# Chapter 3: Library and Internet Research

## Objectives

Upon completion of this chapter, readers will be able to

1. Develop effective research strategies for technical documentation projects
2. Differentiate among types of research sources and assess their appropriateness
3. Evaluate the credibility and relevance of research sources
4. Access and utilize academic and professional research tools

## Information Search

This section focuses on finding information for your technical documentation projects online and in physical libraries. Your job is to procure good, specific, up-to-date information for your formal report project. You may not be able to read it all. You’re not writing a dissertation, nor is your knowledge about your topic expected to be anywhere close to that level. But at least you know what's out there.

Check out the [library system](https://www.kennesaw.edu/library/) at Kennesaw State University. Here KSU students will find research help 24/7. If you are not at KSU, you can browse the KSU library website and take advantage of many of the resources. Also, it’s a good idea to visit your own library to see the resources available to you.

## How do I get started with research?

Find a Topic, Narrow It, Brainstorm It

Before you head to the library or head to your web browser, you need a topic, some idea of the specific aspect of the topic you want to focus on, and some ideas about what to say about that narrowed topic. Problems finding a topic and thinking of what to say about it are often called the dreaded writer's block.

Narrowing a topic is that process in which you go from a broad topic like nanotechnology to something more manageable, such as applications of nanotechnology in brain surgery.

Brainstorming a topic is the process in which you write down everything you might write about in relation to your topic.

### Know Your Booleans for Searching Online in Databases

An important tool to have when you go searching for information—either in libraries or on the Internet—has to do with Boolean operators: AND, OR, NOT and a few esoteric others. The following table will help you become an expert in narrowing search parameters, especially in a huge database such as that provided by the university.

Just keep in mind to use Boolean operators in library databases, not Google.

*Table 1: Boolean Search Tools*

| **Technique** | **What it Does** | **Example** |
| --- | --- | --- |
| Truncation — adding a symbol to the root of the word to retrieve related terms and variant endings for the root term. Some databases have left- and right-hand truncation. | Expands your search | structur\* finds structure, structuring, structures, etc. \*elasticity will find elasticity, aeroelasticity, viscoelasticity |
| Boolean AND — retrieves only those records containing all your search terms | Narrows your search | finite AND element AND methods |
| Boolean OR — retrieves records containing any of your search terms; especially useful for synonyms, alternate spellings, or related concepts | Broadens your search | energy OR fuel pollut\* OR contaminat\* sulfur OR sulphur |
| Boolean NOT, AND NOT — attempts to exclude a term that is not useful or relevant | Narrows your search | "Advanced Materials" AND composite NOT wood |
| Proximity — retrieves terms within a specified distance of one another; variations of proximity searches are phrase searches, where the terms must be retrieved exactly as entered; NEAR, ADJACENT, WITH, and WITHIN searches | Narrows your search | "Styrenic Block Copolymers" (quotation marks ensure that the multiple-word term is searched as a phrase, but are not required for all databases) |
| Parentheses ( ) — groups terms with Boolean for more complex searches | Combines searches | "mechanical engineering" AND (handbook OR dictionary) |

## Types of Resources for Information Research

Books and periodicals are a great place to start your research.

### Books

Books can provide depth, excellent background, and an historical treatment of your subject. Check a book's table of contents and index to see if it has what you are looking for. For some current research topics, however, books tend to be too general. To obtain more specific information on technological advancements, go to journal articles, technical reports, or other sources discussed later in this chapter.

Try these resources. Search "drone aircraft" on each to see which has the most up to date resources:

* [Online Books](http://onlinebooks.library.upenn.edu/subjects.html)
* [Library of Congress Catalog](https://catalog.loc.gov/vwebv/searchBrowse)
* [World Cat](http://www.worldcat.org/)
* [Google Scholar](https://scholar.google.com/)

### Periodicals

Periodicals is a librarian's word for stuff that comes out periodically—like magazines, journals, newspapers. Magazines, which are for general audiences, are not likely to have much that is useful to your report. At the college level, you will be expected to use scholarly, or peer reviewed, journals for research. You can find these in the university database, or you can borrow from other systems through a system of interlibrary loans. If in doubt, pay a visit to your campus library and make friends with the librarians there.

It's worth noting that if you are attending a college or university, your institution’s library or your state university system works diligently to ensure that you have access to up-to-date scholarly journals in your field. Some students scour the internet, spending time reading questionable sources, when they could more easily go to their library’s website and view top-notch journals by well-known scholars. Make sure you are availing yourself of the best quality resources available to you. Redwood Elementary’s Third Grade Website on Crocodiles might be easy to find on the internet, but it won’t help you to write a high-quality technical report on the importance of crocodiles to the ecosystem.

[Directory of Open Access Journals](https://www.doaj.org/). DOAJ offers free access to over 3,500 full-text, quality-controlled scientific and scholarly journals, over 1,200 of which are searchable at the article level.

Most of the following are services you pay for; some offer a free 30-day trial. Your local library may subscribe to some of these, giving you free access:

* [Applied Science and Technology](http://www.ebscohost.com/academic/applied-science-technology-full-text)
* [ScienceDirect](https://www.sciencedirect.com/)

### Technical Reports

* [National Technical Information Service (NTIS)](https://ntrl.ntis.gov/NTRL/)
* [IEEE Xplore](http://ieeexplore.ieee.org/Xplore/guesthome.jsp)
* [NASA Technical Reports Server](https://ntrs.nasa.gov/collections/pubspace?page=%7B%22from%22:0,%22size%22:25%7D" \t "_blank)

### Associations and Interest Groups

Organizations like associations, special-interest groups, and advocacy groups are good potential sources for information on your topic, however they are not without fault. Associations and interest groups may have agendas or biases about their topics. Therefore, it is important to think critically about any data you collect from them. Ask your librarian for assistance with this kind of resource.

### Library and Subject Guides

Research assistance, subject guides, useful resources and web sites compiled by the friendly librarians at Austin Community College, for example, occupational therapy, business and technical communications, and other department and field names. These are presented here.

[Austin Community College Research Guides](http://researchguides.austincc.edu/)

The library at Kennesaw State University also has awesome resources for you to use.

[KSU LibGuides](http://libguides.kennesaw.edu/)

### Other Information Resources

Ask your librarian for help with other types of resources, such as patents, standards, product literature, and conference proceedings.

## Evaluate Your Research Findings

The following is a system of evaluating the reliability of Internet information developed by the [Cornell University Library](http://guides.library.cornell.edu/evaluating_Web_pages). This information is especially important if you are using Internet sources and need to defend their validity and reliability.

* **Point of View**: Does this article or book seem objective, or does the author have a bias or make assumptions? What was the author's method of obtaining data or conducting research? Does the website aim to sell you something or just provide information? What is the author's purpose for researching and writing this article or book?
* **Authority**: Who wrote the material? Is the author a recognized authority on the subject? What qualifications does this author have to write on this topic? Is it clear who the intended audience is? What is the reputation of the publisher or producer of the book or journal? Is it an alternative press, a private or political organization, a commercial press, or university press? What institution or Internet provider supports this information? (Look for a link to the homepage.) What is the author's affiliation to this institution? Is there any evidence of conflict of interest? For example, a student finds an interesting paper about a promising new drug; then, on closer inspection realizes that the drug manufacturer funded the research. This conflict of interest weakens the credibility of the information.
* **Reliability**: What body created this information? Consider the domain letters at the end of a web address (URL) to judge the site's quality or usefulness. What kind of support is included for the information? Are there facts, interviews, and statistics that can be verified? Is the evidence convincing to you? Is there any evidence provided to support the author's conclusions, such as charts, maps, bibliographies, and documents? Compare the information provided to other factual sources.
* **Timeliness**: Has the site been recently updated? Look for this information at the bottom of the web page. How does the copyright of a book or publication date of an article impact the information contained in it? Do you need historical or recent information? Does the resource provide the currency you need?
* **Scope**: Consider the breadth and depth of an article, book, website, or other material. Does it cover what you expected? Who is the intended audience? Is the content aimed at a general or a scholarly audience? Based on your information need, is the material too basic, too technical, or too clinical?

In addition to the above, if you are looking at Internet sites, pay careful attention to any advertising on the page as their contents may reveal bias or conflict of interest within.

As a rule of thumb, steer clear of any resource that has "wiki" or "about" in the title or url. Your safest bets are sites sponsored by the U.S. government (.gov) or educational institutions (.edu).

## Activities and Exercises

* In small groups or a discussion forum, share some of your own research techniques. What has been effective for you in the past? What advice would you offer others in the class for becoming a good researcher?
* Locate your school's policy on plagiarism and academic honesty. How important do you think this is? Find some sources that reveal cases of academic dishonesty...how does lack of integrity in research affect individuals and the university?

## Attribution

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The content in Chapter 5.6 of the first edition of *Open TC* was originally sourced and revised from David McMurrey’s *Online Technical Writing*, section titled “[Researching Libraries, Documenting Borrowed Information, Cross-Referencing](https://mcmassociates.io/textbook/infoov.html),” which is openly available under a Creative Commons Attribution license.

## AI Assistance Notice

Some parts of this chapter were brainstormed, drafted, and/or revised in conversation with ChatGPT 4o and Google Gemini 2.5 Flash. All AI-generated content was reviewed and revised as needed by a human author.