school student. The evaluation process goes into more depth and asks for a critical report that demonstrates a reflective examination of the site from the points of credibility, content, and presentation of information.

Of course, each of these assignments can be tailored to a particular class's needs and a teacher's pedagogical goals. Regardless of how the assignment is customized for a class, the value of these assignments is that they require students to *apply*

lessons on Web site credibility while also developing their critical thinking and writing skills.

**Final Thoughts**

As we think of the research paper assignment today, we realize that much of the process remains the same as it did years ago. We still choose a topic, narrow it, create a thesis, and do research. What has changed are the tools we use. We now have technology to do much of the work for us, and although it is easier to find resources on the Internet, contrary to popular views, the selection of appropriate information has not been simplified with the use of the Web.

Teachers have an immense challenge in helping students develop a critical eye toward what they can access with a few keystrokes. The challenge goes far beyond the use of credible sources for research papers. Students now access the Net to find information on travel, recreation, health, the government, and so on. They will be using the Internet for life, and they need to be able to distinguish the genuine from the bogus on the sites they enter. Teaching students evaluation strategies *is* the critical element in research, for only with such strategies will our students be able to untangle the intricate Web we've woven.

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