



“Get the Edge on Evaluation of Sources”

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Rationale for Evaluating Sources

Faculty have long sought to teach juniors, seniors, and graduate students to differentiate between scholarly sources and those that are written for the popular reading audience. In recent years, this has become more than an upper level course activity. With the phenomenal growth of the Internet and students' propensity to prefer free online sources over library selected resources, it is now a necessity to teach students to evaluate the quality of sources at beginning levels of college coursework.

Stapleton documents the information explosion on the web, giving examples of the overwhelming numbers of hits retrieved when one employs a search engine such as Google to find results for a general topic (135). We followed Stapleton's example, using Google to search for "government disaster relief" in April 2006. We retrieved 120,000 hits—supporting Stapleton's evidential claim that there are thousands of web sources available about topics that commonly interest college students.

Stapleton maintains that the web has gained credibility in the eyes of researchers because it is "officially" recognized by organizations such as APA and MLA, who now provide documentation guidelines for web resources. According to Stapleton, being recognized by these manuals is a major threshold of legitimacy (135).

Tremblay and Downey advocate that "[t]he Internet has developed into a vast document warehouse containing valuable research-based information. It is increasingly being used by undergraduate students as their preferred choice of locating information." These authors teach students enrolled in a "*Research in the Applied Professions*" course to question the authority and credentials of web site authors, noting "students always need to ask questions relating to the reliability of an Internet source as materials can range from government, university, organization, journal, commercial, and personal sites" (Tremblay and Downey).

Faculty and students can be generally confident that print and online resources, housed in a library or available via library subscription databases, are credible and reliable. The credibility of library sources is based on the review of published items by academically trained professionals; the same is not true for web resources. There are no "filters",

such as finding a publisher who will publish one's material on the web. Anyone who has access to space on an Internet service provider can publish on the Internet. In Cyberspace, there are no editors acting as "fact checkers" for claims on web pages (Stapleton 136). For example, we've seen web pages about historical events published by "experts" who have degrees and work in fields totally unrelated to history—not exactly author credentials that certify the author as a "scholar in the field."

After perusing a wide range of web pages, created by librarians for the purpose of teaching web source evaluation, Stapleton advocates that users ask six basic questions:

1. Who is the author?
2. What authority does the site have?
3. How current is the information?
4. What is the intended audience?
5. What agenda (if any) does the author have?
6. Is the content biased? (Stapleton 136)

These six questions highlight the heart of the issues related to web evaluation. However, depending upon the discipline and assignment, several of these issues may be more or less stringently applied.

- ◆ Some topics lend themselves to accepting biased viewpoints, while acknowledging that the bias is present. The question may then become: Is the content unfairly biased?
- ◆ Historical subjects may not require that a source be updated regularly. If the information on the web site answers the research question, it may not be important for whom the information was originally intended.
- ◆ While the company or agency sponsoring a site may not have a well-known reputation, the author may have a well-documented background in the field, thus making the article he has posted a good source. Conversely, a well-respected company or university may place a web page on their site by an author who has no credentials in the field. Even though the sponsor is well known, the author's lack of credentials in the field or subject makes the source unacceptable as a scholarly source.

In light of the considerations described above, the list of criteria could be modified to include:

1. What qualifies the author to write about this topic?
2. Is the information documented by references or a bibliography?
3. Is the site unfairly biased?
4. Is the site sufficiently current for the topic?

One author of this paper is a faculty member who teaches both graduate and undergraduate courses in Information Systems and Business Administration. He has

found that student research papers often include inaccurate and foundationally weak sources. Teaching students to employ a model for source evaluation is a necessary part of preparation for a research assignment. The verification and validation of information is a student skill that must transfer into the workplace where profits and losses depend on quality information.

As part of a team of seven librarians who provide more than 200 information literacy instruction sessions to 3,000+ students each academic year, the other two authors spend many hours teaching students to evaluate sources. Because we see them not only at the freshman, general education level, but also in upper level courses, we need more than one guide for students to use in evaluating web sources. Otherwise, we hear the age-old phrase, "I've done this before...." In the following sections of this paper, we will discuss discipline specific guides for evaluating web sources, tutorial embedded guides, and assignment facilitation guides.

Discipline Specific Guides

A model used with upper level classes in disciplines such as business, education, and history is entitled the The Four W's of Evaluating Information Sources. One of the authors has written guides in each of these areas (Ury, The Four W's). Each of the guides includes the following criteria for evaluating web sites:

- ◆ Who: Who is the author or company responsible for the content?
Authors should have education or experience related to the subject of the source. Institutions, organizations, or companies providing information are credible if they have a respected reputation in the field.
- ◆ What: What references or documentation are provided?
A bibliography or list of works cited should be available or sources of the information should be cited in the text.
- ◆ When: How old is the information?
The age of the information should be appropriate for the topic.
Current information and statistics should be updated within the past year.
Historical sources do not need to be updated unless new data is discovered.
- ◆ Why: Why was the information published?
Question the reliability of information if the author or sponsor attempts to convince readers to:
 - a) adopt a point-of-view.
 - b) purchase a product or spend money.
 - c) financially support a cause.

Each discipline specific guide includes positive and negative examples for the four criteria (Who, What, When, Why). The examples link to the web page described and

explains why the example is a good (positive) or poor (negative) example of that criterion.

These discipline specific guides are designed to be used as discussion facilitators for in-class presentations or to replace a librarian's presentation for online classes. The guide includes all of the text needed for students to understand the four criteria and how they are applied to the evaluation of web pages.

Tutorial Embedded Guides

Northwest online library instruction continually grows with the proliferation of faculty who employ course management software to supplement traditional classroom instruction, as well as online classroom teaching. Librarians have also extended their services beyond face-to-face instruction. To ensure that quality resources are also selected within online courses, a number of general education courses have been targeted to receive source evaluation guides embedded within tutorials.

The English Composition classes are each scheduled for two hands-on library instruction sessions. Prior to the first session, students view the [In the Know: Owens Library Research Tutorial](#) (adapted, with permission, from the [Go for the Gold](#) tutorial authored at James Madison University) and complete a short quiz to certify comprehension of material (Ury, et al.). Two of the learning objectives within the six-module tutorial are for students to choose appropriate sources for their topics and evaluate the reliability of the sources they find.

Similarly, students enrolled in the Fundamentals of Oral Communication course also complete a tutorial, [Searchpath](#), which is linked within the courseware site. The [Searchpath](#) tutorial (based upon the [Searchpath](#) tutorial developed by the Board of Trustees of Western Michigan University which incorporates materials from the TILT tutorial developed by the Digital Information Literacy Office for the University of Texas System Digital Library) consists of six modules (Mardis). After completing module five, students should be able to interpret and evaluate web search engine results. This resource asks students to judge the information that they find by examining the accuracy, authority, objectivity, currency and usage of the document. After providing explanations for each criterion, students are asked to apply the information to five web sites. Students examine each web site, then select an "explanation" link for further feedback on the credibility of the source for research purposes. When students complete the [Searchpath](#) tutorial, they also take a quiz. Students need to receive at least an eighty percent on the quiz or they are required to complete an additional hands-on activity to prove mastery of the contents within the tutorial.

Upper level courses have the option of employing the [Assignment Calculator](#) which is based upon the original [Assignment Calculator](#) from the University of Minnesota Libraries (Mardis, Ury, and Sasser). This resource asks students to choose between developing a research paper or a speech. After students make a selection, they are asked to input the beginning and ending dates of the assignment. They are also asked

to select the assignment's subject area. A schedule is then displayed across the time span of the assignment. The resulting sources within the schedule are based upon resources within the selected discipline. Steps 5, 6, and 7 provide students with directions for finding, reviewing, and evaluating books, periodical articles, and web resources.

Whether students are learning about selecting and evaluating quality resources within English, Communication, or an upper-level area of study, each tutorial provides students with point-of-need information that can be continuously referenced. The criteria's verbiage might differ, but the same principles exist and reinforce the importance of selecting high-quality resources throughout the student's university career. These tutorials provide introductory concepts that are further developed in interactive classroom sessions where students place these guidelines into practice as they search for, select, and evaluate materials that they encounter during their research.

Assignment Facilitation Guides

Librarians at Northwest Missouri State University have been providing information literacy instruction for students enrolled in a 300 level course entitled Management Information Systems for three years. Students enrolled in this course complete an assignment in which they are required to locate a web page on a topic from one of the chapters in their textbook, find a web source on that topic, and summarize the content of that web page—as well as explain how the information on the web page is related to the information about the topic in their textbook. Later in the trimester, when their topic is discussed in class, the students make an in-class presentation about the topic, using information gleaned from their web source.

The web source the students use must meet the criteria outlined on a guide to evaluating web pages entitled Evaluating Sources: It's as Easy as A-B-C (Ury, Evaluating Sources). This site requires students to apply three criteria to their selected source:

- ◆ Authority
Determine that the author's education or professional experience is related to the subject.
- ◆ Bias
Assure yourself that information in the source is supported by fact.
- ◆ Currency
Evaluate the currency of the information and decide if the age of the information is appropriate for the topic.

As a part of their web page summary, students must address the three criteria listed above and demonstrate how the page they have selected satisfies each of these criteria. Librarians spend two days in the classroom, helping students locate credible and reliable sites that address their topic and also meet the A-B-C standards.

Students within the education discipline research topics for papers using a variety of resources. When they incorporate information from web sites into papers, they are asked to submit a completed Evaluating Websites: PART of the Research Process rubric for each web site (Mardis and Ury). This resource asks readers to evaluate web sites based on four criteria:

- ◆ Purpose
The reader determines that the information is relevant to the topic; the author acknowledges the validity of multiple viewpoints; the author does not attempt to sell a product or clearly separates advertising from content.
- ◆ Authority
The author(s) are individuals who have educational background(s) or professional experience in the discipline or the sponsoring organization clearly identifies itself and is run by qualified professionals within the subject area.
- ◆ Reliability
The source provides adequate evidence of claims and contains a bibliography or footnotes to support the author's statements with research; the information is complete; there are few grammatical or spelling errors in the document.
- ◆ Timeliness
The site includes a current copyright, creation date, or revision date; the information is sufficiently current for the topic being researched.

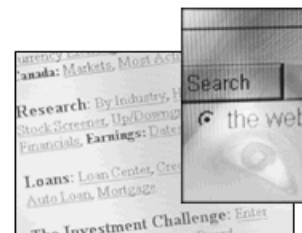
Researchers should be able to check each box within the rubric for acceptable web sites.

An eight year partnership between Northwest librarians and Computer Science/Information Systems faculty has resulted in the development of a third class assignment model. This model is used in a computer literacy general education course. Each year the model is fine tuned and improved. Beginning in 1998 with five criteria—ADAPT: Authority, Design, Accuracy, Purpose, and Target, the class is currently focused on three criteria—AAA: Authority, Accuracy, and Audience. The students are asked to deploy the model using the information in Figure 1 below.

FACTORS TO CONSIDER IN EVALUATING WEB SITES

AUTHORITY

1. **Credentials**—One of the following criteria must be identified:
 - a. Author credentials (educational level, occupation experience) should match the subject of web site and qualify them as experts in this field
 - b. Sponsoring organization is run by professionals qualified as experts in this field of study
2. **Domain**—Select one of the following domain types:



- a. Commercial & network domain including information promoting businesses
 - b. Educational & organizational domain including material supporting knowledge & learning
 - c. Governmental domain including statistics, public information, tourism, or historical data
 - d. Military site including historical data and information about the armed forces
3. **Contact Information**—Contact information (phone number, postal address, or email address) is provided. Contact information may be available on the homepage of the site.

ACCURACY

1. **Bias**— Determine if the information provides only one viewpoint. That information may be unfairly biased if:
- a. An opinion, cause, or social agenda is advocated without providing documented facts.
 - b. Advertisements are not distinctly separated from the content.
 - c. The sponsor sells a product related to the content.
2. **Verification**—One of the following criteria should be present:
- a. List of Works Cited (This is like a bibliography or a reference list in a term paper). Cited works must refer to specific information presented on the site. ***A list of related web links only does not constitute a Works Cited list.***
 - b. Information can be verified in an academic database like EBSCOhost or InfoTrac. To receive points using this option provide the author and title of an article or book you find that substantiates specific information in your chosen site and indicate which database you used to locate the article or book (for instance, the Academic Search database on EBSCOhost).
3. **Date:** Creation/Updated date should be appropriate for page content.

AUDIENCE

1. **Relevancy** - locating information that mentions a topic doesn't guarantee that the information is relevant or supportive of the specific research purpose.
2. **Type of Web Site** – while many sites blend the categories below, choose one of the four types as the primary focus of the web site:
- a. Informational/Educational
 - b. Political
 - c. Recreational
 - d. Commercial
3. **Audience Characteristics** – determine if there is a common interest, age, or gender of the group targeted by your selected web site.



Fig. 1: Factors to Consider in Evaluating Web Sites

Prior to class, students view a search engine tutorial about locating web sites using targeted search engine techniques (Johnson and Nguyen); preview the application of the AAA model (see Figure 1) in an online lecture; and interact with a web page entitled Evaluating Web Sites (Ury, Baudino, and Johnson). During class, librarians help students practice applying the evaluating web sites criteria in groups of six. The class completes the assignment in teams of two or three students, documenting how they found information about each of the specific subheadings—credentials, domain, contact information, bias, verification, date, relevancy, type of web site, and audience characteristics.

Conclusion

Seniors in capstone research classes and graduate students have been regularly taught to scrutinize the validity of sources; to question the credentials of authors; and check the references used in sources. The information explosion brought on by the World Wide Web over the past ten years has altered the venue in which students conduct research. Teaching the skills necessary to adequately filter and evaluate this new flood of information has evolved to match the new research models employed by 21st century students. We can no longer expect students to find their resources in library books and indexes, assured that the resources they use will be credible and reliable because they have been reviewed by professional editors and librarians.

The policies of publishers and editors who check the backgrounds of authors and references for printed sources do not apply to the world of the web and the Internet. Researchers must become detectives who certify the credibility and reliability of the online web resources they select for their research. The face of information literacy instruction has been altered by this paradigm shift. Beginning level students must be taught to become diligent detectives who seek out the credentials of authors; search for documentation of facts and claims; scrutinize sources for unfair bias; and carefully check the date of sources.

Student researchers learn best when given a model to employ while learning new skills. The authors of this paper have presented a wide range of models they use with beginning through upper level students. They use differing models to provide variety in their instruction. The concepts, however, return to the same four basic criteria which all researchers should seek to apply to their scrutiny of sources:

1. What qualifies the author to write about this topic?
2. Is the information documented by references or a bibliography?
3. Is the site unfairly biased?
4. Is the site sufficiently current for the topic?

The ability to answer each of these questions effectively can help students use their problem solving skills to become successful researchers.

Reference List

- Johnson, Carolyn, and Thuy Nguyen. Search Engine Tutorial. May 2006. Northwest Missouri State U. 1 May 2006. <<http://www.nwmissouri.edu/library/search/set.htm>>.
- Mardis, Lori. Searchpath. May 2003. Northwest Missouri State U. 1 May 2006. <<http://www.nwmissouri.edu/library/courses/communication/searchpath/>>.
- Mardis, Lori, Connie Ury, and Patrick Sasser. Assignment Calculator. Jan. 2006. Northwest Missouri State U. 1 May 2006. <<http://www.nwmissouri.edu/library/courses/research/assignmentcalc/>>.
- Mardis, Lori, and Connie Ury. Evaluating Websites: PART of the Research Process. Jan. 2003. Northwest Missouri State U. 15 May 2006.
- Stapleton, Paul. "Evaluating Web-Sources: Internet Literacy and L2 Academic Writing." ELT Journal. 59.2 (2005): 135-143. Academic Search Premier. EBSCOhost. Owens Lib., Maryville, MO. 17 Apr. 2006.
- Tremblay Jr., Kenneth R. and Eleanor P. Downey. "Identifying and Evaluating Research-Based Publications: Enhancing Undergraduate Student Critical Thinking Skills." Education 124.4 (2004): 124- . Academic Search Premier. EBSCOhost. Owens Lib., Maryville, MO. 16 Apr. 2006.
- Ury, Connie. Evaluating Information Sources: It's As Easy as A-B-C. Mar. 2006. Northwest Missouri State U. 1 May 2006. <<http://www.nwmissouri.edu/library/courses/evaluation/evaluate.htm>>.
- . The Four Ws of Evaluating Information Sources: Business Information Sources. Mar. 2006. Northwest Missouri State U. 1 May 2006.

<<http://www.nwmissouri.edu/library/courses/evaluation/businesswww.html>>.

---. The Four Ws of Evaluating Information Sources: Education. Mar. 2004. Northwest Missouri State U. 1 May 2006. <<http://www.nwmissouri.edu/library/courses/evaluation/EDWWW.HTML>>.

---. The Four Ws of Evaluating Information Sources: History. Oct. 2005. Northwest Missouri State U. 1 May 2006. <<http://www.nwmissouri.edu/library/courses/evaluation/humanitieswww.html>>.

Ury, Connie, Frank Baudino, and Carolyn Johnson. Evaluating Web Sites. Apr. 2006. Northwest Missouri State U. 1 May 2006. <<http://www.nwmissouri.edu/library/courses/usingcomputers/evalonline.htm>>.

Ury, Connie, et al. In the Know: A Web-based Tutorial for English Composition Students. Sept. 2005. Northwest Missouri State U. 1 May 2006. <<http://www.nwmissouri.edu/library/courses/english/intheknow/module1/1.0.htm>>.