

4-STEP INFORMATION LITERACY ACTION STUDY

McPherson, H., & Dubé, M. (2016). Reducing The Information Literacy Gap In High School Students. *Knowledge Quest*, 45(2), 48-55.

Step 1: The Planning Process

Students were asked to reflect and answer the following questions related to their assignment:

- What do you already know about the topic?
- How detailed does the information need to be?
- In what field is the research being conducted?
- What kind of sources do you need to consult?
- Do you need to browse the Internet?

After students had a clear idea about their research topics we moved on to finding background information. We advise students to consult general and/or specialized dictionaries, encyclopedias, and Web directories to orient themselves in the context of their topics and to help gather terminology to use when searching the Web. The following are examples of suggested resources to get students started:

Merriam-Webster's online dictionaries and thesaurus [free] <merriamwebster.com>

Encyclopaedia Britannica's Britannica School [subscription database]

<www.school.eb.com>

Historica Canada's Canadian Encyclopedia [free]

<www.thecanadianencyclopedia.com>

(one example of a specialized encyclopedia)

Wikimedia Foundation's

Wikipedia [free] <<http://en.wikipedia.org>>

We encourage students to look at Wikipedia to familiarize themselves with a topic but warn them not to use Wikipedia as a reliable reference in their final project. In our experience, high school students are generally unaware of the pitfalls of Wikipedia: anyone can be an author, and information can be manipulated despite Wikipedia's move to more-stringent standards. In our school a paid subscription to Britannica School is available, and students are strongly encouraged to use this more-reliable source for information they use in their projects. Web directories are also introduced as a way of easing the problem of browsing the Web and, unintentionally, encountering—and possibly believing—sources that are not authoritative. Topics in Web directories are organized by subject and are maintained by humans rather than software (Boswell 2014). Students look at sites containing resources organized by categories accessible through menus. Examples include: HowStuffWorks. [free] U.S. National Library of Medicine's MedlinePlus: Trusted Health Information for You. [free] We provide students with a summary of advantages and disadvantages of commonly used information sources (see

Appendix A). This summary helps students pinpoint the type of resources that best suit their needs.

Step 2: Search Terms and Search Engines

Following step 1, students learn techniques to search more effectively for information on their assigned topics. The following points are introduced and emphasized with examples:

1. Convert ideas to KEYWORDS
2. Choose unique terms (e.g., global warming)
3. State the context, if necessary (jaguar: cat or car?)
4. Consider using phrases: top ten, review, best, how to
5. Use AND to narrow your search; use OR to broaden your search. Entering AND, OR, NOT in all capital letters is important so search engines don't ignore these "little" words (UK Sourcers 2016).

We also review the possible range of available search engines. Examples include:

- Google
- Google Scholar
- Sweet Search: A Search Engine for Students
- Ask.com The following tips for using search engines are reviewed:
- The order in which items appear in the results list is based more on popularity than quality.
- A search engine is a tool; it should never appear as a source in a bibliography.
- There are many specialized search engines. (The majority of students are not aware of Google Scholar, and we, therefore, give concrete examples of the benefits of quality information accessible through Google Scholar.) Shortcuts that most search engines employ are introduced. We use examples from Google:
- Dictionary, calculator, clock, "I'm Feeling Lucky" button
- Exact phrase: "underground railroad"
- Numbers: +2
- Synonyms: ~investigation
- Conversions: 2 ounces in grams
- Specific file type: diabetes filetype:ppt
- Exclude adult content: safesearch:teen sexuality
- Specific domain: site:gov
- Info about a website: info:www.howstuffworks.com

Step 3: Evaluation of Sources

High school students generally don't understand that certain websites have more or less legitimacy in terms of bias, quality, or accuracy of information. We explain the CRAAP test (below) developed by the staff of the Meriam Library at California State University, Chico, and we emphasize the importance of assessing the quality of resources found—especially online resources.

CRAAP test:

Currency: Timeliness of the information

Relevance: Importance of the information for your needs

Authority: Source of the information

Accuracy: Reliability, truthfulness, and correctness of the content
Purpose: The reason the information exists (Meriam Library 2010)

Tips for evaluating resources are also provided:

- Look at the URL (Uniform Resource Locator). The Web address indicates a company, institution, or person, and, often, the purpose of the site.
- URL endings are usually an indication of purpose: .org, .edu, .gov, .qc.ca, .gc.ca. • Check the About Us feature on a website's homepage.
- Use our Website Checklist. (See Appendix B.)

Step 4: Fair Use: Why and How We Cite Sources

Students new to research might have weak notions of plagiarism and the necessity to cite works used in their research. We have all seen neophyte researchers cut and paste part of a website directly into their assignments. (At times neither font size nor color matches the body of the project!) According to Liz Sonneborn plagiarism is: "If you use another person's [words or] ideas, you have to make that clear in your text with citations and you have to provide information about where the reader can find those sources with a bibliography" (2011, 11). Plagiarism could also be understood as using "the words or ideas of another person as if they were your own words or ideas" (Merriam-Webster 2015)

Following our lesson, student assignments show a marked reduction of attribution errors. Students are taught:

- To clearly identify the sources used.
- To cite both published and unpublished sources.
- To avoid plagiarism.
- To lead readers to more information on the same or similar subjects.
- When in doubt, cite!

The final lesson segment introduces citing sources in an official format. High school students are required to provide a bibliography as an integral part of research assignments. Prior to this series of lessons, students tended to provide a simple list of book titles or website URLs in their bibliographies, in no particular order. For many students, bibliographies for science fair projects are their first exposure to higher standards of research.

During our instruction students are asked to compare the following examples and are then provided tips for bibliographies in general.

book, no format:

Cystic Fibrosis by Justin Lee

book, with mla format:

Lee, Justin. Everything You Need to Know about Cystic Fibrosis. *New York: RosenPub. Group*, 2001. Print.

website, no format:

<http://www.thecanadianencyclopedia.ca/en/article/>

montreal website, with mla format:

Montreal." The Canadian Encyclopedia. N.p., n.d. Web. 22 Oct. 2014.
<<http://www.thecanadianencyclopedia.ca/en/article/montreal/>>.

Invaluable tips for students learning to create bibliographies:

- Record sources as you are doing your project; do not wait until the end.
- Place your sources in alphabetical order.
- For a website, record the date you used it.
- Try to use sources that provide their own citations:
 - databases and e-books with an auto-cite feature
 - scholarly articles that provide their own citations
- Use the citation format you are told to use. (We teach students

MLA format because free citation builders such as EasyBib offer MLA free of charge. Also, Britannica School's auto-cite default is MLA.)

Online citation builder tools are explained using free services such as:

EasyBib: The Free Automatic Bibliography and Citation Generator <easybib.com>

Citation Machine <www.citationmachine.net>

Finally, students are directed to further resources when help is required with specific IL questions:

- "How to" videos on YouTube
- Google search support
- School, college, or public librarians—They are there to help!