3.3: Seven Steps of the Research Process

Skills to Develop

- Find appropriate information for a college-level research paper.
- Cite sources using standard citation rules.

The following seven steps outline a simple and effective strategy for finding information for a research paper and documenting the sources you find. Depending on your topic and your familiarity with the library, you may need to rearrange or recycle these steps. Adapt this outline to your needs.

STEP 1: IDENTIFY AND DEVELOP YOUR TOPIC

State your topic idea as a question. For example, if you are interested in finding out about use of alcoholic beverages by college students, you might pose the question, “What effect does use of alcoholic beverages have on the health of college students?” Identify the main concepts or keywords in your question. In this case they are alcoholic beverages, health, and college students.

STEP 2: FIND BACKGROUND INFORMATION

After you identify your research topic and some keywords that describe it, find and read articles in subject encyclopedias, dictionaries, and handbooks. These articles will help you understand the context (historical, cultural, disciplinary) of your topic. They are the foundation supporting further research. The most common background sources are subject encyclopedias and dictionaries from our print and online reference collection. Class textbooks also provide definitions of terms and background information.

Look up your keywords in the indexes to subject encyclopedias. Read articles in these encyclopedias to set the context.
for your research. Note any relevant items in the bibliographies at the end of the encyclopedia articles. Additional background information may be found in your lecture notes, textbooks, and reserve readings.

**tip: EXPLOIT BIBLIOGRAPHIES**

- Read the background information and note any useful sources (books, journals, magazines, etc.) listed in the bibliography at the end of the encyclopedia article or dictionary entry. The sources cited in the bibliography are good starting points for further research.
- Look up these sources in our catalogs and periodical databases. Check the subject headings listed in the subject field of the online record for these books and articles. Then do subject searches using those subject headings to locate additional titles.
- Remember that many of the books and articles you find will themselves have bibliographies. Check these bibliographies for additional useful resources for your research.

By using this technique of routinely following up on sources cited in bibliographies, you can generate a surprisingly large number of books and articles on your topic in a relatively short time.

**STEP 3: USE CATALOGS TO FIND BOOKS AND MEDIA**

Use guided keyword searching to find materials by topic or subject. Print or write down the citation (author, title, etc.) and the location information (call number and library). Note the circulation status. When you pull the book from the shelf, scan the bibliography for additional sources. Watch for book-length bibliographies and annual reviews on your subject; they list citations to hundreds of books and articles in one subject area.

**STEP 4: USE INDEXES TO FIND PERIODICAL ARTICLES**

Use periodical indexes and abstracts to find citations to articles. The indexes and abstracts may be in print or computer-based formats or both. Choose the indexes and format best suited to your particular topic; ask at the reference desk of your library if you need help figuring out which index and format will be best.

You can find periodical articles by the article author, title, or keyword by using periodical indexes. If the full text is not linked in the index you are using, write down the citation from the index and search for the title of the periodical in your library’s catalog.

**STEP 5: FIND INTERNET RESOURCES**

Use search engines. Check to see if your class has a bibliography or research guide created by librarians. Some search tools include:

- Search Engines – Comparison table of recommended search engines; how search engines work
- Subject Directories – Table comparing some of the best human-selected collections of web pages
- Meta-Search Engines – Use at your own risk: not recommended as a substitute for directly using search engines
- Invisible Web – What it is, how to find it, and its inherent ambiguity (searchable databases on the Web).
STEP 6: EVALUATE WHAT YOU FIND

CRITICALLY ANALYZING INFORMATION SOURCES: INITIAL APPRAISAL

Author

- What are the author’s credentials—institutional affiliation (where he or she works), educational background, past writings, or experience? Is the book or article written on a topic in the author’s area of expertise? You can use the various Who’s Who publications for the U.S. and other countries and for specific subjects and the biographical information located in the publication itself to help determine the author’s affiliation and credentials.

- Has your instructor mentioned this author? Have you seen the author’s name cited in other sources or bibliographies? Respected authors are cited frequently by other scholars. For this reason, always note those names that appear in many different sources.

- Is the author associated with a reputable institution or organization? What are the basic values or goals of the organization or institution?

Date of Publication

- When was the source published? This date is often located on the face of the title page below the name of the publisher. If it is not there, look for the copyright date on the reverse of the title page. On Web pages, the date of the last revision is usually at the bottom of the home page, sometimes every page.

- Is the source current or out-of-date for your topic? Topic areas of continuing and rapid development, such as the sciences, demand more current information. On the other hand, topics in the humanities often require material that was written many years ago. At the other extreme, some news sources on the Web now note the hour and minute that articles are posted on their site.

Edition or Revision

- Is this a first edition of this publication or not? Further editions indicate a source has been revised and updated to reflect changes in knowledge, include omissions, and harmonize with its intended reader’s needs. Also, many printings or editions may indicate that the work has become a standard source in the area and is reliable. If you are using a Web source, do the pages indicate revision dates?

Publisher

- Note the publisher. If the source is published by a university press, it is likely to be scholarly. Although the fact that the publisher is reputable does not necessarily guarantee quality, it does show that the publisher may have high regard for the source being published.

Title of Journal

- Is this a scholarly or a popular journal? This distinction is important because it indicates different levels of complexity in conveying ideas. If you need help in determining the type of journal, see Distinguishing Scholarly from Non-Scholarly Periodicals. Or you may wish to check your journal title in the latest edition of Katz’s Magazines for Libraries (Olin Ref Z 6941 .K21, shelved at the reference desk) for a brief evaluative description.

CRITICAL ANALYSIS OF THE CONTENT: CONTENT ANALYSIS

Having made an initial appraisal, you should now examine the body of the source. Read the preface to determine the
author’s intentions for the book. Scan the table of contents and the index to get a broad overview of the material it covers. Note whether bibliographies are included. Read the chapters that specifically address your topic. Reading the article abstract and scanning the table of contents of a journal or magazine issue is also useful. As with books, the presence and quality of a bibliography at the end of the article may reflect the care with which the authors have prepared their work.

**Intended Audience**

What type of audience is the author addressing? Is the publication aimed at a specialized or a general audience? Is this source too elementary, too technical, too advanced, or just right for your needs?

**Objective Reasoning**

- Is the information covered fact, opinion, or propaganda? It is not always easy to separate fact from opinion. Facts can usually be verified; opinions, though they may be based on factual information, evolve from the interpretation of facts. Skilled writers can make you think their interpretations are facts.
- Does the information appear to be valid and well-researched, or is it questionable and unsupported by evidence? Assumptions should be reasonable. Note errors or omissions.
- Are the ideas and arguments advanced more or less in line with other works you have read on the same topic? The more radically an author departs from the views of others in the same field, the more carefully and critically you should scrutinize his or her ideas.
- Is the author’s point of view objective and impartial? Is the language free of emotion-arousing words and bias?

**Coverage**

- Does the work update other sources, substantiate other materials you have read, or add new information? Does it extensively or marginally cover your topic? You should explore enough sources to obtain a variety of viewpoints.
- Is the material primary or secondary in nature? Primary sources are the raw material of the research process. Secondary sources are based on primary sources.
  - For example, if you were researching Konrad Adenauer’s role in rebuilding West Germany after World War II, Adenauer’s own writings would be one of many primary sources available on this topic. Others might include relevant government documents and contemporary German newspaper articles. Scholars use this primary material to help generate historical interpretations—a secondary source. Books, encyclopedia articles, and scholarly journal articles about Adenauer’s role are considered secondary sources. In the sciences, journal articles and conference proceedings written by experimenters reporting the results of their research are primary documents. Choose both primary and secondary sources when you have the opportunity.

**Writing Style**

Is the publication organized logically? Are the main points clearly presented? Do you find the text easy to read, or is it stilted or choppy? Is the author’s argument repetitive?

**Evaluative Reviews**

- Locate critical reviews of books in a reviewing source, such as Summon’s Advanced Search, Book Review Index, Book Review Digest, and ProQuest Research Library. Is the review positive? Is the book under review considered a valuable contribution to the field? Does the reviewer mention other books that might be better? If so, locate these...
sources for more information on your topic.

- Do the various reviewers agree on the value or attributes of the book or has it aroused controversy among the critics?
- For Web sites, consider consulting one of the evaluation and reviewing sources on the Internet.

Example $(\text{PageIndex}(1))$:

Many excellent video resources exist that describe the process of research. Here are three videos from Cornell’s “Research Minutes” series, which provide videos under 3 minutes, that you may find useful:

- How to Read Citations
- How to Identify Scholarly Journal Articles
- How to Identify Substantive News Articles

**STEP 7: CITE WHAT YOU FIND USING A STANDARD FORMAT**

Give credit where credit is due; cite your sources.

Citing or documenting the sources used in your research serves two purposes, it gives proper credit to the authors of the materials used, and it allows those who are reading your work to duplicate your research and locate the sources that you have listed as references. Knowingly representing the work of others as your own is plagiarism. Use one of the styles listed below or another style approved by your instructor.

**MODERN LANGUAGE ASSOCIATION (MLA)**


This handbook is intended as an aid for college students writing research papers. Included here is information on selecting a topic, researching the topic, note taking, the writing of footnotes and bibliographies, as well as sample pages of a research paper. Useful for the beginning researcher.

**AMERICAN PSYCHOLOGICAL ASSOCIATION (APA)**


The authoritative style manual for anyone writing in the field of psychology. Useful for the social sciences generally. Chapters discuss the content and organization of a manuscript, writing style, the American Psychological Association citation style, and typing, mailing and proofreading.

**RESEARCH TIPS**

- Work from the general to the specific. Find background information first, then use more specific and recent sources.
- Record what you find and where you found it. Record the complete citation for each source you find; you may need it again later.
- Translate your topic into the subject language of the indexes and catalogs you use. Check your topic words against a thesaurus or subject heading list.
References

- This chapter was originally published by Lumen Learning and combines the Seven Steps of the Research Process guide from Cornell University and Finding Information on the Internet: A Tutorial by the University of California at Berkeley. All content is CC-BY-NC-SA except for the cited videos above.