

CHAPTER 4

Locating and Organizing Research Sources

FINDING SOURCES . . . OR TRYING TO

Every Wednesday, Francine, Juan, and Betsy gathered in their usual corner of the campus library for their weekly dissertation group meeting. This week, they decided the focus of their meeting would be locating sources for their literature reviews, and the mood was somewhere between confusion and mild panic.

"I don't get it," Francine said with a sigh. "I've been searching for days, and I've only found a handful of relevant articles on the impact of artificial intelligence on students' cognitive development. Either AI isn't as big a deal as I thought, or I'm not using effective search strategies. Do I need to change my dissertation topic? I was really looking forward to exploring this subject."

Juan let out a deep breath. "I wish I had your problem. As you are aware, I aim to investigate the causes and consequences of global migration trends. I found too many sources! My search yielded hundreds of articles, and right now, I am unsure where to start. Do I read them all? At this rate, I'll be writing my literature review until retirement."

Betsy, who had been uncharacteristically quiet, finally spoke up, her voice barely above a whisper. "You two at least started searching for relevant publications. I opened a database, and suddenly, there were too many unfamiliar options to choose from: Search strategies? Boolean operators? Filters? I don't even know which databases are right for my topic. How do I figure out where to start?"

The three sat in silence; their friends told them that finding sources was supposed to be the easy part, wasn't it? Here they were, one stuck in a wasteland of too few sources, another drowning under too many, and the third feeling lost before even starting.

In this chapter, we address the challenges many new doctoral students face during the "great literature hunt" for research sources. Our objective is to simplify the process and reduce frustration by providing practical advice and valuable strategies, making it a manageable and rewarding part of your research journey.

At this point, you have selected your topic, considered its significance, and formulated your research question. As we discussed in Chapter 3, your question may evolve and change as you immerse yourself in the reading process. Now you are ready to search for appropriate articles, books, reports, and other sources that will serve as the basis for your literature review. This search should be a systematic, meticulous, careful, and thoughtful process. Searching the literature can start with an initial, general idea about your topic of interest; it continues when you sharpen the focus of your study, and it concludes when you finalize your writing of the literature review.

This chapter discusses what a literature search is and explains its purposes. We differentiate between primary, secondary, and tertiary sources and consider the kinds of references you should look for. We outline the techniques and strategies for finding sources through traditional and digital libraries and other online databases. We end the chapter by suggesting how you can track and record your

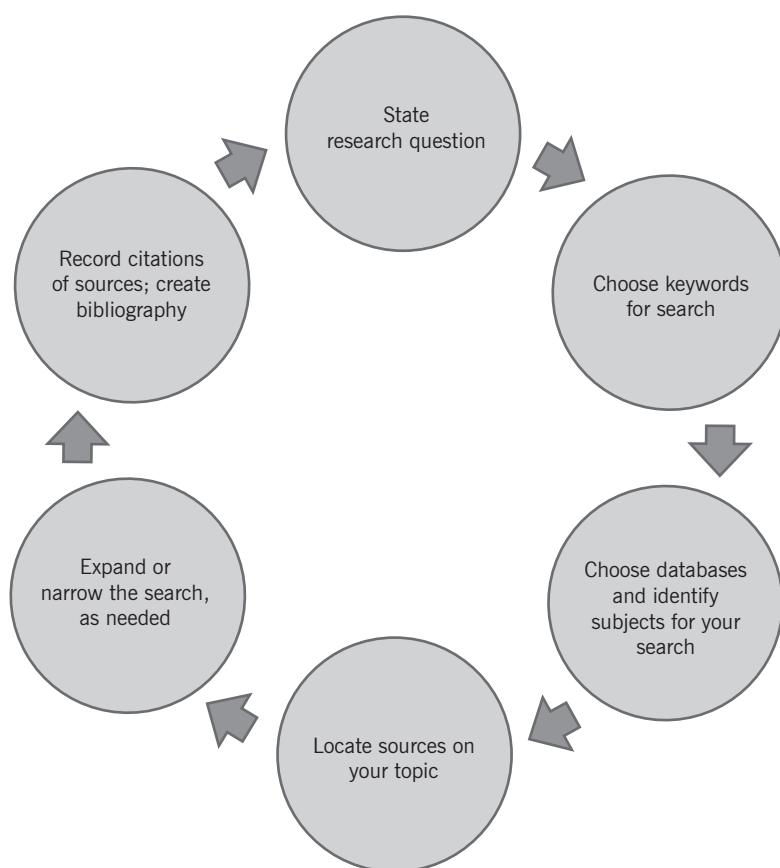


FIGURE 4.1. A diagram of the library search process.

search and the sources you have obtained, and we offer ways for you to start to create your bibliography.

Figure 4.1 illustrates the process of searching for information on your topic. Although we describe the search process as linear and sequential, in practice, it is ongoing and may continue while you write the literature review, conduct the research study, or even write the final report (Hart, 2025). Based on the information you collect throughout the search, you may modify, refine, or even change the topic you want to investigate for your literature review.

THE PURPOSE OF SEARCHING THE LITERATURE

Searching the literature is an essential step in the process of conducting a literature review. An effective search should be conducted with your purpose in mind and with knowledge of the goals of the search (Ramirez & Foster, 2023). Without a purposeful search, your study “may lack the breadth and depth of understanding expected for your level and type of project” (Hart, 2025, p. 8). Conducting a literature search will allow you to do the following:

1. Gather background information and become more knowledgeable about your topic. This will help you sharpen the focus of your study and zero in on the exact topic you want to investigate.
2. Identify publications that are centered on your particular field of interest to allow you to move from general to more focused sources.
3. Decide whether you need to expand or narrow down your search based on the number of sources you find. This is especially true when you are either inundated with sources or fear that you may be missing important literature about your topic.
4. Avoid presenting a biased or shallow description of the current knowledge regarding the topic you are researching. A good search allows you to become familiar with different points of view, perspectives, and theories concerning your area of interest.

SOURCE MATERIALS FOR THE LITERATURE REVIEW

There are different types of materials available to researchers seeking to find information about their topic. While printed materials used to be the standard years ago, today’s search engines enable researchers to locate more information electronically and to do so faster and more efficiently. However, the quality and trustworthiness of the information found online must be established and

confirmed. In the days of print information, the main sources were books and journal articles; conference papers were available in microfiche. Although it may have been harder to locate such sources, once you found them, you could be confident that they were submitted for peer review and were vetted by experts in the field. With the explosion and easy access of the internet and electronic search engines, the availability of references and other documents and information is no longer an issue. At the same time, information available on the internet is not always vetted and may or may not have been submitted for peer review. Thus, although search engines are excellent tools for gathering information about your topic, you must establish the reliability, validity, and trustworthiness of the sources that you use.

PRIMARY, SECONDARY, AND TERTIARY SOURCES

Sources can be classified into the following categories: *primary*, *secondary*, and *tertiary*. The definition and examples of each type of source may vary depending on the discipline and field where they are used. Education, humanities, and social research often use the following descriptions for each type of source.

Primary sources are firsthand accounts and reports written by the researchers who conducted the study, and they offer an insider's view. Examples of primary sources include field notes, research reports, articles written by the researchers, lab reports, artifacts, diaries, autobiographies, interviews, videos, audio recordings, meeting minutes, and proceedings recordings. As a result of the increasing ease of digitizing various forms of primary sources, they are more readily available to researchers looking for information about their topic of interest.

Secondary sources are summaries, discussions, and interpretations of primary original-work sources that were previously presented elsewhere. Examples of secondary sources are journal articles or reports that summarize, report on, or critique other researchers' work; biographies; and commentaries. Summaries or evaluations of events that happened in the past are also considered secondary sources. The authors of secondary sources do not have firsthand experience, but they have a richer and, often, less biased perspective compared with that of the primary-source writers.

Tertiary sources are those that summarize, critically evaluate, and review primary and secondary research sources. Examples of tertiary sources are encyclopedias (including Wikipedia), textbooks, bibliographies, almanacs, indexes, guidebooks, handbooks, and manuals. Sources classified as tertiary by some people or disciplines may be considered secondary by others. For example, in some disciplines, textbooks are considered secondary sources, whereas in others, they are considered tertiary. Table 4.1 compares primary, secondary, and tertiary sources, pointing out their advantages and disadvantages.

TABLE 4.1. A Comparison of Primary, Secondary, and Tertiary Sources

Source	Description	Advantages	Disadvantages
Primary sources	■ Firsthand experiences and reports written by the researchers who conducted the studies	■ Offer insider view ■ Provide firsthand experience	■ May be biased ■ At times are harder to obtain
Secondary sources	■ Summaries, discussions, and interpretations of primary original-work sources that were previously presented elsewhere	■ Likely to have a less biased perspective ■ Often a summary of multiple sources and perspectives around certain aspects of the topic ■ Provide a focused analysis of the subject of interest	■ Authors do not have firsthand experience with the particular research
Tertiary sources	■ Summaries and critical evaluation of primary as well as secondary research sources	■ Holistic ■ Summarize and evaluate multiple sources ■ Provide an introduction to the main leaders, main theories, and “big ideas” in the field	■ Lack firsthand experience with the particular study ■ Less in-depth description of each individual study

Recently, though, there has been more and more use of “gray literature” (Mering, 2018). For this type of literature, quality control may not have been exercised before the resources were shared with the public, and the publications are not disseminated for commercial purposes.

Gray Literature

The term *gray literature* (also listed as *grey literature*) refers to literature, materials, and information that are not found in traditional information-sharing sources. Gray literature may not be peer reviewed and is not published in academic, commercial, scholarly publications, journals, or books. This type of literature is mainly produced by practitioners and researchers who prefer not to use traditional publication channels. Publishing their research is not the main purpose of the groups, individuals, or organizations that produce these gray reports (Bonato, 2018; Pears & Shields, 2022). Examples of gray literature materials include working papers, government reports and documents, opinion pieces, blog posts, discussion forums, survey results, evaluation reports, dissertations, “white papers,” monographs, for-profit group reports, policy statements, unpublished clinical trials, tweets, survey reports, and reports of local small-scale studies (Kamei et al., 2021).

Gray literature is not controlled or disseminated by publishers, although it is usually protected by intellectual property rights. These sources may not have an ISBN or ISSN number, which makes it more difficult to locate them. Discussions

of the advantages of gray literature also mention that the consideration of such sources can help overcome what is known as *publication bias*, where studies that report results that are negative or inconclusive are less likely to be published. Publishing in mainstream journals or books involves a lengthy and intricate quality control process, which ensures high standards and accessibility of the scholarly report but also delays its release to the public. In comparison, gray literature can be disseminated more quickly because it usually bypasses an extensive review procedure. However, because of the absence of rigorous quality checks, the reliability of gray literature should be carefully evaluated.

The advantages of including gray literature sources in your literature review should be weighed against the time required to obtain them. Cooper et al. (2019) question whether it is worthwhile investing significant time in finding a single hard-to-locate source that may not significantly affect the results of the review.

The internet and search engines, such as Google Scholar, are excellent sources for locating and discussing gray literature. Additionally, there are several easily accessible websites, such as the Exeter University Library (<https://libguides.exeter.ac.uk/greylit>), that provide comprehensive discussions and resources related to gray literature.

Many universities in the United States and other countries offer guides on how to search for gray literature. Universities such as the University of Michigan and Duke University are excellent examples. We highly recommend that you consult with your librarian to identify the best methods to access gray literature specific to your field of study. Additionally, widely used search engines such as Google, Google Scholar, Yahoo!, and Microsoft Edge, along with specialized databases and repositories like BASE (Bielefeld Academic Search Engine), OpenGrey, ResearchGate, and various institutional repositories, can serve as valuable resources for locating gray literature.

It is essential to become familiar with appropriate sources of gray literature that are relevant to your research area. For example, in psychology, APA PsycNet (<https://psycnet.apa.org/search>) offers access to various forms of gray literature. WorldCat is a comprehensive database of library catalogs with over 1.5 billion items, and OpenGrey (<https://opengrey.eu>) provides information on gray literature from Europe across disciplines such as science, technology, biomedical science, economics, social sciences, and the humanities. The American Educational Research Association (AERA) website (www.aera.net) also includes gray literature, such as conference proceedings and research papers.

Additionally, Google Scholar (<https://scholar.google.com>) is an excellent and easily accessible search engine. It indexes conference papers, proceedings, government reports, and documents from a wide range of organizations, making it a valuable resource for finding gray literature related to your topic. See Table 4.2 for a list of the major advantages and disadvantages of gray literature, which you may want to consider when using such sources.

TABLE 4.2. Main Advantages and Disadvantages of Gray Literature

Main advantages of gray literature	Main disadvantages of gray literature
■ Can be obtained with readily available search engines ■ Helps overcome publication bias ■ Easier to publish and disseminate ■ Takes less time to publish and disseminate ■ Timelier because it is not subject to an extensive review process ■ Adds sources that may not be available through traditional search engines	■ Not peer reviewed ■ Not disseminated for commercial purposes ■ Not published in academic, commercial, or scholarly publications, journals, or books ■ May not be subject to quality control before being shared with the public, and often it is not vetted before publication/posting ■ May be harder to locate because of the lack of indexing or ISBN numbers

||||| “WORKING BACKWARD” SEARCH

Many experienced researchers recommend that you start by reading tertiary sources that summarize your topic, provide references and bibliographies, and list primary and secondary sources. Additionally, tertiary sources provide a holistic picture and the context of a topic, as well as an initial understanding of the main theories and leaders in the field. Your next step should be consulting secondary sources that describe the state of research on your topic and provide a more focused analysis of your subject of interest. These sources may also highlight where additional research is needed and provide ideas for the methodology that you could use for your study. After you gain a good understanding of the main issues related to your topic, you then move on to the final step of finding primary sources. At this point, you possess the proper tools to assess and appreciate primary sources that describe the direct, firsthand experiences of researchers in the field.

||||| LOCATING YOUR LITERATURE REVIEW SOURCES

The process of searching the literature can be overwhelming because of the constantly growing number of databases and search engines. Generally, except for a systematic review, the literature review can be seen as a treasure hunt: Each reference you find leads you to additional studies. This process is also referred to as a *snowball effect* that allows you to continue to gather additional references that are cited in those you already have, thus expanding and multiplying your sources. Therefore, when searching for sources on your topic, it is always a good idea to start with the most recent research you can find because it will include an updated literature review and references on your topic.

One of the first steps you should take is to conduct an initial exploratory online search, which can be made easier with assistance from a librarian. Librarians are

an invaluable source of information and guidance, especially considering the fast pace of changes in information retrieval systems. As stated by broadcaster and journalist Linton Weeks, “In the nonstop tsunami of global information, librarians provide us with floaties and teach us to swim” (Goodreads, n.d., para. 1).

To assist novice researchers, most college libraries have modules and guidebooks describing the search process that are posted on their websites. You may check your library website to determine if such information is available. If you are on campus, you may want to schedule a one-on-one meeting with a librarian to get you started. Another option is to have a virtual meeting with your librarian.

Throughout the search process, remember to keep a record of every relevant source that you find to enable you to retrieve this information more easily when needed. Later in this chapter, we offer suggestions on how to record and summarize the references that you gather.

Searching Electronic Databases

Searching electronic databases is an efficient process that can provide a great number of sources in a short amount of time. For your search to be effective, make sure you use the most accurate *keywords* or search terms that relate to your research topic. When you enter the chosen keywords into search boxes to obtain sources on your subject, all of the searchable fields in the records (e.g., titles, abstracts, and the author’s name) are searched. Using a variety of synonyms for the keywords can improve your search results because different authors use different terminology for the same terms.

Looking at your research questions, you may be able to condense or represent the issue using a few short terms. For example, your research question may deal with the best techniques and approaches to enhance vocabulary development in preschool children. You can choose terms such as “language development,” “speech development,” or “vocabulary development.” Search terms such as “early childhood” or “preschool children” could be used to find articles that focus on the specific age range of the children for your research. In another research question example, the question may center on the differences in the way men and women communicate. Phrases such as “interpersonal communication” and “gender differences” reflect the keywords of your research question. Also note that adding quotation marks to the words causes the database to search for these words as a phrase.

Another way to search databases and library catalogs is to use a *subject* or *descriptor*. For example, the JSTOR database uses the term *subject*, whereas the MeSH (Medical Subject Headings) database uses the term *descriptor*. A subject is a specific term used to categorize the source. Subjects are assigned as access points by the author of the article, by the database, or by the library catalog to describe the content of items in a database. The subject is a controlled term used by the

discipline, and therefore, it is less flexible and is more likely to yield fewer sources compared with a search using keywords. On the other hand, using subjects allows for a more focused search that produces results more relevant to your topic.

Another difference between keywords and subjects is that keywords can be searched for anywhere in the searchable records, whereas subjects can be searched for only in the designated field for the record. For example, if you search for the subject “immigration” and the word appears in the article title but not in the subject field, the article will not be retrieved in your search results. If you search for the keyword “immigration,” the word could appear in any of the fields that are being searched by the database, and the article will appear in your search results.

Make sure you spell out all acronyms when conducting your search to ensure that you obtain as many relevant sources on your topic as possible. For example, when searching for articles on STEM (science, technology, engineering, and math), using the acronym only, you will get articles on stem cell research, stem cell engineering, and stem cell biology.

At times, a good article on your topic may serve as a valuable source for identifying other keywords or subjects listed for that article. This may lead you to consider new search terms that you did not use before. Table 4.3 includes a brief description of keywords (search words) and subjects (descriptors), as well as their advantages and disadvantages.

Another helpful source for locating keywords is a thesaurus, which is a dictionary containing a systematic list of synonyms and related words that have similar meanings; sometimes antonyms are also included. Many disciplines have a thesaurus that allows you to find discipline-specific terms. For example, George, a

TABLE 4.3. Comparing and Contrasting Keywords and Subjects

Keywords	vs. Subjects
■ Natural-language words describing your topic—good to start with	■ Predefined “controlled vocabulary” words used to describe the content of each item (book, journal article) in a database
■ More flexible to search by—can combine together in many ways	■ Less flexible to search by—need to know the exact controlled vocabulary term
■ Database looks for keywords anywhere in the record—not necessarily connected together	■ Database looks for subjects only in the subject heading or descriptor field, where the most relevant words appear
■ May yield too many or too few results	■ If too many results, also uses subheadings to focus on one aspect of the broader subject
■ May yield many irrelevant results	■ Results usually very relevant to the topic
<i>Source:</i> MIT Libraries (n.d.).	

doctoral student in social work, is searching the term “resilience.” His ERIC (Education Resources Information Center; <http://eric.ed.gov>) search shows how the term is defined under Scope Note and the category that it appears under, as well as other related terms (see Figure 4.2). George can use this information to refine his search and to find additional useful sources through the use of related terms.

It is important to use appropriate search terms. A thesaurus can help you identify such terms if your initial search does not yield a sufficient number of relevant sources. For example, suppose your topic relates to the theft of intellectual property. Using the ERIC database, operated by the U.S. Department of Education (<http://eric.ed.gov>), you type in the search box the words “intellectual theft.” The search yields no hits on the topic. Using the ERIC thesaurus (<http://eric.ed.gov/?ti=I>), you browse and scroll down to the word *intellectual*. One of the choices is *intellectual property*. Note that the information provided by ERIC also includes a broader term (*ownership*), a narrower term (*copyright*), and related terms that you can use for your search (e.g., *plagiarism*).

Resilience (Psychology) Scope Note: The capacity of individuals to withstand, cope with, or recover from adverse, stressful, or high-risk circumstances. Protective factors that enhance this ability may be internal (personal attributes such as self-efficacy, spirituality, etc.) or external (e.g., relationships such as supportive family or community ties). From 2004 to 2010, this concept was indexed with the descriptor “Personality Traits.” Prior to 2004, the concept may have been indexed with the identifiers “Ego Resilience,” “Career Resilience,” “Resilience (Career),” and “Resilience (Ego).” Category: <u>Individual Development and Characteristics</u>	
 <u>Search collection using this descriptor</u>	
Use this term instead of <u>Resilience (Academic)</u> <u>Resilience (Personality) (2004)</u>	Related Terms <u>Adjustment (to Environment)</u> <u>At-Risk Students</u> <u>Coping</u> <u>Goal Orientation</u> <u>Persistence</u> <u>Self-Esteem</u> <u>Self-Management</u> <u>Social Support Groups</u> <u>Stress Management</u> <u>Student Attitudes</u> <u>Student Characteristics</u>

FIGURE 4.2. Screenshot of George’s ERIC search of the keyword “resilience.”

Using ERIC, you can search by thesaurus descriptors (i.e., subjects) that are organized alphabetically. The ERIC database will look for your search terms across a set of key ERIC fields. These fields are title, author, source, abstract, and descriptor. The results are sorted in categories such as publication date, descriptor, source, author, publication type, education level, and audience.

Most disciplines have databases that can be searched electronically. For example, in addition to the ERIC database, the EBSCO (www.ebscohost.com) system offers library resources to customers in academic, medical, K–12, public library, law, corporate, and government markets. (Researchers who are not accessing ERIC or EBSCO through their institutions can use the free site at <http://eric.ed.gov>.)

Examples of other databases include PsycINFO (www.apa.org/pubs/databases/psycinfo/index.aspx), which is offered by the American Psychological Association (APA); a variety of EBSCO databases (www.ebscohost.com) in the humanities and social sciences; and ProQuest (www.proquest.com), which covers multiple subjects and offers services to students. Elsevier, which includes Scopus (www.elsevier.com/solutions/scopus), is a commercially available database that provides abstracts and a citation database of peer-reviewed literature in the areas of science, technology, medicine, social sciences, arts, and humanities. Because some databases have membership restrictions, you should check with your local library to determine what databases it subscribes to and then run your search using those databases.

Additionally, search engines such as Google Scholar (<http://scholar.google.com>) are readily available to the general public. Google Scholar is limited to scholarly sources, and it filters out popular and commercial sources that are not scholarly. Full text may not always be available via Google Scholar, but libraries can often obtain these sources through interlibrary loan. Additionally, to discover books on your topic, you can try searching websites such as Amazon (www.amazon.com).

While most universities do not accept Wikipedia (www.wikipedia.org) as a reference in academic work, you may use it to get a general introduction to your topic (Ridley, 2012). Keep in mind, though, that the sources being cited and the information provided in Wikipedia were not vetted by experts.

You may also want to consider using other, more general online resources that are widely available. Various professional organizations maintain websites, as do governments and other groups. You will recognize these resources by their website addresses, which are likely to end with .gov or .org. For example, the U.S. Department of Education (www.ed.gov) maintains a website that includes information on education data and research (e.g., National Center for Education Statistics, What Works Clearinghouse, and the Nation's Report Card). The ERIC database allows users to search for information by publication date, full text only, and peer-reviewed status. Table 4.4 provides a checklist for locating your library sources.

TABLE 4.4. Locating Your Literature Review Sources	
Step	✓
1. Start with the most recent research you can find on your topic.	
2. Do an exploratory online search on your topic at home or in the library.	
3. Throughout the process, carefully and systematically record every source you find to enable you to retrieve this information more easily later.	
4. Use your research questions to find keywords, or search terms that relate to your research topic.	
5. Use a thesaurus to locate subjects/descriptors.	
6. Check out the subjects/descriptors listed for good articles you have located to consider additional search terms.	
7. Conduct an internet search using discipline-related databases as well as readily available search engines such as Google Scholar.	

Expanding or Narrowing Your Search

When searching the literature, you may find that you sometimes need to expand or narrow the number of sources you include. The need to expand may arise when you do not find a sufficient number of references to write an in-depth and rigorous review. On the other hand, you may need to reduce the number of sources when the search yields too many references, some of which may not be relevant to your topic. Another way to focus your search is to use the Boolean operators (or connectors) OR, AND, and NOT. These operators allow you to expand or narrow your research. The following are some strategies you may use if you realize that you have too few or too many relevant sources on your topic.

Expanding the Search

At times, you may decide to expand the search if you want to ensure that you cover the topic in depth, feel that you do not have a sufficient number of sources, or are afraid that you might be missing important literature on your topic. One way to expand your search is to use the operator OR between two keywords, which will result in the search engine looking for sources that include either of the two keywords. In other words, the search engine will look for sources that include either the first keyword, the second, or both keywords. This will expand the search considerably. For example, Natasha, who is an assistant superintendent, writes a grant proposal for implementing nutrition education in the district and wants to document the effects of such programs on students’ lunch choices. As she prepares the proposal’s literature review, she is searching a database using two keywords: “nutrition education” and “school lunch program.” To expand her search, she is using the connector OR (see Figure 4.3).

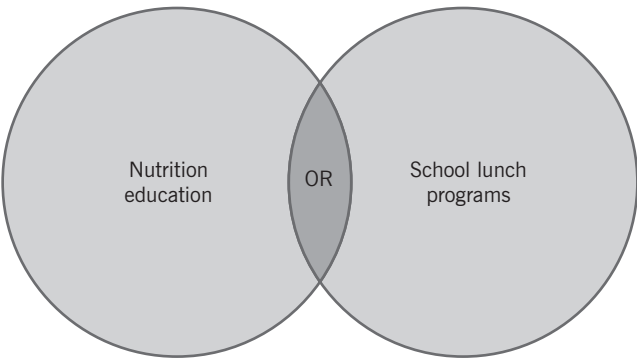


FIGURE 4.3. Using the connector OR to expand the search: The search will include both terms, “Nutrition education” and “School lunch programs.”

To illustrate the process of expanding the search, let’s look at Michael, a doctoral student in sociology. Michael cares deeply about issues related to the environment and pollution, especially when it comes to urban inner-city areas, like the neighborhood where he resides. He is passionate about the importance of teaching children, starting at a young age, that guarding the environment is essential. Discussing this issue with his daughter’s preschool teacher, he found, to his surprise, that there is little focus on the environment in her school. The teacher says that she would love to teach her students about recycling; however, she has not found any age-appropriate curriculum developed for inner-city schools. Michael and the teacher agree that they will try to develop a curriculum. Before starting their endeavor, Michael conducts a search on recycling education in inner-city preschools. Table 4.5 shows various search terms used by Michael and the number of references listed for each one.

You can also expand your search by using your keywords in a truncated form. Often, this is done by adding an asterisk (*) to the truncated search word. This is

TABLE 4.5. Results of Michael's Search: Numbers of References Found Under Each Search Term	
Term searched	Number of sources
Recycling education in inner-city preschool	31
Curriculum in recycling education for preschool children	32
Recycling education in preschool	149
Recycling education in inner-city schools	1,016
Recycling education in school	4,057

also referred to as a *wildcard*. For example, if you are interested in the subject of performing arts, the truncated search word “perform*” may generate references for topics such as performance, performing, and performer. Various databases may have other rules or suggestions for advanced searches, so you should check the databases you use carefully or consult your librarian.

Limiting the Search

Using AND will *limit* your search by requesting the search engine to look for sources that include *two* terms, either in the title or in the article itself. For example, you may recall George, the social work doctoral student mentioned earlier, who wants to study resilience among children in foster care. Using a database, he is searching both terms—*resilience* and *children in foster care*—by connecting them with the operator AND (Figure 4.4). This search will limit the sources by filtering out any source that does not directly relate to his chosen topic.

A search can also be narrowed by using the connector NOT. You use this connector to specify that the second term should not appear in the search. For example, Marie, a professor at a local community college, is asked to develop programs for adults who are learning English as a second language. As part of her proposal, she is writing a literature review on this topic. In order to exclude studies of English as a second language that were conducted with PreK–12 students rather than with adults, Marie is using the connector NOT (Figure 4.5).

Another way to arrive at a manageable number of sources is to sharpen the focus by continuing to add descriptors that more accurately reflect the writer’s topic of interest. Let’s look at Anita, a history student, who decides to search for the topic of ancient Greece. Remembering that when she was a young child, her father used to read stories to her from Greek mythology, Anita decides to research

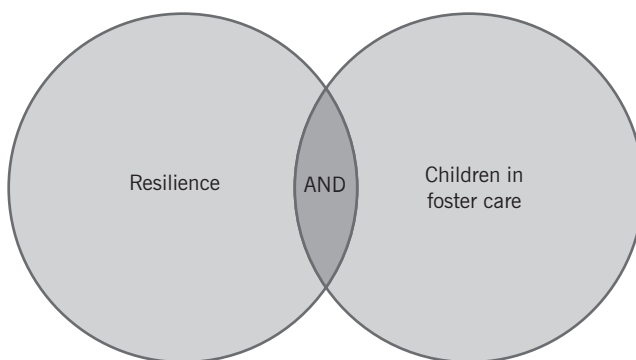


FIGURE 4.4. Using the Boolean operator AND to locate sources that relate to the resilience of children in foster care, excluding other groups.

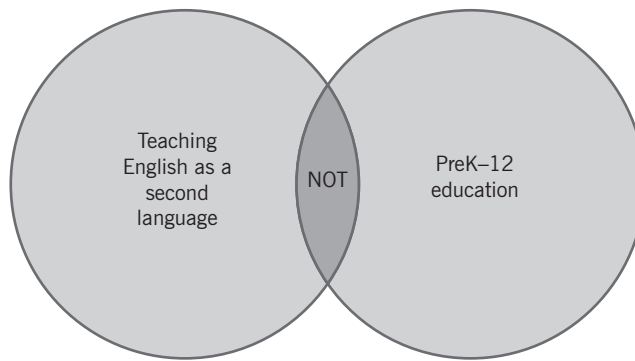


FIGURE 4.5. Using the connector NOT to search for teaching English as a second language to adults only, excluding PreK–12 learners.

the topic of ancient Greece. Her search for the term “ancient Greece” yields a huge number of sources (over 60,000). Since she is also interested in women’s issues, she decides to put together her two topics of interest and focus on women in ancient Greece. The search of these two terms combined generates a smaller number of sources (over 4,300). Anita determines that the number of sources is still too high, and therefore, she narrows the topic further, focusing on the role of women in ancient Greek politics. This search produces a more manageable number of sources (over 560), although she deems it to be still too high. At this point, Anita has several options: She can further narrow her search by choosing a specific region or town in Greece, a certain time period, or certain roles in politics. She can further narrow her search by limiting it to full-text publications or sources that are available in her library system, although this step is recommended only if you are facing a short deadline.

The type of sources you want (e.g., books, articles, conference papers), the dates of publication (e.g., choosing only more current publications), the type of documents (e.g., full text), and whether they are peer reviewed can also help you focus your search and make it more manageable. Keep in mind that the choice of sources may also depend on the guidelines provided by your instructors or the grant funders.

If you still can’t find the information you are looking for, check that you used the right terms and spelled them correctly. Ensure that your search term is not too long because your search may be designed to retrieve only sources that include the complete term. Conversely, if you use too few words, your search may yield too many sources, with some of them unrelated to your topic.

TO DO:

How to Expand or Narrow the Search

The checklist in Table 4.6 may assist you in expanding or narrowing your search.

TABLE 4.6. Expanding or Narrowing the Search	
Step	✓
1. Expand the search when you do not find a sufficient number of references.	
2. Narrow the search when it yields too many references or those that are not relevant to your topic.	
3. Use the connector OR to expand the search.	
4. Expand the search by using a truncated form of your keywords.	
5. Narrow the search by using the connectors AND and NOT.	
6. Sharpen the focus of your search by adding subjects/descriptors that more clearly define your topic.	
7. Choose the types of sources you want (e.g., books or articles, publication dates).	
8. Ensure that you spelled all the search terms correctly and that they are not too long or too short.	

GROUP WORK

Report to your study group members on the process you have gone through in searching for sources. Describe some of the challenges, surprises, frustrations, or rewarding moments you have experienced. You may want to provide a written description of the process that you will then include in the introduction to your literature review. Box 4.1 may be helpful to you in writing this description.

RECORDING ELECTRONIC DATA SEARCH RESULTS ||||||||||||||||||

Most electronic databases (e.g., ERIC, PsycINFO, or other databases available through EBSCO) include a feature that allows you to save and email yourself the documents that you find. You can also get the complete citations through these services. Articles that you wish to obtain that are not available in full text can be requested and sent to you electronically through the services of your library. Students who are working on a literature review that is part of a thesis or dissertation may find full-text dissertations available through ProQuest (*www.proquest.com*) to be especially useful.

If you are looking for a quick and efficient way to search, obtain, and organize electronic sources, there are services specifically designed for this purpose. One such service is EndNote (*http://endnote.com*); however, it costs money to become a member. Other services are free. One example is Zotero (*www.zotero.org/about*), which describes itself as “a free and easy-to-use research tool that helps you collect, organize, and analyze research and lets you share it in a variety of ways.” To back up articles or create your bibliography, consider using cloud-based solutions such as Google Docs and Dropbox. Evernote is another free cloud computing tool for saving documents (*www.evernote.com*). According to Evernote, its powerful search features make it easy to find documents, text, and images quickly from any device, at any time.

BOX 4.1. An Example of a Literature Search

The authors examined the literature using EBSCOHost and Premier Academic Elite. We also used the internet to conduct a search of the *International Journal of Mentoring and Coaching in Education*, since we consider this among the leading journals in the field and, as a relatively new journal, it had not yet been included in the major databases.

Research specific to the topic of culture and mentoring is not extensive, so we conducted multiple searches connecting a variety of words with mentoring. We excluded youth and students in the search process and limited the search to manuscripts in peer-reviewed journals published between 2000 and 2013 that were available in full text. We began the search using the terms *mentoring* and *culture* and *education*. We then conducted a series of searches replacing culture with *women*, *gender*, *diversity*, *race* and *ethnicity*, in turn. This yielded 415 manuscripts. After reading the abstracts, we eliminated those that did not deal with educational contexts. Since there were very few studies that focused specifically on cultural or contextual issues, we included several that dealt with the issue in a tangential way. Additionally, we examined articles that described programs in a variety of countries even if the manuscript was not research based, as they often provided important cultural understandings we found of value. At the end of this process, we selected 70 articles for further review.

Source: Kent et al. (2013).

Another tool that you may find helpful is social bookmarking, an online catalog of hyperlinks that users want to share. Many social bookmarking applications allow individuals to vote on a link's usefulness or to comment on the accuracy of the information it conveys.

||||| USING AI TO ASSIST YOUR SEARCH

In recent years, artificial intelligence (AI) has revolutionized the process of finding, recording, and organizing sources for literature reviews. With rapidly evolving search engines and strategies, our best advice is to consult with a librarian who can provide guidance and support as you search for information on your topic.

Sources such as books, peer-reviewed articles, reports, and gray literature can be quickly retrieved with the help of AI-powered search engines. Platforms like Google Scholar leverage AI to efficiently locate relevant sources, summarize findings, and organize information to highlight key insights. Additionally, utilizing keyword searches with AI tools such as ChatGPT or Gemini AI can provide valuable background information on a topic, assisting researchers in refining or revising their research focus.

We recommend discussing with your professor or dissertation committee the extent of AI use in your literature review. Unintended consequences, such as

plagiarism, can arise from using text provided by AI search engines. While AI technology can assist in locating and organizing literature review materials, it can also be used by professors to detect inaccuracies, misleading information, or text predominantly written by AI rather than the student.

Furthermore, it is essential to verify the accuracy and completeness of the information obtained through AI searches because these tools might sometimes miss valuable resources, such as books. Complement your AI search with manual checks to ensure comprehensive coverage and precision.

There are different AI search engines that are currently available to researchers, and their number is rapidly increasing. Different engines may yield slightly different information, so we urge you to use as many as you can. For example, we asked two popular AI search engines about the term *resilience*, which is discussed in this chapter. Each one of them organized the information about this term slightly differently. ChatGPT organized the information about resilience into five categories: (1) definition of the term *resilience*, (2) key aspects of resilience, (3) types of resilience, (4) ways to build resilience, and (5) why resilience matters. By comparison, Gemini AI organized this information using the following categories: (1) an overview, (2) definition, (3) importance, (4) examples, and (5) development strategies.

For additional search tips, check with your local library. You can also find additional searching guides and information on how to optimize your data queries at *EBSCOhost Searching Tips*. Another valuable resource is *ProQuest Database Search Tips*, which provides insights on navigating the ProQuest platform. Additionally, combining a broad, interdisciplinary database such as Academic Search Complete with a specialized database, such as SocIndex, which focuses on the social sciences, can enhance your search results. Many universities provide guides for their students that are also available for anyone to access. (See, e.g., the library guide at National Louis University: <https://nl.edu/library>; University of California, Berkeley: <https://guides.lib.berkeley.edu/FreeResources/general>; and EBSCO: www.ebsco.com/products/research-databases/free-databases).

CREATING YOUR BIBLIOGRAPHY

There is a difference between the terms *bibliography* and *references*, although both are usually found at the end of the written work. A bibliography includes *all* the sources that you consulted and read during your study, even if you read them simply to gain background information. By comparison, a references section includes only the works that were cited or referred to within the text (Ridley, 2012). At times, depending on the style format used, the bibliography may also be called “References” or “Work Cited” (Purdue Online Writing Lab, n.d.). In most cases, publications by the APA and those using APA style require the use of reference lists, not bibliographies (APA, n.d.). Theses, dissertations, grant proposals, and scholarly articles typically include a references list rather than a bibliography.

The exact listing of each source at the end of your work will depend on the writing style that you use. Three of the main writing styles are those developed by the APA, the Modern Language Association (MLA), and the University of Chicago Press (*The Chicago Manual of Style*). You can use available reference management systems that will allow you to create your bibliography in your chosen writing style. EndNote, mentioned earlier, lets you find literature on your topic, organize the sources, and build the bibliography in the style of your choice. You may also want to look at the Purdue University Online Writing Lab website (<https://owl.english.purdue.edu/owl>), which assists users in creating a bibliography in their selected style. This is a free website that is very helpful in using the APA and MLA publication styles, as well as *The Chicago Manual of Style*. Consult with your professor, grant guidelines, or publication guidelines to determine which writing style you should use.

TO DO:***How to Record Literature Search Sources Electronically and Create Your Bibliography***

The checklist in Table 4.7 summarizes the steps in recording your sources and creating your bibliography.

TABLE 4.7. Electronically Recording Your Literature Search Sources and Creating Your Bibliography

Step	✓
1. Save and email yourself the electronic documents that you find, when possible.	
2. Ask your local library to send you articles electronically that you wish to obtain but are not available as full text.	
3. Consider searching, obtaining, and organizing electronic sources using commercially available services.	
4. Create your bibliography as you obtain sources on your topic.	
5. Consult with your professor, grant guidelines, or publication guidelines to determine which bibliography style you should use (e.g., APA, MLA, or Chicago style).	
6. Consider using a reference management system that will allow you to create, organize, and build your bibliography in your chosen style.	

WHAT'S NEXT?

The focus of this chapter is the library search process. We provided a detailed description of types of sources and offered techniques and strategies for finding sources in traditional and digital libraries and other online databases. In the next chapter, we discuss the reading cycle, from selecting the sources to identifying relevant information in each source and taking notes.

CHAPTER SUMMARY

1. There are several types of source materials, including books, articles, conference papers, and reviews. These sources can be categorized into primary, secondary, and tertiary sources.
2. *Gray literature* refers to materials and information that are not found in traditional information-sharing publication sources.
3. Although digital search engines enable researchers to locate more information and to do so faster and more efficiently, the reliability, validity, and trustworthiness of the sources must be established.
4. When searching for sources on your topic, it is a good idea to start with the most recent research you can find because it will include an updated literature review and references on your topic.
5. Throughout the process of your search, carefully record every source that you find to enable you to retrieve this information more easily later.
6. To search the fields in the records (e.g., titles, abstracts, and the author's name), use the most accurate *keywords* or search terms that relate to your research topic.
7. Another way to search a database is to use a *subject* or *descriptor*, which is a specific term used by the discipline or library catalog to categorize the source.
8. Another helpful source for locating keywords is a *thesaurus*, a dictionary containing a list of synonyms and related words.
9. You can search Google Scholar, Amazon, and Wikipedia, as well as other, more general, online resources, such as those maintained by professional organizations and governments, which are widely available.
10. You can expand your search by using a truncated form of your keywords, which is often done by adding an asterisk (*) to the truncated search word, or narrow your search by specifying the type of materials you want according to one or more categories.
11. In recent years, the use of AI has drastically changed the process of finding, recording, and organizing sources for your literature review.
12. As you undertake your search process, create a bibliography that includes all the sources you consulted and read during your study.
13. A bibliography includes all the sources that you consulted and read during your study, whereas references include only the works that you actually cited in your text.