

Student Guide to

Research in the Digital Age

How to Locate
and Evaluate
Information Sources

Leslie F. Stebbins




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STUDENT GUIDE TO RESEARCH IN THE DIGITAL AGE

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Preface

A friend of mine who has dangerously high cholesterol levels and is taking six medications recently visited a nutritionist to look into alternative ways of reducing his cholesterol. The nutritionist advised my friend to become a vegetarian immediately, exercise an hour a day, meditate, take up yoga, and eliminate caffeine and sugar from his diet. Overwhelmed with this advice, he immediately proceeded to the grocery store where he purchased two cartons of Häagen-Dazs ice cream.

In some ways a research project can resemble my friend's trip to the nutritionist—so overwhelming that there is a temptation to fall back on a Google search, grab a few items, and begin writing. Unfortunately, using a massive search engine like Google will not provide you with the most scholarly, relevant, and reliable resources on your topic. A research paper is only as good as the quality of the resources upon which it is based.

This book is essential reading for any student embarking on a research assignment. The most challenging aspect of research today is finding *too much* on a topic and having to choose which information resources are the most important to include in your paper. *Student Guide to Research in the Digital Age: How to Locate and Evaluate Information Sources* is designed to teach students how to find and evaluate scholarly resources on the web and in print.

Each chapter of this book discusses when to use a particular type of resource, how to find it, and how to evaluate it. Critical evaluation is presented as a component of every stage of research from formulating a research question, choosing tools to search, developing search strategies, and selecting resources. The web is presented as both a complex medium which distributes scholarly electronic journals, ebooks, digitized primary

source collections, and other rich scholarly resources, as well as a provider of massive amounts of more limited and potentially unreliable information that needs to be used cautiously, if at all.

Evaluation skills are introduced as both a set of concrete techniques that can be applied to a particular type of information, as well as a more creative and intuitive process that is developed over time as knowledge about a subject grows. This book promotes using filters, such as specialized databases and tools, to focus the research process and weed out extraneous and less scholarly information. Students are encouraged to recognize contextual clues to gain meaning and provide evaluative criteria for choosing appropriate information resources; at the same time they are advised to examine their own assumptions about a topic and be willing to adjust their own ideas based on previous research. In addition, the authority of a source, its purpose and scholarly nature, and issues of accuracy, currency, and relevance are explored.

Unlike the advice of the nutritionist above, this book is *not* meant to be digested in one sitting. The comprehensive table of contents and extensive index can be used to focus on an immediate need.

Chapter 1 serves as an introduction to research and critical evaluation. It provides a step-by-step process that novice as well as more advanced students can follow for any research assignment:

1. Define your research question
2. Ask for help
3. Develop a research strategy and locate resources
4. Use effective search techniques
5. Read critically, synthesize, and seek meaning
6. Understand the scholarly communication process and cite sources
7. Critically evaluate sources

Chapters 2 through 7 focus on specific types of information resources. Recognizing when to use a particular type of resource, understanding how the information is organized, choosing appropriate search tools, and developing evaluation strategies specific to certain types of resources is discussed in these chapters.

- Books (chapter 2)
- Articles (chapter 3)
- Primary sources (chapter 4)
- Biographical resources (chapter 5)
- Legal resources (chapter 6)
- Government documents and statistics (chapter 7)

Chapter 8 focuses on how to develop a system for taking notes, when to paraphrase or use direct quotes, how to properly cite a source and avoid plagiarism, how to use specialized software to format your footnotes or endnotes, and how to bring critical evaluation techniques into the process.

Unlike earlier books on library research, this book emphasizes critical evaluation as an ever-present component of the research process. This book moves beyond basic computer and search skills that in the days of Google and IM are second nature to “millennial” students. Instead the focus is on recognizing what types of information resources are needed, how to select the most appropriate tools and search strategies for the information needed, and how to apply evaluation strategies that are specific to the type of information being explored.

Finally, this book strives to provide a conceptual understanding of research as an ongoing scholarly conversation that the student is entering. Research does not occur in a vacuum, but is a process in which the boundaries of knowledge are gradually pushed forward while staying tethered to what has already been uncovered.

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1

Research and Critical Evaluation

There is no way of exchanging information that does not demand an act of judgment.

Jacob Bronowski

Research and critical evaluation strategies are the most important skills you will learn in college. Whatever field or hobby you pursue there will be a need to effectively collect, analyze, and evaluate information. Information literacy skills are powerful, even radical abilities that allow anyone to pursue knowledge in any field or on any subject. Unfortunately, these skills are largely self-taught and haphazardly developed.

There is no one right way to do research, though the stages of research listed below are part of most research endeavors. Similarly, evaluation skills developed initially as a set of concrete techniques come to more closely resemble a creative and intuitive act. Everyone does research and critical evaluation differently, and even experienced scholars will research a subject in their field of study differently from a topic that is outside their area of expertise.

So how do you do research? Beginning researchers need to start by using the seven steps listed below. The path is not always linear, but these steps provide a framework for conducting research. Many beginning researchers leave out the critical evaluation component of research. When confronted with a number of search tools, they use the one they are most familiar with instead of the best tool for their topic; when confronted with a list of resources, they choose the first three instead of analyzing and selecting the most important, reputable, and relevant titles.

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The most challenging aspect of research today is finding *too much* information on a topic. The ability to critically evaluate tools and resources cannot be developed in twenty minutes; it is a lifelong developmental process. Critical evaluation involves asking questions and consciously making choices. Evaluation skills will ultimately make the difference between an adequate research paper and an excellent one.

This chapter walks you through the seven steps of research:

1. Define your research question
2. Ask for help
3. Develop a research strategy and locate resources
4. Use effective search techniques
5. Read critically, synthesize, and seek meaning
6. Understand the scholarly communication process and cite sources
7. Critically evaluate sources

Chapters 2 through 7 of this book focus on finding and evaluating specific types of resources: books (chapter 2); journal, magazine, and newspaper articles (chapter 3); primary sources (chapter 4); biographical resources (chapter 5); legal resources (chapter 6); government documents and statistics (chapter 7). The final chapter covers the subjects of organizing research, taking notes, avoiding plagiarism, and citing sources.

FOLLOW THE SEVEN STEPS OF RESEARCH, BUT BE FLEXIBLE!

The seven steps are presented here in a logical order, but they are not always followed in a linear way from step one to step two and so on. Research frequently involves jumping back and forth between stages. A researcher might develop a hypothesis, retrieve and read a few initial articles or books, then go back and revise the hypothesis, and then start out again in a slightly different direction. Keep an open mind as you go through the research steps outlined below, be willing to jump back and forth between steps, and be open minded about the direction your own research might take. Research involves a combination of using the work of scholars that have gone before you, while at the same time taking small steps onto new terrain.

STEP ONE: DEFINE YOUR RESEARCH QUESTION

Topic refinement is an ongoing activity as you go through the research process. A vague idea about a subject area gradually turns into a topic, aspects of the topic are evaluated, and a research question or hypothesis is developed. Finally, when writing the paper, a thesis statement is articulated.

A **topic** is a general subject area such as global warming or after-school child care. Choosing a research topic is challenging. It is a process, not just something you sit and think about. It is important to devote time to choosing a topic, but do not get so bogged down that you spend a large percentage of the time you have allotted to doing research on defining the topic. Think concretely about your topic and do a few sample searches in article databases (see chapter 3) to see how other researchers have approached your topic. A topic needs to have intellectual energy—it needs to be interesting to other scholars and fit into the larger current research landscape. You are breaking into a scholarly conversation that is already going on, and your remarks need to be relevant to what is currently under study.

The topic should:

- interest you enough that you are willing to spend hours learning more about it,
- be complex and multifaceted,
- generate one or more research questions relating to it,
- have generated some research by other scholars,
- be broad enough that you can find materials, but narrow enough for you to explore in a research paper.

The subject of racism would be too broad, but racism in American schools in the 1950s might be narrow enough to pursue in a ten-page paper. On the other hand, senior citizens who find pleasure listening to garage music is probably too narrow a topic, with little if any scholarly research available. A quick article database search should turn up at least a few articles related to your topic. A search that turns up hundreds of articles is an indication that your topic is too broad. Limiting the search to a geographic area or specific time period, or investigating only one aspect of a multifaceted topic can help narrow search results.

Your **hypothesis** is an educated guess, a prediction, asked in the form of a question. Your hypothesis attempts to predict your thesis.

Does deforestation contribute to global warming?

Does the existence of after-school programs for inner-city middle school students reduce juvenile drug use?

After you have chosen a general topic, do some brief initial research. Read a newspaper or encyclopedia article or skim through the introduction of a book on your topic. What are the common questions or themes that relate to your topic? What is controversial about your topic? What have researchers pursued in relation to your topic? Your hypothesis should

be adjusted over time as you uncover research supporting or contradicting your ideas. If your hypothesis was that deforestation has a significant impact on global warming but all the research indicates the opposite, you might want to modify your hypothesis or even change your hypothesis to focus on some other causal agent of global warming. Research is not the same as preparing for a debate. Research involves looking into what is out there and being prepared for some surprises.

A **thesis** is what you will develop toward the end of your research, after you have read and analyzed the research on a topic. The thesis is a general statement in your paper that presents your conclusions. Your paper then provides the support for the conclusion stated in your thesis. A thesis might be: Quality after-school programs greatly reduce teenage drug use, but poorly managed or underfunded programs have little impact on teenage drug use.

A great deal of work and critical evaluation goes into refining your topic and developing your hypothesis and thesis. This work is what is taking place as you carry out the research process. As you gather, read, analyze, and take notes on information about your subject, continue to revisit your hypothesis and adjust it as needed based on the information you are gathering. Once you have clearly articulated your research question (hypothesis), the thesis is an answer to the question.

Have flu shots proven to be effective for certain populations?

becomes the thesis statement:

Flu shots have been proven to be effective for children and the elderly.

STEP TWO: ASK FOR HELP

Many students are reluctant to ask for assistance with a research assignment. They feel they should already know how to do research, that research is not that difficult, and that asking for help from a professor, teaching assistant, or librarian will in some way lessen their credibility. Students who do not ask for help pay a high price in misunderstood assignments and poorly conducted research. Teaching faculty, instructors, and librarians can provide assistance in the research process. Asking for help makes the teaching and learning process successful.

Ask an instructor for help defining or selecting a topic, understanding the research paper assignment, or identifying some of the key books or articles on a topic. One of the greatest evaluative resources you have access to is your professors—use them. Faculty members have large internal “knowledge banks” that enable them to look at a long list of resources about a topic and identify the more valuable titles through familiarity and experience with particular authors, scholarly journals, publishers, and so on.

Librarians can provide help with almost all aspects of the research process other than clarification of an assignment and topic selection. In particular, librarians can assist in designing search strategies and critically evaluating the flood of information on your topic, but they can lack in-depth expertise on a specific topic. In working with a librarian, it is up to you to be as clear as possible about the research area you are pursuing and the research questions you want answered.

STEP THREE: DEVELOP A RESEARCH STRATEGY AND LOCATE RESOURCES

Developing an effective research strategy involves deciding what types of resources are needed (e.g., books, journal articles, government documents) and what tools (e.g., library online catalogs, journal databases) will enable you to access resources on your topic.

Find Books

Many research papers longer than a few pages require a review of books that have been written related to your research question. Monographs, scholarly books focusing on one topic in a thorough manner, can be useful because they provide a broad, as well as deep, overview of a topic. While journal and magazine articles often focus on one narrowly defined aspect of an issue, books provide the background and analysis of a subject and place the research question in a larger context.

Often the first step in a research project is to review subject encyclopedia articles about the topic under study. More and more specialized encyclopedias are now found in ebook form. Details about locating background information in books in print and online, strategies for locating books generally, and techniques for critically evaluating books can be found in chapter 2.

Find Journal, Magazine, and Newspaper Articles

Most research involves a review of the current scholarly writing about a subject. Scholarly journal articles contain the findings of research being conducted in all disciplines and areas. Today there are more than 10,000 scholarly journals, many available online, that cover every area imaginable. For each research area (e.g., Latin American literature, child development) there are usually a dozen or more respected journals devoted to publishing articles by faculty members and other scholars. Though journal articles often focus on a narrow aspect of a subject, topics are usually similar in scope to that of a ten- or twenty-page research paper. The crucial

factor to remember in locating journal articles is that most are not free and can best be located by searching library databases that will provide you with institutional access to these articles. Choosing the right databases to search is imperative.

Researchers rely less on newspapers and magazines because although these sources may be factually accurate, they are written by journalists who are typically generalists rather than experts (for example, a journalist who covers health issues for a local newspaper). Unlike authors of scholarly journal articles who are specialists with expertise in a specific area, journalists cover topics more superficially—they are reporting on recent research or news events. Though many student research papers contain citations to newspaper and magazine articles, these sources should be balanced with research from more weighty research journals. Chapter 3 provides information on how to select journal, magazine, and newspaper databases and techniques for critically evaluating these resources.

Find Specialized Resources

Specialized resources include any information resource that is *not* a book, journal, magazine, or current newspaper article. They include:

- primary source materials such as historical newspapers, archival materials, and manuscripts (chapter 4)
- biographical resources such as letters, diaries, or oral histories (chapter 5)
- case law and specialized legal resources (chapter 6)
- government documents and statistics (chapter 7)

Historical research and projects that require analysis of primary sources are more likely to include specialized resources. These resources are rewarding to work with—in some cases you may be one of the first people to view a document or pull disparate items together to analyze a historical subject in a new way. Locating and evaluating these resources can be challenging. Specific tools and evaluative criteria are discussed in chapters 4 through 7.

Find Web Resources

There are two types of resources available on the web. The first type is published vetted resources that use the web as a medium for information delivery, such as the *Journal of American History*. The second type consists of web pages that are self-published and do not go through any type of quality control process such as a student blog or homepage. Many profes-