

Using the Web for Research Directions for Teaching

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➤ **Please note:** The PowerPoint slideshow used in this lesson...

Using_the_Web_for_Research.ppt

...can be downloaded via ftp by pointing your Web browser to:

<http://ljhs.sandi.net/faculty/SGrant/UsingtheWeb.htm>

Other related files available there are:

- **Teaching_Instrs.doc**... this document;
- **Search_Check.doc**... Two-page student worksheet they can fill out as they're working with search tools you've introduced them to;
- **Overall-Stud_Hand.doc**... Ten-page student handout containing just the names of the search tools and their URLs (but none of the explanatory text), and the full text of the slides on evaluation, citation, and steps in the research process;
- **Eval_chklist_only-Stud_Hand.doc**... "Student Checklist" handout of "Evaluating Web Pages"—things to consider as you look at a Web page in order to decide whether it's valuable as an information source. Two pages, so it can be a two-sided, single-sheet handout students can keep handy as they work at a computer.
- **Steps_Rsrch_Proc-Stud_Hand.doc**... Three-page student handout of just the "Steps in the Research Process."

The ".doc" files listed above are in Microsoft Word format, so—provided you have Word—you can edit them if you choose. If you don't have Word or for some reason you have trouble viewing and printing them correctly (font issues, etc.), the same files are also there in PDF format (".pdf") so you can open them in Adobe Acrobat Reader (free; download from <http://www.adobe.com/products/acrobat/readstep2.html>). However, you'll need the "full" version of Adobe Acrobat (not free) if you need to edit them as PDF files.

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Objectives:

1. Introduce students to the three major kinds of Web search tools, demonstrate the use of two in some depth and acquaint them with a number of others, and teach Boolean operators, phrase, etc.
2. Provide students with a basic set of Web page evaluation criteria.

3. Provide students with several guides for citing both Web and print sources in MLA style, and show them two interactive bibliography generators (one—NoodleBib—is subscription-based, but worth it!).
4. Acquaint students with and/or review the overall research process.

Target grade levels: High school and college freshmen (possibly useful at 8th grade, with modifications).

Materials required:

1. Presentation/demonstration computer with Internet access, PowerPoint 97/above, and whole-class large-screen projection display capability (LCD projector or LCD panel with overhead projector, large projection screen... “kids in the back” need to be able to read small Web page *text*.)
2. PowerPoint file “Using_the_Web_for_Research.ppt” (125 slides.)¹ When the lesson calls for bringing up a Website, you can click on the site’s URL in the PowerPoint slide; since it’s a “live” link, it will switch to your Web browser and bring up the site. The lightning-bolt symbols on the slides are where I generally switch to the Web browser to demonstrate.
3. Student handouts²: You could use printouts of the PowerPoint slides--text (“Outline View”) or slide images. If you choose to provide handouts this way, you’ll probably want to provide students with just a handout of the slides you plan to cover during that class meeting, so as not to overwhelm them and to keep them focused.

Alternatively, you can use the Word or PDF files. “Overall-Stud_Hand” contains the contents of the other two Word student handouts “Eval_chkfst_only-Stud_Hand” and “Steps_Rsrch_Proc-Stud_Hand”, plus the names and URLs (only) of all the Websites used in the lesson. Although they’re contained in the “Overall” handout, the Evaluation and “Steps in the Research Process” handouts are here as separate documents in case you want to hand them out separately. The Evaluation handout makes a handy two-sided single sheet: it’s especially useful for students to have the Evaluation notes on paper so they can use them as a “checklist” of things to ask themselves as they view and evaluate a Web page. If the instructor is explicitly teaching the research *process* as he/she walks students through the various stages of their project, it would be good for them to have just those steps as a separate handout, too.

”Search_Check” is designed as a “worksheet” for students to fill out and hand in as they’re working with search tools you’ve taught them *that day*. If you decide to use it, print two or three copies for each student (one for each day you’ll be teaching the search tools). Its purpose is to give students something to turn in each day you teach this section

¹ Instructor given permission to modify and use as long as he/she acknowledges Steve Grant as original author on title slide.

² Instructor given permission to modify and use as long as he/she acknowledges Steve Grant as original author on first page of text.

of the lesson. It can help keep them focused and on task, and it gives you a way to check their progress in using these tools as they research their project.

4. Classroom-teacher-assigned research project. Some might consider this optional, but see the first of the bulleted “Notes” in the later section of this document below titled “Activities/Steps to Follow”.

☞ Note: With the exception of the “Search_Check” handout, the lesson materials here do *not* include student activities/exercises, quizzes, etc. to direct student practice and/or check understanding of the basic concepts and search techniques taught, or practice using one of the online bibliography generators (EasyBib is free; NoodleBib requires a paid subscription, but in my estimation is well worth the cost.) Ideally, students will put what they’ve learned to use as they pursue an assigned research project, but in practice it would probably be a good idea to give them some additional exercises and/or quizzes along the way. I simply haven’t had time to create these, but I recommend that you do so if you can. Yours will be better anyway because you’ll design them for *your* students and *your* situation.

Internet sites used:

InfoPeople Search Tools Chart: www.infopeople.org/search/chart.html

Yahoo!: www.yahoo.com

Librarians’ Index to the Internet: lii.org

Academic Info: academicinfo.net

INFOMINE: infomine.ucr.edu

Alta Vista: www.altavista.com

Seven Steps Toward Better Searching: webquest.sdsu.edu/searching/sevensteps2001.html

Google: www.google.com

Four NETS for Better Searching: webquest.sdsu.edu/searching/fournets.htm

Teoma: teoma.com

Fast / AlltheWeb: www.alltheweb.com

HotBot: www.hotbot.com

Search Engines Quick Guide: www.infopeople.org/search/guide.html

Ixquick: ixquick.com

Vivisimo: vivisimo.com

Ask Jeeves!: www.askjeeves.com

Mamma.com: www.mamma.com

MetaCrawler: www.metacrawler.com

Dogpile: www.dogpile.com

Choose the Best Search for Your Information Need:

www.noodletools.com/debbie/literacies/information/5locate/adviceengine.html

Specialized Search Engines and Directories: webquest.sdsu.edu/searching/specialized.html

Thinking Critically About World Wide Web Resources:

www.library.ucla.edu/libraries/college/help/critical/index.htm

Citing Sources: www.winsor.edu/pages/library.cfm

A Guide for Writing Research Papers...: webster.commnet.edu/mla/index.shtml

Citation Styles—Online!: www.bedfordstmartins.com/online/citex.html

NoodleBib: www.noodletools.com ← *NoodleBib itself is a subscription-based resource*

easybib.com: www.easybib.com

SCORE Graphic Organizers: www.sdcoe.k12.ca.us/score/actbank/torganiz.htm
Graphic Organizers—Concept Map: <http://www.graphic.org/concept.html>

Time required: I recommend three to five 55-minute class periods to present and teach the PowerPoint-based lesson. The first section on Search Tools covers a heck of a lot of ground; I've found it best to split this into two to three periods, with some time for hands-on practice at the end of each (if you can teach it in a lab setting.) During the second or third period I usually get beyond the end of the Search Tools section, into or through the Evaluation section, and sometimes into (sometimes all the way through) the Citing Web Pages section. The fourth or fifth period, I complete the last section, Steps in the Research Process. You'll probably want to "practice to an empty room" to determine your own timing so you can schedule accordingly.

If you don't have this much time for the complete lesson—and/or feel your students will suffer from "information overload"—you can always "hide" (or delete) some of the slides. If you need to do this, I recommend you hide some of the slides introducing some of the search tools. For example, for the indexes, you might want to show them only Yahoo! and the Librarians' Index; for the keyword engines, only AltaVista, Google, and Teoma (even if they all think they already know all about Google, I wouldn't skip it because you'll show them some valuable techniques they probably *don't* know about... and don't know that they don't know!); and for the meta-search engines, show them only Ixquick and Vivisimo. I recommend you do *not* omit the slides on Yahoo!, AltaVista, or Google since the first two teach important concepts about using a subject index and performing keyword searches using Boolean terms and search operator shortcuts... and everyone needs to know how to use Google more efficiently.

Activities/steps to follow:

Notes:

- This lesson is most effective when taught in the context of a freshly-assigned research project assigned by a classroom teacher. Students learn even more if they each have access to their own computer *soon* (e.g. the latter part of the period), to begin applying what they learned on a "real" assignment in a "real" class for "real" points toward their "real" grade in that class. If this lesson is taught "in isolation", i.e. without a research project being assigned at the outset, my experience has been that their learning and/or retention is minimal. They'll feel no particular immediate need to learn what you're teaching, and by the time they *are* assigned a research project (which depending on your school could be weeks, months, or even a year or more later), they'll have forgotten most of the necessary detail... and may well have lost the handouts as well. Ideally, this lesson should be planned and taught *collaboratively* by the library media teacher—who is expert in not only the research process but also the library's *print* resources—and the subject-matter-expert classroom teacher.
- Notetaking skills and the ability to cite sources correctly according to MLA (or another) style in a bibliography are essential ingredients for any research project. If you feel your students need practice and/or review of these, take a look at three documents I have posted for download at <http://ljhs.sandi.net/faculty/SGrant/SharedProf.html>.
- While most of the search examples used in this lesson relate to "energy" topics, you can easily modify them for other kinds of topics if you choose.

- I recommend that students *not* be sitting at individual computers powered-up and ready-to-go while you teach with the PowerPoint slides. If this is taught in a computer lab, all student computers should be *off*—if possible—when you’re presenting, so they’ll focus on what’s being taught. In this situation, students should be told up front that even though they’ll be in the lab, they will only be using the computer themselves toward the end of each period.
- Slides #2 through # 13 are “hidden”; they’re slides I use when presenting this lesson at conferences and workshops. In all of PowerPoint’s editing views (“Slide”, “Outline”, “Slide Sorter”, and “Notes Page”) they show, but when you’re presenting “Slide Show” view) they don’t. Leave them hidden when you’re teaching the lesson to students. If you wish to use the PowerPoint slides to share this lesson with other educators, you have my permission to do so—just please leave my name on the title slide and show it to them. The easiest way to Unhide the slides is by going into the Slide Sorter view, where the slide numbers of hidden slides (lower right corner underneath each slide) are in boxes with lines through them. To Unhide a slide, click on it to select it. Then under the “Slide Show” menu, click on “Hide Slide”. (In PowerPoint 97 at least, it’s a toggle function with a confusing label which doesn’t change: if the slide is already hidden, the menu choice will still say “Hide Slide”, even though in this case clicking on it will in fact *Unhide* the slide.)
- Because it should be done and also to serve as a model for students, I’ve included two pages of “Works Cited” screens at the very end. On earlier slides where I’ve given a statistical fact, I’ve used inline (or “parenthetical”) citations that refer to the sources on the Works Cited slides. When you’re presenting in full-screen “Slide Show” view, these inline citations are live links to the appropriate Works Cited screens; if during the presentation a student asks where that fact came from, you can click on the inline citation to jump to the Works Cited slide containing the full bibliographic entry. To get back to the slide you came from, at the end of that entry there’s a link that, if clicked, will take you back to the slide you were on when the question was asked, without your having to leave full-screen “Slide Show” view.

Daily teaching procedure:

1. Have computer and projector up and running before class arrives. Have browser open to first site (www.infopeople.org/search/chart.html.) Have PowerPoint title slide filling screen (i.e. in foreground, in “Slide Show” mode.)
2. Present and teach as many slides as you have time for; again, if you’re in a computer lab, I suggest you stop early enough to allow at least ten minutes of individual use/practice... longer if you’ve prepared an exercise or quiz for them to complete. (Note that on Day 1, as long as you’ve left slides #2 through #13 hidden, the presentation will automatically skip from slide #1, the title slide, to slide #14, the beginning of the lesson.) Using “task-switching” (<Alt>-<Tab> in Windows, <Command>-<Tab> on the Mac) to toggle between the browser and the slideshow as necessary without losing the full-screen “Slide Show” mode of PowerPoint. Lightning-bolt icons are suggested places to switch to the browser to show them what you’ve just been talking about, do the demo search, etc.

3. On the days you teach the Search Tools portion of the lesson, if you want to have them complete the “Search_Check” worksheet and turn it in to you at the end of the period or the beginning of the next day, plan on stopping your slides presentation about five minutes earlier on the first day. You’ll need that time to hand them each several copies of the worksheet and explain it.

If you want to save students from having to take detailed notes on all the information in the slides (especially of URLs), you can give them a handout at the end of each of the days you present the Search Tools content. I suggest either just printing the “outline” version of those PowerPoint slides, or perhaps just the portion of “Overall-Stud_Hand” which includes the names and URLs of the search tools you covered but nothing else. Even if you give them the “Overall” handout, however, there *are* a few slides with critical information they should write down which is not in the handout; I’ve indicated those slides by including a graphic, along with “Take notes on this slide!” Encourage them to try using some of the search tools to begin researching their topic between now and the next class session; if you’re in a lab situation where each student has his/her own computer, they should begin immediately. If you give them all the pages of the full Overall-Stud_Hand”, there’s the distinct possibility they might glance through it all before tomorrow and then think they don’t need to pay attention the following days, claiming, “I’ve already read all that!”

At the end of the day you teach the Evaluation content, I recommend you give them the “Evaluating Web Pages” (Eval_chklst_only-Stud_Hand) handout, as a two-sided single sheet. Recommend that they keep it handy when they’re viewing Web pages for research, to use as a sort of checklist to help them decide whether a given page is worth using or not. At the end of the last day of instruction, give them the “Steps in the Research Process” handout, as a guide for this and all future research projects.

Encourage them to refer to the handout(s) frequently as they work on not only this but other research projects... and not only for Web research. The “Steps in the Research Process” apply regardless of the media of the information resources, and the style guides and interactive bibliography generators give guidance on how to cite print—as well as Web—sources.

Ideas for follow-up/extension activities:

Any and all research projects—including that which (ideally) was assigned at the outset of this lesson—are “follow-up/extension” activities. Students will benefit from this lesson most when subsequent research projects are taught with explicit reference to portions of this lesson.

As students use the various “Search Tools”, they can keep a list or table of results indicating which search terms (or index subject headings) with which tools gave what number of *useful* hits within the first 20 Web pages examined in each tool’s hit list. If they know of or discover other tools which work better, they should by all means list these as well and include reasons for why these worked better for them. (There are bound to be a number of new tools I haven’t included in the lesson here which you might add or point them toward.)

“Steps in the Research Process” can be broken down and individual portions can be demonstrated/submitted (for “points!”) by students to the classroom teacher as they progress on a research assignment. An initial graphic organizer” (perhaps a cluster) showing initial brainstorming/term generation can be submitted. Hardcopy of a Web page the student considers

useful can be submitted along with a brief rationale of how/why it measures up to the evaluation questions. Web page hardcopies can each have information unique to them highlighted, and underlined portions can be number-coded as a way of grouping/sequencing as students organize the flow of their own “product” (be it traditional paper or multimedia presentation.) An outline can be submitted as the student product begins to take final form (if the product is a presentation, this outline plus the “Works Cited” list may be all the final product that’s required in addition to making the presentation itself.) A short journal-type reflection essay might be required where the student relates his/her own experiences during the process, and evaluates his/her product (with ideas as to how he/she might do things differently next time.) For student presentations to the whole class, a rubric might be developed (many examples are available on the Web) which all students—in addition to the teacher—might use to rate each one’s presentation.