

Analyzing Scientific Claims, Evaluating Web Sites and your writing assignments

If you extract information from a web site to include in your writing assignments, and use that information to support your ideas, you must analyze the credibility of that web site according to the criteria discussed below.

Anybody can make an assertion that claims to have scientific data to back it up. The letters to the editor page of the local newspaper is a good place to see a variety of claims, some which are quite believable and others that completely misunderstand and/or distort research result. As a science literate citizen of the world, it is important to gain skill analyzing science claims. The coming debate over global warming will certainly bring out many opposing views, and it will be up to you to cast your vote intelligently and help others to do so also.

Does the claim make sense, based on your prior knowledge? The difficulty is that you may not have prior knowledge. It may take an expert to decide. But, common sense is important and most likely you know enough to get an initial impression, at least.

Is the claim backed up by scientific research or scientific observations? If so, you can go on to assess the validity of the references to published research. Have you ever read one of the diet books that claim miracle cures for everything that ails you, if you just eat enough whatever. There are copious references to health studies. But, most of these claims are challenged in other diet books with an equal number of scientific sounding references. What to do? Turns out that a scientific study is not scientific just because it is published. The best kind of publication reference is a scientific journal where research results are peer reviewed and often duplicated by others who are practicing scientists in that field. With the Internet, it is possible to search and find web pages for most publications, so you can check whether the reference is to a journal used by practicing scientists. It is also easy to check the web page of an author's claimed affiliation to assess its point of view.

Make an author analysis: is the author unbiased? Scientific information is often written by science writers who read and translate scientific results so they are interesting for the non-specialist. Others may have a point of view to espouse and may present only one side of an issue that has not been completely resolved. Sometimes the evidence is either incomplete or the problem is extremely complex. Global warming is a good example of this. If the author is speaking in favor of the use of nuclear energy to solve California's energy problems, and he/she represents the National Nuclear Advisor Board, you can expect that the information will present the best argument for building more nuclear power plants. So-called Creation Scientists distort and misunderstand paleontological data (and science itself), yet can appear quite credible to the average person. The best approach is to listen to many sides of the issue. Form your opinion only after hearing each side respond to the other, so that all "facts" are available to you.

Analyze author credentials; You may disagree, but I personally feel that a researcher, who is not employed by anyone who will benefit by the conclusions of a study, to be credible. There may be legitimate controversy, but most scientists' careers are based on peer review and finding good supporting evidence for their theories. On the other hand, you can be pretty sure that a radio commentator like Rush Limbaugh would be biased.

Internet references:

An action-alert posted on the web:

American Psychological Association, (1995) *APA public policy action alert: Legislation would affect grant recipients* [Announcement]. Washington, DC: Author, Retrieved January 25, 1996 from the World Wide Web: <http://www.apa.org/ppo/istook.html>

An article from a newspaper on the web:

Sleek, S. (1996, January). Psychologists build a culture of peace. *APA Monitor*, pp. 1,33. Retrieved January 25, 1996 from the World Wide Web: <http://www.apa.org/monitor/peacea/html>

