

Key Terms

The index provides a list of terms and their definitions. It is a good idea to look up the definitions of key terms in your field of study. This will help you understand the literature you are reading and will also help you to use the index more effectively.

- 1. **Activity One:** Focus on the research problem that you have chosen for your research. This activity will help you to understand the research problem and to identify the key terms that you will use in your search.

DREAM TOPIC: In the journal assignment, I had to choose a topic and then I had to find the research that I needed to write my paper. I found that it was a very challenging task, but I was able to complete it with the help of my instructor and the library staff.

Web Link: I found a very useful website that provided me with a lot of information about the research process. I was able to find out a lot of things that I had never known before. I highly recommend this website to anyone who is interested in research.

- 2. **Activity Two:** Based on the research problem that you selected for Activity One, discuss with a colleague or your instructor how to narrow the focus of your study, including feasibility, accessibility, and relevance.

Activity One: Focus on the research problem that you have chosen for your research. This activity will help you to understand the research problem and to identify the key terms that you will use in your search.

Activity Two: Based on the research problem that you selected for Activity One, discuss with a colleague or your instructor how to narrow the focus of your study, including feasibility, accessibility, and relevance.

Activity Three: Based on the research problem that you selected for Activity One, discuss with a colleague or your instructor how to narrow the focus of your study, including feasibility, accessibility, and relevance.

3

Using the Literature to Research Your Problem

Professional journals and secondary research resources in your field are the best sources of information to help you understand your research problem. These resources provide you with the most current and relevant information available in your field.

Benefits of Conducting a Literature Review	49
Sources of Data: Primary Versus Secondary	50
Primary Sources	50
Secondary Sources	50
Selecting Keywords	53
Conducting Searches in Electronic Databases	54
Basic Search	56
Limiters	57
Expanders	58
Advanced Search	58
Boolean Operators	59
Symbols	60
Using the Thesaurus	61
Conducting Searches on the Internet	64
Different Types of Articles	65

(Continued)

(Continued)

Refereed Versus Non-Refereed	65
Staying Organized	66
Summary	67
Resources	68
Common Obstacles and Practical Solutions	68
Reflection/Discussion Questions	70
Try It Exercises	70
Key Terms	71
Suggested Readings	72
Web Links	72

The greatest part of a writer's time is spent in reading, in order to write; a man will turn over half a library to make one book.

—Samuel Johnson

Now that you have finished selecting and refining your research problem, it is time to determine how important your research problem is to others and what is already known about the problem. The way to do this is to search the literature to identify prior research about the problem. One of the questions that might occur to you is, "Why do I need to know about what others think of the problem when I already know what I want to do with my study? Isn't that just going backward?" Keep in mind the goal for your master's thesis is to do research that yields answers to problems that have not been fully answered. If you can find an answer to your research problem in the literature, then it is not necessary to do all of the work that is involved. Through the literature review, you will read what is known about your research problem and also learn who else shares your interest. Later, you may find it helpful to correspond with them as you progress in your research.

Although the literature review can be a time-consuming and arduous process, it is also one of the most important aspects of completing the master's thesis. Once you become familiar with the tools and strategies available to you in conducting literature reviews, you will be knowledgeable and up-to-date with historical and current studies, learn new ideas, and have a better feeling about how your study fits into the existing research (Fraenkel & Wallen, 2009).

Benefits of Conducting a Literature Review

There are several benefits of conducting a literature review. One major benefit is learning how important your research problem is and what is already known. This includes being familiar with the historical and seminal theories and research studies as well as the most recent cutting-edge studies. Once you are able to bridge the existing literature with your research topic, you enhance the credibility of your study and yourself as the researcher. The literature review shows that you are knowledgeable of the content related to your topic and can now apply it to new situations (McMillan, 2012). The knowledge base in disciplines such as social sciences and the humanities moves very quickly as researchers develop new theories and confirm or repudiate existing ones. Additionally, new interventions and processes are continually tested and supported through research studies. Thus, it is important for you to keep up with the research by subscribing to and reading professional journals and attending research conferences in your field so that your knowledge is not outdated.

Another benefit of conducting a literature review is to get new perspectives or ideas that you can incorporate into your study. This prevents you from having to reinvent the wheel. By reviewing the existing research related to your problem, you can learn from other researchers' successes and mistakes (and try not to repeat them). This will make the task of refining the research questions and methods much easier and should strengthen your study. This may also help you to narrow further your research problem and focus or restate your research hypothesis (McMillan, 2012). For example, by examining a previous study's research questions, methodology, and results, you can determine what has worked and not worked with a particular sample group. If a particular intervention or process was successful with a sample group (e.g., adolescents) that is similar to yours, you may want to replicate part of or the entire study. Similarly, if a particular intervention or process was successful with a sample group (e.g., children) that is very different from yours, you may want to study whether or not the same results would be obtained with your sample group (e.g., adults). Sometimes you can find a validated measurement instrument or data analysis process in the *Methods* section that would be relevant to include in your study. A great place to look for the researcher's advice is in the *Limitations* section. In this section, the researcher usually discusses some of the problems that were encountered, mistakes that were made, and suggestions for how to improve the study.

Finally, conducting a literature review allows you to see how your study fits into the existing literature. Remember that one of the goals of your

research will be to move the field forward and add to the current knowledge base. This means either adding to, extending, or building on previous research (McMillan, 2012). By reviewing the literature, you will be able to determine whether your study will fill a gap or need in the literature or will extend what is known about a specific topic. A great place to see how your study fits into the existing literature is to read the *Recommendations for Future Research* section in the studies. This section usually offers suggestions for how future studies can extend the current research and indicates the unanswered questions related to the topic.

Sources of Data: Primary Versus Secondary

Before you begin your literature review, it is important to distinguish between the different sources of data available in the literature. The two main sources of data are primary and secondary. Each serves a different purpose, but both are important to consider in your literature review. I will discuss each type of data source briefly and how you might want to use each in your search.

Primary Sources

Primary sources are the actual or the original results of studies reported by researchers (i.e., firsthand information). These research articles are usually very detailed and include all the information about the study: research questions, sample, methodology and research design, data analysis and results, discussion, and conclusion. Primary sources are typically published in professional journals in the form of articles or monographs but can also be papers presented at conferences. Basically, to identify a primary source, ask yourself whether the information comes directly from the person(s) who developed and conducted the research, similar to someone writing an autobiography.

Secondary Sources

Secondary sources describe or summarize the work of others (i.e., secondhand information). These sources are typically not as descriptive or comprehensive as primary sources. Secondary sources are typically published in research journals in the form of meta-analyses, literature syntheses, research reviews, or textbooks. You can also find secondary sources in reference materials. Reference materials are collections of information such as encyclopedias, handbooks, indexes, and dictionaries. Listed below are

sample reference materials found in academic libraries. Make sure to check what reference materials are available through your library (this varies depending on which reference package the library buys).

- Multidisciplinary:
 - *Gale Virtual Reference Library*
 - *Oxford Reference Online*
 - *SAGE Reference Online*
- Business and Management:
 - *Encyclopedia of Business*
 - *GMID: Global Market Information Database*
- Communications:
 - *Communication Yearbook*
 - *Language and Communication: A Cross-Cultural Encyclopedia*
 - *Oxford Bibliographies Online*
- Education:
 - *Philosophy of Education: An Encyclopedia*
 - *Handbook of Research on Teacher Education*
 - *Educational Research, Methodology and Measurement: An International Handbook*
- Philosophy:
 - *Routledge Encyclopedia of Philosophy*
 - *Internet Encyclopedia of Philosophy*
- Sociology:
 - *Encyclopedia of Sociology*
 - *Encyclopedia of Crime and Justice*
 - *International Encyclopedia of the Social and Behavioral Sciences*

In addition, secondary sources may appear in articles published in newspapers and magazines. When identifying secondary sources, ask yourself whether the information comes from a source other than the work of the original researcher. If it comes from someone who is describing the research of others, then it is a secondary source (like a biography). Secondary sources help you identify primary sources and illustrate the value placed on the primary sources.

There are advantages of reviewing both types of data sources. Secondary sources are probably the best place to start your research because they give you a broad overview of the information related to your topic, and they offer a wide range of materials to explore. Searching through secondary sources may also help you refine your research problem and questions (Fraenkel & Wallen, 2006). Starting with secondary sources is also a good way to immerse yourself in the literature (without drowning) because the articles or summaries are typically short and easy to read, so you will not be bogged down with too much specific information. For example, pretend

my research topic involves immigration, particularly individuals who emigrate for economic reasons. I start my search in the reference *Encyclopedia of Sociology* (Borgatta & Montgomery, 2001) and type “immigration” in the search box (see Figure 3.1 for a quick search for immigration articles).

With this search, I retrieve 47 articles. I select the article on “International Migration” (Heer, 2001), which is seven pages and provides an overview of issues and consequences related to migration, major trends and statistical patterns of migration, a historical perspective of immigration, and legislation related to international immigration (see Figure 3.2 for retrieval of immigration articles). Just from reading these seven pages, I now have a general context and gist of my research topic and some background information that I will need to write Chapter One, Introduction of the thesis.

However, you will need to locate primary sources to write Chapter Two, Literature Review of the thesis. The primary sources give you a full depiction of the research study, and you can synthesize the data as they relate to your specific research topic and questions. In addition, by making your own analysis, you can avoid the possibility of relying on someone else's erroneous interpretations of the results. Thus, you should use the secondary sources to help you identify critical primary sources related to the research topic. For

Search your library's GVRL holdings

Advanced Search

Print E-mail Download Citation Tools

Bookmarks Saved Articles (0) Previous Searches

About This Publication Table of Contents Book Index List of Illustrations

Macmillan Reference USA™

Title:	Encyclopedia of Sociology
Edition:	2 nd ed.
Imprint:	Macmillan Reference USA
Place of Publication:	New York
Publication Year:	2001
No. of Volumes:	5
Total Pages:	3481
ISBN:	978-0-02-864833-8
eISBN:	978-0-02-865899-5
Format:	Encyclopedia

Encyclopedia of Sociology

Encyclopedia of Sociology, 2001

immigration

all volumes
© within this volume

Figure 3.1. Quick search for immigration articles in the *Encyclopedia of Sociology*.

Results for: Advanced Search

Showing 1-20 of 47

Save All Articles

Sort by: Relevance

Revise Search Search within results

with images

Limit Search by

Document Type Topic overview (47)

Publication Title Encyclopedia of Soci... (47)

Subjects Latin American hist... (2) "Belonging" (1) Western Europe (1) Gemeinschaft and Ges... (1) crime (1) View All

TOPIC OVERVIEW

International Migration, page(s) 143-148, word count: 6799.

Encyclopedia of Sociology

DAVID M. HEER, Vol. 5, 2nd ed., New York: Macmillan Reference USA, 2001.

International migration is a term used to refer to change of usual residence between nations. The number of international migrants is always much smaller than the total number of persons traveling across international...

View Text PDF Save Article

TOPIC OVERVIEW

Asian-American Studies, page(s) 174-184, word count: 9674.

Encyclopedia of Sociology

WILLIAM LIU and ELENA S. H. YU, Vol. 1, 3rd ed., New York: Macmillan Reference USA, 2001.

The term Asian American is used in the United States by federal, state, and local governments to designate people of Asian descent, including Pacific Islanders (residents from the Pacific Islands that are under U. S...

Figure 3.2. Retrieval of immigration articles in the *Encyclopedia of Sociology*.

example, at the end of the article on international immigration, there is a full page of citations for primary sources and other secondary sources. I now have leads on some specific research articles related to my topic.

Selecting Keywords

A comprehensive review of secondary sources will also help you find primary sources through the use of keywords. Keywords are typically two to three words or short phrases that are fundamental to the research topic, problem, or questions and are used to refine the search process. Selecting appropriate keywords early in the search process will save you a lot of time and frustration later on. A good strategy is to use the words or phrases that are commonly used in the current literature related to the specific topic (Creswell, 2012). For example, some of the key concepts mentioned in the article on international immigration were migration stream, free migration, impelled migration, forced migration, return migration, chain migration, labor migration, brain drain, illegal immigration, and undocumented immigration. However, not all these would be good keywords because they are not all centrally related to the research topic. Since I am particularly interested in immigration for economic reasons, I select “labor migration” as a keyword and do a revised “search within results” from the 47 articles. The results of this search provide five articles (see Figure 3.3 for retrieval of labor migration articles). These articles will be more closely related to my research topic, and at the end of each article, I have a list of primary sources from sociology resources that I can use for my literature review.

The screenshot shows a search engine interface with the following elements:

- Search Bar:** "Search within results" and "labor migration" (circled in red).
- Results:** "Showing 1-5 of 5".
- Sort by:** Relevance.
- Document Type:** Topic overview (5).
- Publication Title:** Encyclopedia of Soci... (6).
- Subjects:**
 - Middle Eastern histo... (1)
 - Middle Eastern stud... (1)
 - Orientalists (1)
 - Middle Eastern cultu... (1)
 - Asians (1)
- Publication Languages:** English (6).
- Topic Overview 1:** International Migration, page(6): 438-438, word count: 3799. Encyclopedia of Sociology. DAVID M. HEER. Vol. 2, 2nd ed. New York: Macmillan Reference USA, 2004. International migration is a term used to refer to change of usual residence between nations. The number of international migrants is always much smaller than the total number of persons traveling across international...
- Topic Overview 2:** Hispanic Americans, page(6): 186-196, word count: 6696. Encyclopedia of Sociology. MAKIYA TRENDA. Vol. 2, 2nd ed. New York: Macmillan Reference USA, 2004. Despite their common linguistic heritage, Hispanic Americans are a heterogeneous and rapidly growing population that includes no less than twenty-three distinct national identities and combines recent legal and...

Figure 3.3. Retrieval of labor migration articles in the *Encyclopedia of Sociology*.

Conducting Searches in Electronic Databases

One of the best places to research the literature is in electronic databases. Electronic databases are storage banks of thousands of books, articles, reports, presentations, and so on. The major benefits of an electronic database are that you can set limits on your search such as dates, language, and type of resource, and search using different descriptors. The database can be multidisciplinary or related to a specific field/discipline.

There are many multidisciplinary databases. A **multidisciplinary database** is an electronic database that covers numerous subjects rather than just one specific field/discipline. These are important databases to search through if your particular field/discipline does not have a specific database or if your research problem is related to several different fields. Some of the common multidisciplinary databases—Academic OneFile, ProQuest, Academic Search Complete, and Academic Search Premier—include articles, citations, and abstracts across subjects. Another multidisciplinary database is the Dissertation Abstracts International database. This will give you access to doctoral dissertations and master's theses across disciplines from various universities and colleges. Although you can view the citations and abstracts for free, there is often a nominal fee to obtain a full copy of a dissertation or thesis.

One advantage of these multidisciplinary databases is they frequently offer the articles in full-text format. **Full-text** is when the entire resource

is available either in a printable webpage format or a PDF format. The PDF format is a full-text electronic "picture" of a document and resembles how a research article actually looks in the journal. This often saves you time from searching other databases for the resource or taking a trip to the library to locate the "hard" copy. Here is an important tip for searching in full-text databases: If you have a choice between selecting the printable webpage format or PDF format, always select the PDF format because with the PDF format, you have the article's page numbers (e.g., 534–552) from the journal. Thus, you will be able to provide specific page numbers for APA style citations if you are selecting quotations from the article (see Chapter 10 for APA style). There are also many electronic databases available for specific fields or disciplines. Two very popular databases mentioned in Chapter Two were PsycINFO for psychology and ERIC for education. ERIC is one of the largest databases in education and is free to the public through the U.S. Department of Education. If you use the ERIC database through the U.S. Department of Education website (<http://www.eric.ed.gov>), the interface may be different from the one you will find at your institution's library because of the different commercial vendors that license databases to libraries. Listed below are sample subject databases found in academic libraries (make sure you check to see what databases are available through your library).

- Business and Management:
 - ABI/Inform
 - Business Source Premier
 - Scopus
 - EconLit
- Communication/Media Studies:
 - Communication and Mass Media Complete
 - Communication Abstracts
 - ComAbstracts
- Education:
 - ERIC
 - Education Research Complete
 - Education Full Text
- Ethnic Studies:
 - Ethnic News Watch
 - Humanities International Complete
- History:
 - America: History and Life
 - Historical Abstracts
- Law:
 - LegalTrac
 - Index to Legal Periodicals & Books Full Text

- Literature and Language
 - *Literature Resource Center*
 - *MLA International Bibliography*
- Nursing and Health Science:
 - *CINAHL Plus*
 - *Nursing and Health Professions Premier Collection*
 - *PubMed*
 - *Health Source: Nursing/Academic Edition*
- Politics:
 - *Political Science Complete*
 - *CQ Researcher*
- Psychology:
 - *PsycINFO*
 - *PsycNet*
 - *PsychiatryOnline*
- Sociology:
 - *SocINDEX with Full Text*
 - *National Criminal Justice Reference Service (NCJRS)*
 - *Ethnic News Watch*

Although each database's search formats are slightly different, they all share common search tools and features that make it easy to navigate and switch from one database to another. In some cases, your institution's library may subscribe to a discovery service (e.g., EBSCO Discovery Service, ProQuest Summon). A discovery service searches within the institution's entire library collection (e.g., books, journal articles, full-text) from a single find field. This makes library searches very fast and easy, as it is similar to using a search engine on the internet (e.g., Google).

To show you how to conduct a basic and advanced search on an electronic database, I will use Academic Search Premier as an example since it is multidisciplinary and has a similar interface with other databases.

Basic Search

Electronic databases such as Academic Search Premier are large and hold thousands of records; the key to success is being able to narrow the search so that you find the resources most relevant to your research problem. With that in mind, it is critical for you to start with at least five to 10 keywords that are related to your research question or problem (other keywords will be generated during your search). For example, if the research question is, "What are the most effective reading strategies for elementary students who are English learners with learning disabilities," some of the keywords could include English learners,

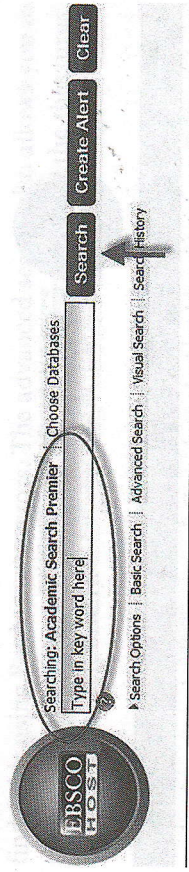


Figure 3.4. Basic search screen in Academic Search Premier.

English language learners, second language, learning disability, reading difficulty, reading disability, dyslexia, literacy, reading, reading instruction, reading strategy, reading method, and elementary. These are the keywords that you would type into the "find field" box and then click the "search" button (see Figure 3.4 for the basic search screen). If you want to remove the keywords and start again, click the "clear" button. The basic search option also allows you to limit or expand your search. I will briefly explain each of these features.

Limiters. If I want to narrow my search, I would use the limiters feature. The **limiters feature** narrows an electronic search by allowing the user to set specific limits, so the search results will only contain research with the chosen specific criteria. For example, in Academic Search Premier, you can set the following limits:

- **full-text:** only retrieves records that have a link to the full-text copy of the article or document (be careful with this limit because you may miss important references that are not available through one database)
- **scholarly (peer-reviewed) journals:** only retrieve articles from journals that have a peer-review selection process
- **publication:** can specify the name of the publication (e.g., journal)
- **published date from:** can specify the time period with beginning month/year to ending month/year
- **publication type:** can specify the type of publication (e.g., periodical, newspaper, book)

Because of the huge quantity of records, setting limits is a very critical step in narrowing your search. However, you have to be careful not to set too many limits at the beginning of the search because you may not get enough records or you may miss some critical records. A good strategy is to start with a few critical limits and then set more limits as needed. For example, in my search, I am going to set the limits for full-text, published dates from 2010 to 2012, and scholarly journals (see Figure 3.5 for limiters feature in basic search).

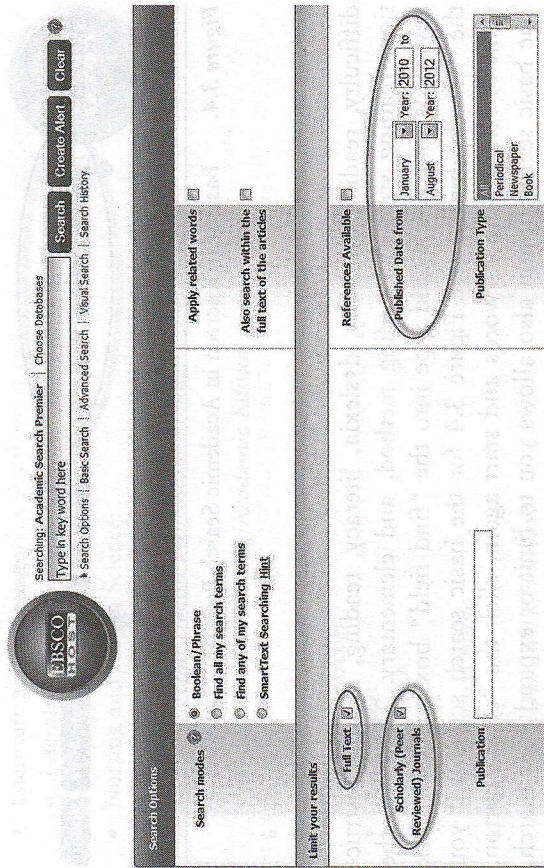


Figure 3.5. Limiters feature in basic search for Academic Search Premier.

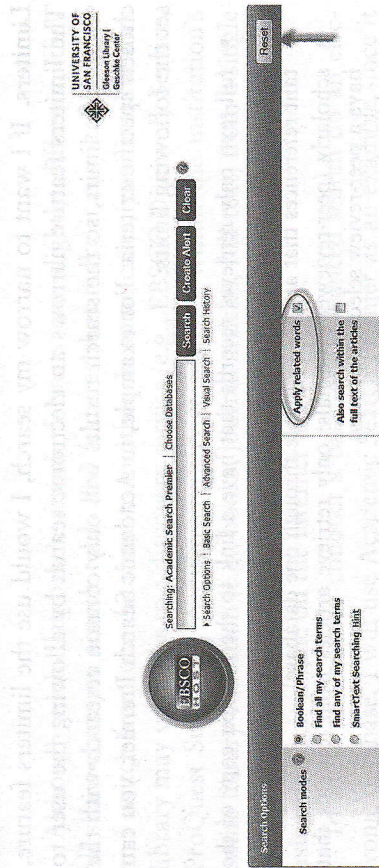


Figure 3.6. Expanders feature in basic search for Academic Search Premier.

Expanders. If I wanted to expand or broaden my search, I would use the expanders feature. The expanders feature is the opposite of the limiters feature and broadens an electronic search by allowing the user to search using related words (see Figure 3.6 for expanders feature in basic search). If you need to clear the limiters or expanders, just click the "reset" button.

Advanced Search

Although a basic search is a good starting point, conducting an advanced search offers several additional features for a more precise search. The advanced search allows you to refine your research by combining multiple

find fields using Boolean operators. The advanced search also allows you to select search fields and find appropriate descriptors through the thesaurus. I will discuss each briefly.

Boolean operators. Boolean operators are used in electronic databases and other search engines to define the relationships between keywords or phrases. Three Boolean operators will be critical for your search: AND, NOT, and OR. The AND Boolean operator combines two or more terms so that each record contains all of the terms. For example, I could search for the terms "English learners" AND "learning disabilities" (see Figure 3.7 for advanced search using AND Boolean operator). This would provide me with records where both "English learners" and "learning disabilities" are present. In essence, using AND between keywords or phrases *narrows* my search because it does not include records that have only one or the other.

The NOT Boolean operator searches terms so that records with certain terms are excluded from the results. This would be another way to narrow the search. For example, if I search using the terms "reading instruction" NOT "math instruction," my results would contain records where only "reading instruction" is present but not "math instruction" (see Figure 3.8 for advanced search using NOT Boolean operator). The OR Boolean operator searches terms so that at least one of the terms is present in the record. For example, if I search using the terms "reading disabilities" OR "learning disabilities," my results would contain records where either "reading

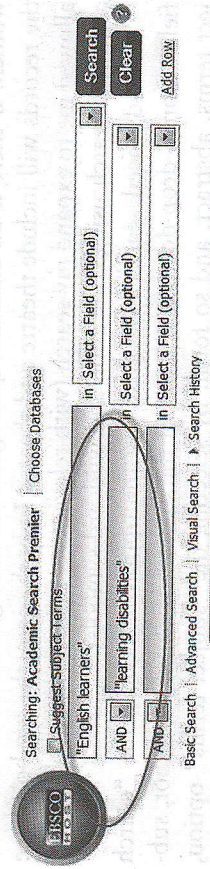


Figure 3.7. Advanced search using AND Boolean operator in Academic Search Premier.

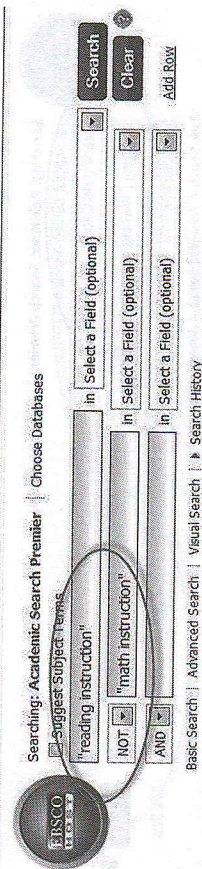


Figure 3.8. Advanced search using NOT Boolean operator in Academic Search Premier.

disabilities" or "learning disabilities" are present (see Figure 3.9 for advanced search using OR Boolean operator). In essence, using OR between keywords or phrases *broadens* my search because it retrieves records containing any of the terms included.

When using Boolean operators, it is important to always put phrases such as "second language learners" within quotation marks like an algebraic equation; this will ensure the search includes all the terms and in that specific order rather than searching each word individually. In some databases, the Boolean operators have to be in capital letters, so to be on the safe side, make it a habit to type them in capital letters.

Symbols. In addition to Boolean operators, many electronic databases also recognize and use symbols in the find field. The two most common are the truncation and wildcard symbols. The truncation symbol is represented by an asterisk (*), and when used at the end of a term, it allows the user to expand the search term to include all forms of the root word. For example, if I want to search for all the forms of the word instruction, I can type "instruct*" and the search retrieves all records with instruction, instructional, instructor, and so on. The wildcard symbol is represented by a question mark (?) and can be used to find the correct spelling or alternative spellings of a word (each question mark placed in the word represents a single character, but you can have multiple question marks). For example, I can insert a question mark in the word "wom?n" and the search will include records with woman and women. If there is an alternate spelling for an ending such as in "theat??" the records will include theatre and theater. In both cases, the symbols have allowed me to expand my search (with relevant records) (see Figure 3.10 for advanced search using truncation and wildcard symbols).

The advanced search also gives me the option to choose the "search field" from a drop-down list. Some of the options are by title, author, subject terms, abstract, and so forth. By selecting the "subject terms" option, this will make my search more accurate than a generic search because the subject terms are assigned by the database and are included in its thesaurus (see below for a detailed explanation).

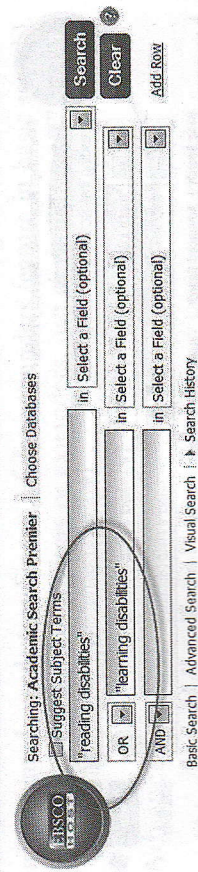


Figure 3.9. Advanced search using OR Boolean operator in Academic Search Premier.

Now I am ready to put it all together in an advanced search. I will use the keywords "learning disability" OR "reading disability" AND "second language" and search in the "subject terms" field. Then I click "search" (and cross my fingers for good luck). YIPPEE! My search gave me eight results (see Figure 3.11 for advanced search using three search terms and Boolean operators), which is a good number of articles to start with.

Using the Thesaurus

Unfortunately, you can search electronic databases for hours typing in keywords and phrases that you think are most appropriate to your research question and come up with "no results were found" or hundreds of irrelevant records. That is when you want to pull out your hair or change your research questions! The problem is we tend to use our everyday language when conducting searches while the database uses its own language to catalog the resources. However, there is still hope by browsing through the database's thesaurus. The thesaurus contains alphabetized descriptors (i.e., subject terms, subjects) that are used in the electronic database to give every record a subject indexing term (i.e., controlled vocabulary). By finding out the exact two to three words used by the database to "tag" records for different concepts, you make your searches more efficient by taking out the guesswork of which keywords to use. The most well-known use of controlled vocabulary is

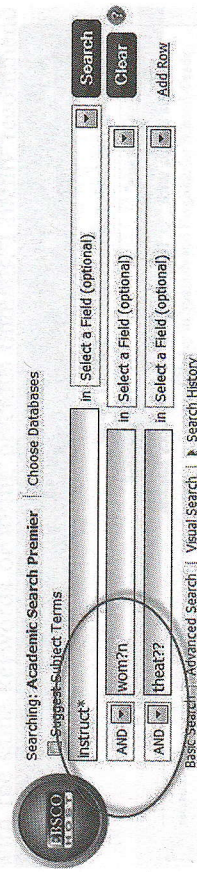


Figure 3.10. Advanced search using truncation and wildcard symbols in Academic Search Premier.

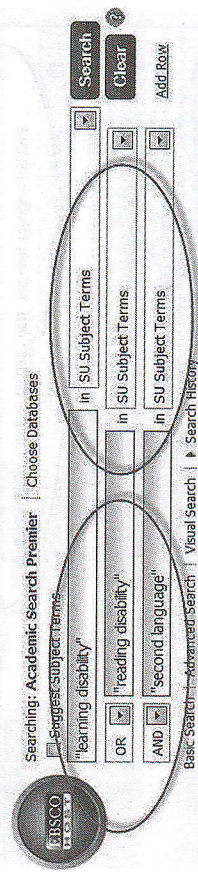


Figure 3.11. Advanced search using three search terms and Boolean operators in Academic Search Premier.

the Library of Congress Subject Headings. A simpler example is how subjects are listed in the phone book yellow pages (you may be using one as a footrest right now). If I need to fix my car, should I look up car repair, auto repair, mechanic, automotive repair auto service, automobile restoration, motor rehabilitation . . . wouldn't it be nice to know the one term that the yellow pages used when they created the listings? That is exactly how the database thesaurus works! By using the correct subject term from the thesaurus, I increase the chance of retrieving relevant articles for my search.

For example, I use the phrase "English learners" to describe students whose native language is not English. However, the database may use a different subject term such as "limited English speaking" or "English as a second language" or "second language learner" to refer to the same population or concept. Instead of guessing, I type in "English learner" and select the "suggest subject terms" box. I get a long list of subject terms that are all somehow related to "English learner." However, by using the "relevancy ranked" option, the subject terms are displayed in hierarchical order from most to least relevant, which helps prioritize my search process. The most relevant subject term for "English learner" in the database's thesaurus is "Limited English-proficient student" (see Figure 3.12 for search subject

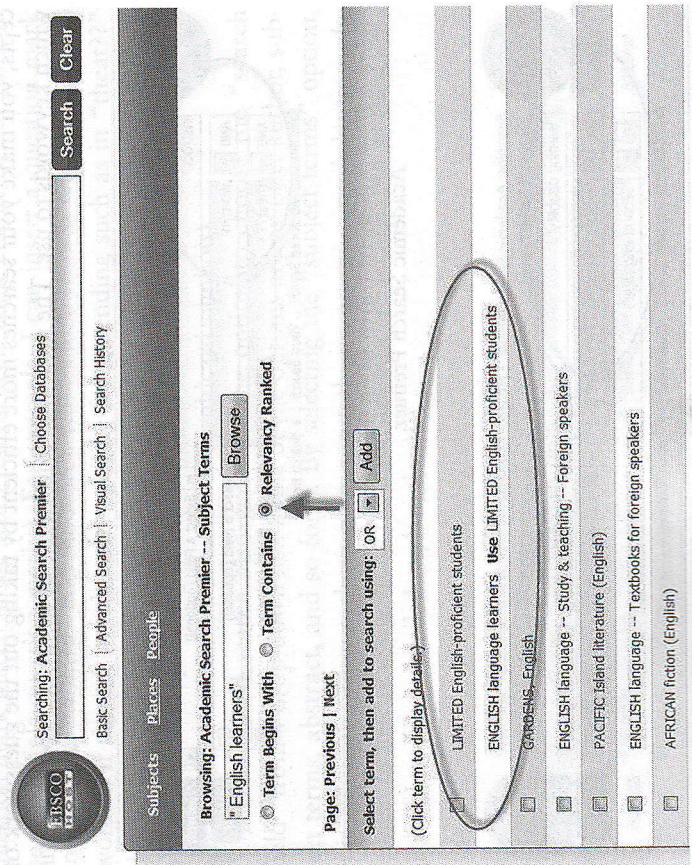


Figure 3.12. Subject term search using "relevancy ranked" in Academic Search Premier.

term using relevancy ranked). Now I can use that subject term for my searches that will give me more accurate records. And I can spend those hours I would have spent pulling out my hair actually reading the articles!

Once I have a reasonable number of records, I usually do a cursory review of the titles and authors and either add them to my folder for a more detailed review later or click on the title to get more information about the record. The detailed record screen gives me very critical information about the record: the title, authors, source (journal, volume, issue, and page numbers), subject terms, and abstract (see Figure 3.13 for sample record screen for a journal article). In addition, the record tells me whether or not the full-text article (PDF) is available. With the PDF full-text choice, I can view/print the article, save it, or e-mail it to another computer. As you are researching, it might be a good idea to keep a notebook handy to note authors who have written a few articles related to your research problem (in case you want to contact them for more information) or articles that you may need to search for in other databases, on the Internet, in the library's catalog, or order through interlibrary loan. Interlibrary loan is a service provided by libraries whereby a user of one library can borrow books or acquire photocopies of articles in journals that are owned by another library (sometimes there is a fee involved). When doing searches, it is very easy to get "lost" in the process. Most library search interfaces allow you to keep a record of your search, save records to your computer, or e-mail searches and records to another computer; this keeps you from researching with the same keywords or losing precious findings. I highly recommend that you add relevant results to your folder as you find them. This way,

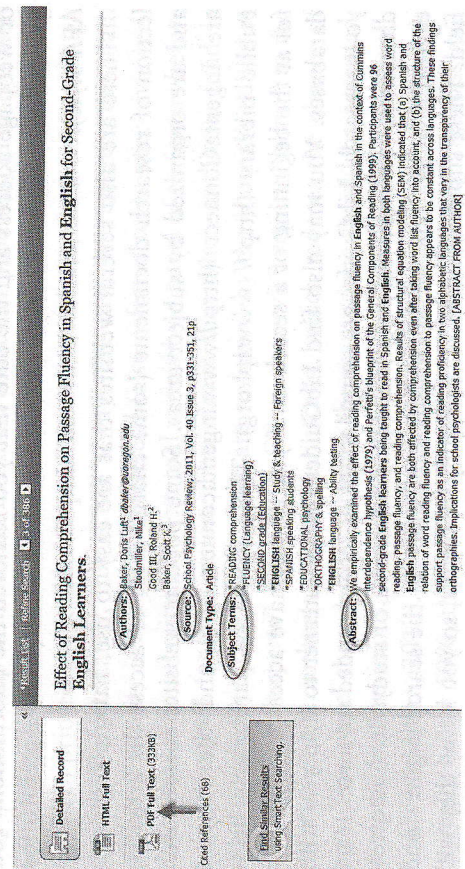


Figure 3.13. Sample record screen for journal article in Academic Search Premier.

you can have a record of your results and will be able to print, e-mail, or retrieve them later.

Conducting Searches on the Internet

Conducting searches on the Internet offers advantages and disadvantages over conducting searches on electronic databases. The search process is similar to the electronic database in that once you type in a keyword, the search engine will find websites and webpages that are related to your keyword. Some advantages of the Internet search are that it is fast, easy, and accessible anytime. In addition, the information is relatively current, and you will get a wide variety of resources. One disadvantage of the Internet search is that since you have so much information and it is not well organized, it may be more time-consuming and difficult to find relevant information. To be both effective and efficient in searching the Internet, you must develop rather sophisticated search techniques. An additional disadvantage is that the information may not be of high quality or reliable (Creswell, 2012; Fraenkel & Wallen, 2006; Mertler & Charles, 2010). For example, often there is no author listed on the website, so it is unclear whether or not the article was written by an "expert" in the field. Additionally, there is no way to check whether or not the article was externally reviewed. However, sometimes the Internet is the easiest or the only way to retrieve citations that are available through the library. Typically, I use the Internet search engines only when I am looking for a specific reference. If you do retrieve information or documents from the Internet, keep a record of the website or webpage address and the date that you retrieved the information. You will need these for APA style citations and references (see Chapter 10 for APA style).

There are also several websites that are easy to use, have a large collection of research documents (some charge a fee to access the articles), and are organized by subject areas. Some popular websites for research are IngentaConnect (<http://www.ingentaconnect.com>) and the Internet Public Library (<http://www.ipl.org>). These would be particularly helpful at the beginning of a search or if you do not have access to electronic databases. You may also find LibGuides on the Internet to help you with your research. LibGuides are compilations of recommended resources (e.g., databases, journals, webpages) in a particular area of study. To find a relevant LibGuide, type in "keyword + LibGuide" in the search engine's find field. These subject guides are created by librarians, so you know they will be amazing!

Different Types of Articles

As you continue your search in electronic databases or through the Internet, you will encounter different types of articles. This includes theoretical articles, empirical research studies, position papers, literature syntheses, and meta-analyses. A literature synthesis (also referred to as a research synthesis) is a type of article in which the results of several related studies are compared and summarized. A meta-analysis research study is one in which the results of several related studies are analyzed and reported with statistical measures (e.g., effect sizes). Each of the different types of articles serves a different purpose. For example, if I were looking for a theoretical rationale or basis for my research study, then I would want to search for articles that discuss an existing theory or suggest a new theory (Galvan, 2009). If I want to review research that is based on systematic observation, I would search for empirical research studies (very critical for writing Chapter Two of your thesis). If I want an article that gives a broad overview or synthesis in a particular area such as "reading strategies," I would search for a meta-analysis or literature synthesis on that specific subject. Finally, if I want support for a particular position or to quote an expert's opinion on a particular topic, I would search for position/opinion papers.

Refereed Versus Non-Refereed

As a consumer (in this case of research), you always want to make sure that you get the best quality. Thus, when deciding on which research articles to include in your thesis and particularly the literature review, it is important to keep in mind that like most consumer products, there is a hierarchy of quality involved. A natural tendency is to assume that if something has been printed in a journal or published on a website, the article is of high quality. Unfortunately, this is not always the case. In research, the main stamp of quality is refereed. A refereed (also referred to as peer-reviewed) article has been submitted for external review by a panel of reviewers before being accepted for publication. This means that when author(s) send in their manuscripts, the manuscripts are reviewed by the journal's editor as well as other "experts" in the field. Often, the reviewers are "blind" to the identity of the author(s) of the manuscript, which reduces the chance of bias. This panel then decides whether the manuscript should be accepted, accepted with revisions, or rejected for publication in the journal (Creswell, 2012; McMillan, 2012). As the acceptance rate for most refereed journals is typically below 50%, this process ensures that only the most rigorous and high-quality research is accepted for publication. A non-refereed article is

one that did not go through an external review process before being published. With that in mind, it is best for you to search in research journals that use a refereed review process (most databases will allow you to set this as a limit).

Staying Organized

One of the most important strategies during the literature search process is to stay organized. After all, you may end up with 40 or 50 articles, books, and documents by the time you are done searching. This means keeping track of your search records, saving, printing, or e-mailing relevant records, and also creating an organizational system. The first step in creating an organizational system is to develop a physical organizational system. First, designate a file cabinet drawer or buy a large portable plastic file box with dividers. Then, print out a copy of each article (you may do this electronically on your computer if you prefer). Next, decide how you want to file the articles. If you file alphabetically by the author's last name, this will be an easy way to retrieve the articles (as long as you can remember who wrote which article). You can also file the articles by date of publication if you are interested in a chronological or historical analysis. Finally, you can group the articles by themes/categories based on specific common attributes (e.g., topic, sample, intervention, methods). I prefer this method because it helps me to conceptually organize the body of literature and will help facilitate the writing process later on. Remember that if the article or information comes from an electronic source (i.e., website) you need to record the website address and in some cases the date that you retrieved the information from the Internet (keep a log). After you have selected your method for physical organization, it is time to organize the information within the articles.

Rarely will you find an article that is completely relevant to your research problem or study. More often, you will use specific parts from different articles to support your ideas. Pulling together the studies in a literature review is very much like putting together a complex puzzle (with some missing pieces). Thus, how you organize the information within the studies is very important. You need to have a system that is efficient in terms of recording critical information but also easy to access for retrieval purposes. One method that I find helpful is using different color highlighters as I read to code different types of information (e.g., yellow = problems, green = possible solutions, orange = background information, pink = definitions). There are also computer software and applications that have this capability

if you are more comfortable reading documents and editing on a computer screen.

One popular method of organizing the information within the articles is abstracting. Abstracting is a method of organizing information about an article that includes a brief summary and selected critical information about the study (Creswell, 2009). This is different from copying and pasting the author's abstract, which does not always include the most critical information about the study (from your perspective). The summary should be brief and does not have to be in complete narrative form. However, the abstract should contain the following components: the problem, the purpose of the study, the sample, and key results. Once you have abstracted the studies in your collection, it will be much easier to see the *relationships* between them. This is a critical step in the organization process because ultimately, in writing the literature review, you will need to make the explicit connections between the studies that you select and how they relate to your proposed study.

To help you find the relationships and connections between the studies, the next step is to create a literature matrix. A literature matrix is an organizational tool such as a table, chart, or flow chart to display the relationship or common attributes among multiples studies. The purpose is to show the relationships between the studies, so use the format that is best for you. For example, for my "reading instruction" study, I may want to group all the studies related to reading instruction for English learners together. Then, another group would be the studies of reading instruction for students with learning disabilities. Next, a third group would be studies of reading instruction for students who are English learners and have learning difficulties, and so on (see Figure 3.14 for a sample literature matrix). By grouping the studies together into subgroups, this will allow you to see if you have overlaps or gaps in your pool of studies (which may require you to conduct another search). I realize that this may seem like a lot of hard work (and it is), but believe me, it will save you time later. This process will also make it easier for you to organize your thoughts about the research problem, conceptualize your research questions and study, and write the literature review in the thesis.

Summary

Researching the literature related to your research problem is a giant step in the thesis process. As you immerse yourself in the literature, you will be inundated with resources, so be very critical and selective, keeping only

those directly related to your research problem. In the next chapter, I will discuss the ethics of conducting research and how to prepare a research study application for review by the Institutional Review Board for the Protection of Human Subjects (IRBPHS). Here is a summary of the most critical points from Chapter 3:

- The major benefits of conducting a literature review are to know the research that has already been done that relates to your proposed study, learn from other researchers' successes and mistakes, and determine whether or not your study will fill a gap or need in the literature or extend what is known about a specific topic.
- Primary sources are the actual or the original results of studies reported by the researcher(s) (i.e., firsthand information).
- Secondary sources describe or summarize the work of others (i.e., secondhand information).
- Keywords are typically two to three words or short phrases that are fundamental to the research topic, problem, or questions.
- The major benefits of an electronic database are that you can search using multiple keywords and set limits on your search such as full-text, dates, peer-reviewed, and so on.
- Electronic databases and other search engines often use Boolean operators AND, NOT, and OR to define the relationships between words or groups of words.
- The thesaurus contains alphabetized descriptors (i.e., subject terms, subjects) that are used in the electronic database to give every record a subject indexing term (i.e., controlled vocabulary).
- Disadvantages of an Internet search include that it may be more time-consuming and difficult to find relevant information or the information may not be of high quality or reliable.
- The term "refereed" refers to a quality-control process that includes an external review of the research manuscript.
- One popular method of organizing the information within the articles is abstracting, that is, writing a brief summary about the article (usually a research study) that includes selected critical information.

Resources

Common Obstacles and Practical Solutions

1. Since we live in a world of information overload, a common problem that students face at this stage is feeling overwhelmed and not knowing where to start looking for research. Words that come to mind are, "Lost in cyberspace." If you have a general sense of your topic

Figure 3.14. Sample literature matrix for reading interventions.

Reading Intervention Categories	Authors, Year	Type of Intervention
Direct Instruction Approaches	1. Carr & Thompson, 1998 2. Malone & Mastropieri, 2001 3. Gajra & Salvia, 2000	1. Activate prior knowledge (main idea and details) 2. Paragraph summary and self-monitoring 3. Brown & Day's five summarization rules
Graphic Organizers (Mapping)	1. Boyle, 1999 2. Gardill & Jitendra, 2001 3. Idol & Croil, 1987	1. Cognitive mapping (main idea and details) 2. Story maps 3. Story maps
Strategic Instruction Model	1. Clark, Desher, & Warner, 1982 2. Schumaker, Desher, Alley, Warner, & Denton, 1982 3. Schumaker & Desher, 1988	1. Visual imagery and self-questioning 2. Multipass (textbooks) 3. Paraphrasing
Collaborative Strategic Reading	1. Klingner, Vaughn, & Schumm, 1998 2. Klinger & Vaughn, 1998 3. Vaughn, Chard, Bryant, Coleman, Tyler, Thompson, & Kouzekanani, 2000	1. CSR: preview, click and clunk, gist, wrap-up 2. Reciprocal teaching + CL and cross-age tutoring 3. CL vs. partner reading
Story Grammar Instruction	1. Gurney, Gersten, Dimino, & Carnine, 1990 2. Carnine & Kinder, 1985	1. Story grammar instruction 2. Story grammar vs. visual imagery
Reciprocal Teaching	1. Brown, 1984 1. Palincsar & Fuchs, Fuchs, & Kazdan, 1999 2. Fuchs, Fuchs, Mathes, & Simmons, 1997	1. Reciprocal teaching: question, summarizing, shrinking, prediction relay 2. Reciprocal teaching: question, summarizing, prediction clarity, prediction
Peer-Assisted Learning Strategies (PALS)	1. Fuchs, Fuchs, & Kazdan, 1999 2. Fuchs, Fuchs, Mathes, & Simmons, 1997	1. PALS: partner reading, paragraph shrinking, prediction relay

and are familiar with the Internet, search engines would be a good place to start. If you have a focused sense of your research topic, I recommend searching within electronic databases that are multidisciplinary or specific to your field/discipline. If you feel completely "lost in cyberspace," I recommend setting up an appointment with the reference librarian at your institution to help you get started. Remember that the search for research articles is like a treasure hunt; it is time-consuming and continual (finding one source usually leads to another).

2. Once you find the research articles, a common obstacle that students face is organizing all of them. Words that come to mind are, "My room is covered in research articles!" From the very beginning, it is really important to set up an organization system and stick to it (everything should have a home). Set up a filing system that you are comfortable with (not piles on the floor) and start categorizing your research articles either with hard copies or electronically (keep a backup). This will cut down the time later when you need to refer to a specific article or need to find missing references.

Reflection/Discussion Questions

As you begin to find research articles, it is important to consider how and why you are conducting the literature review and the types of sources that you will rely on. For example, the research literature can help to identify existing gaps and weaknesses around a specific topic. In other cases, the research literature can be used to rationalize or justify using different components in an intervention. The following reflection/discussion questions will help you determine how you want to approach the literature review and the advantages and disadvantages of different types of sources.

1. What is a literature review, and why is it an important part of the research process?
2. What are the major benefits of conducting a literature review before planning and implementing the study?
3. What are the differences between primary and secondary sources? What are the advantages and disadvantages of using each type of source? Brainstorm and list critical primary and secondary sources in your field or discipline.

Try It Exercises

The intent of the following exercises is to help you get started with your literature search. In Activity One, you will identify potential databases and

websites where you can find research or information related to your field or discipline area. In Activity Two, you will use keywords and an advanced search to find empirically based research articles. In Activity Three, you will write a short abstract based on one of the research articles.

1. **Activity One:** For this activity, focus on the resources specific to your field or discipline area.
 - Through your institution's library, locate at least five electronic databases that have information related to your field or discipline area.
 - Through an Internet search engine, locate at least five organization-sponsored websites that have information related to your field or discipline area.
 - Through an Internet search engine, locate at least three national or state-sponsored (e.g., U.S. Department of Education) websites that have information related to your field or discipline area.
2. **Activity Two:** For this activity, focus on your chosen research problem as you conduct a literature search.
 - List 10 keywords that can be used for your literature search.
 - Conduct an advanced search (using limits and Boolean operators) in one of the electronic databases from Activity One. You should use the thesaurus to help you find the subject terms. Remember to keep track of the keywords and your search record.
 - Select five empirically based research articles related to your research problem (make sure at least two come from refereed journals).
3. **Activity Three:** For this activity, focus on one of the selected research articles selected in Activity Two.
 - Write an abstract for one of the research articles that includes the following information about the study: (a) research problem/question, (b) research design, (c) methods (e.g., sample group, intervention, measurement instruments, data collection, data analysis), and (d) results/findings.

Key Terms

- abstracting
- AND (Boolean operator)
- Boolean operators
- descriptors
- expanders feature
- full-text
- interlibrary loan
- keywords
- limiters feature
- literature matrix
- literature synthesis
- meta-analysis
- multidisciplinary
- non-refereed
- NOT (Boolean operator)
- OR (Boolean operator)
- PDF
- primary sources
- refereed
- reference materials

- relevancy ranked
- secondary sources
- subject terms
- thesaurus
- truncation symbol
- wildcard symbol

Suggested Readings

- Granello, D. H. (2001). Promoting cognitive complexity in graduate written work: Using Bloom's taxonomy as a pedagogical tool to improve literature reviews. *Counselor Education and Supervision, 40*(4), 292–307.
- Lomand, T. C. (2007). *Social science research* (5th ed.). Glendale, CA: Pyrczak.

Web Links

- Dogpile search engine <http://www.dogpile.com/>
- Education Resources Information Center (ERIC) <http://www.eric.ed.gov/>
- Google search engine <http://www.google.com>
- Google Scholar <http://scholar.google.com/>
- IngentaConnect www.ingentaconnect.com
- The Internet Public Library <http://www.ipl.org/>

4

Conducting Ethical Research

Background and History	75
Nuremberg Code	75
Thalidomide	76
Tuskegee Syphilis Study	76
Legal and Ethical Principles	77
Belmont Report	77
Respect for Persons	77
Beneficence	78
Justice	79
Federal Regulations	80
Common Rule	80
Institutional Review Board (IRB)	81
IRB Application Process	81
Preparing the IRB Research Plan	82
Ethical Behavior	86
Plagiarism	87
Summary	88
Resources	89
Common Obstacles and Practical Solutions	89
Reflection/Discussion Questions	89

(Continued)