Locating and Reviewing the Literature

3

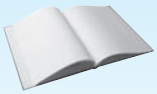
OBJECTIVES **Studying this chapter should enable you to:**

- Describe briefly why a literature review is of value.
- Name the steps a researcher goes through in conducting a review of the literature.
- Describe briefly the kinds of information contained in a general reference and give an example of such a source.
- Explain the difference between a primary and a secondary source and give an example of each type.
- Explain what is meant by the phrase "search term" and how it differs from the term "descriptor," and how both terms are used in literature searches.
- Conduct both a manual and electronic search of the literature on a topic of interest to you after a small amount of "hands-on" computer time and a little help from a librarian.
- Write a summary of your literature review.
- Explain what a meta-analysis is.

INTERACTIVE AND APPLIED LEARNING After, or while, reading this chapter:

Go to the Online Learning Center at www.mhhe.com/fraenkel9e to:

- Read the Guide to Electronic Research



Go to your online Student Mastery Activities book to do the following activities:

- Activity 3.1: Library Worksheet
- Activity 3.2: Where Would You Look?
- Activity 3.3: Do a Computer Search of the Literature

After a career in the military, Phil Gomez is in his first year as a teacher at an adult school in Logan, Utah. He teaches U.S. history to students who did not graduate from high school but who now are trying to obtain a diploma. He has learned the hard way, through trial and error, that there are a number of techniques that simply put students to sleep. He sincerely wants to be a good teacher, but he is having trouble getting his students interested in the subject. As he is the only history teacher in the school, the other teachers are not of much help.

He wants to get some ideas, therefore, about other approaches, strategies, and techniques that he might use. He decides to do an Internet search to see what he can find out about effective strategies for teaching high school history. His first search yields 12,847 hits! Phil is overwhelmed and at a loss for which sources to view. Should he look at books? Journal articles? Websites? Government documents? Unpublished reports? Where should he look for the most valid resources? And how could his searching be done more systematically?

In this chapter, you will learn some answers to these (and related) questions. When you have finished reading, you should have a number of ideas about how to conduct a systematic or "planned" search of the educational literature.

The Definition and Value of a Literature Review

A **literature review** is an assessment of a body (or bodies) of literature that pertains to a specific question. A literature review is helpful in several ways. It not only helps researchers glean the ideas of others interested in a particular research question (through important research findings and theories), but it also lets them read about the results of similar or related studies. Literature reviews also give researchers ideas about areas where more research needs to be done. They refer to these as "gaps" in the literature. In fact, a detailed literature review is usually required of master's and doctoral students when they design a thesis. In some graduate programs, students must propose theses or dissertations that address gaps in the existing literature. Thus researchers often weigh information from a literature review in light of their own interests and situation. There are two important points here: Researchers need to be able not only to locate other work dealing with their intended area of study but also to evaluate this work in terms of its relevance to the research question of interest.

Types of Sources

A researcher needs to be familiar with three basic types of sources as he or she begins to search for information related to the research question. These terms apply both to computerized searching (online or electronic) as well as manual searching (using print/paper tools to locate print/paper sources). Regardless of the tools involved, the search process is similar.

1. **General reference tools** are the sources researchers often refer to first. In effect, they tell where to look to locate other sources—such as articles, books, reports, and other documents—that deal directly with the research question. General reference tools are usually either *indexes,* which list the author, title, and place of publication of articles and other materials, or **abstracts**, which give a brief summary or

annotation of various publications, as well as their author, title, and place of publication. Historically, indexes and abstracts were only available in paper format, but since the advent of computers and the Internet, most libraries have access to indexes and abstracts through online databases containing electronic indexes, abstracts, dictionaries, and encyclopedias. For example, the *Current Index to Journals in Education* (CIJE) and *Resources in Education* (RIE), the indexes most frequently used by researchers in education, are no longer available as distinct publications in paper format. Instead, since 2002 the information they contain is now only available electronically in ERIC (Education Resources Information Center), an online database of education research and information sponsored by the U.S. Department of Education and the Institute of Education Sciences. (We'll show you how to do an ERIC search of the literature later in this chapter.) Similarly, *Psychological Abstracts,* the general reference most commonly used by researchers in psychology, is now only available through PsycINFO, a computer database compiled by the American Psychological Association (APA) that includes abstracts and bibliographic citations for journal articles, evaluation reports, conference papers and proceedings, speeches, and the like.

2. **Primary sources** are publications in which researchers report the results of their studies directly to the reader. Most primary sources in education are journals, such as the *Journal of Educational Research* or the *Journal of Research in Science Teaching*. These journals are usually published monthly or quarterly, and the articles in them typically report on a particular research study. Most college libraries pay for subscriptions to online collections that provide registered students free access to a wide array of online databases, including electronic journals that allow users to download full text articles on demand.
3. **Secondary sources** refer to publications in which authors describe the work of others. The most common secondary sources in education are textbooks. A textbook in educational psychology, for example, may describe several studies as a way to illustrate various ideas and concepts in psychology. Other commonly used secondary sources include educational encyclopedias, research reviews (usually peer-reviewed journals that publish literature reviews on specific topics), and yearbooks.

Researchers who seek information systematically on a given topic would refer first to one or more general reference tools to locate primary and secondary sources of value. For a quick overview of the problem at hand, secondary sources are probably the best bet. For detailed information about the research that others have done, primary sources should be consulted.

Today, most researchers search the literature electronically by means of a personal computer. In the past, before the rise of the Internet and the World Wide Web, most searches were done manually. Manual searching (using print/paper tools to locate print/paper sources) is now used primarily by library users interested in locating rare or historical sources. However, some professors also require students to conduct manual searches because not all sources are available electronically. Although the interface may be different, both processes are the same in terms of the steps involved.

Steps Involved in a Literature Search

The following steps are involved in a literature search:

1. Define the research problem as precisely as possible.
2. Look at relevant secondary sources (these can include research reviews).
3. Select and peruse one or two appropriate general reference works.
4. Formulate search terms (key words or phrases) pertinent to the problem or question of interest.
5. Search for relevant primary sources using appropriate general reference tools.
6. Obtain and read relevant primary sources, and note and summarize key points in the sources.

Let us consider each of these steps in some detail.

DEFINE THE PROBLEM AS PRECISELY AS POSSIBLE

The first thing a researcher needs to do is to state the research question as specifically as possible. General questions such as "What sorts of teaching methods work well in urban classrooms?" or "How can a principal be a more effective leader?" are too fuzzy to be of much help when looking through a general reference. The question of interest should be narrowed down to a specific area of

concern. More specific questions, therefore, might be, "Is discussion more effective than showing a video clip in motivating students to learn social studies concepts?" or "What sorts of strategies do principals at high-performing elementary schools use to improve faculty and staff morale?" A serious effort should be made to state the question so that it focuses on the specific issue for investigation.

LOOK THROUGH ONE OR TWO SECONDARY SOURCES

Once the research question has been stated in specific terms, it is a good idea to look through one or two secondary sources to get an overview of previous work that has been done on the problem. This needn't be a monumental chore or take an overly long time to complete. The main intent is to get some idea of what is already known about the problem and of some of the other questions that are being asked. Researchers may also get an idea or two about how to revise or improve the research question. Here are some of the most commonly used secondary sources in educational research:

Encyclopedia of Educational Research (current edition online only): Contains brief summaries of over 300 topics in education. Excellent source for getting a brief overview of the problem. The last print edition was published in 2004.

Handbook of Research on Teaching (latest edition published in 2001): Contains longer articles on various aspects of teaching. Most are written by educational researchers who specialize in the topic on which they are writing.

National Society for the Study of Education (NSSE) Yearbooks: Published every year, these yearbooks deal with recent research on various topics. Each book usually contains from 10 to 12 chapters dealing with various aspects of the topic. The society, which was founded in 1901 and dissolved in 2008, has continued to publish its yearbooks without interruption as part of the *Teachers College Record* at Columbia University.

Review of Educational Research: Published four times a year by the American Educational Research Association (AERA), this journal contains reviews of research and extensive bibliographies on various topics in education and is available online through ERIC.

Review of Research in Education: Published yearly, each volume contains surveys and syntheses of research on important topics written by leading educational researchers. RRE is currently available online in ERIC.

Subject Guide to Books in Print (current edition): Each of the preceding sources contains reviews of research on various topics of importance in education. There are many topics, however, that have not been treated in a recent review. If a research question deals with such a topic, the best chance for locating information discussing research on the topic lies in recent books on the subject. The best source for identifying books that might discuss research on a topic is the current edition of *Books in Print,* available in both print and electronic formats.

In addition, many professional associations and organizations have published handbooks of research in their fields. These include:

- *Handbook of Reading Research*
- *Handbook of Research on Curriculum*
- *Handbook of Research on Educational Administration*
- *Handbook of Research on Mathematics Teaching and Learning*
- *Handbook of Research on School Supervision*
- *Handbook of Research on Multicultural Education*
- *Handbook of Research on Music Teaching and Learning*
- *Handbook of Research on Social Studies Teaching and Learning*
- *Handbook of Research on Teacher Education*
- *Handbook of Research on the Teaching of English*
- *Handbook of Research on the Education of Young Children*

Each of these handbooks includes a current summary of research dealing with important topics related to its particular field of study. To locate a handbook in paper format, use your library catalog; to locate a handbook in electronic format, use your library catalog, database list, and/or electronic journal list. Other places to look for books on a topic of interest are the library catalog and the curriculum department (for textbooks) in the library. Education Index and PsycINFO also list newly published professional books in their fields.

SELECT THE APPROPRIATE GENERAL REFERENCE TOOLS

After reviewing a secondary source to get a more informed overview of the problem, researchers should have a clearer idea of exactly what to investigate. At this point, it is a good idea to look again at the research question to see if it needs to be rewritten in any way to make it more focused. Once satisfied, researchers can select one or two general references to help identify particular journals or other primary sources related to the question. Of the many general reference tools a researcher can consult, here is a list of the ones most commonly used:

Education Index: Since 2004, this online-only publication indexes articles from more than 300 educational publications. This electronic index includes three separate databases: (1) Education Index Retrospective, which covers the period 1929–1982; (2) Education Index, which contains sources from 1983 to the present; and, (3) Education Full Text, which has abstracts and full-text articles dating back to 1983.

Education Resources Information Center (ERIC): ERIC is an online database of education research and information sponsored by the U.S. Department of Education and the Institute of Education Sciences. It includes indexes and abstracts, journal articles, reports, and other documents in education, counseling, and related social science disciplines. In 2002, after the major education indexes formerly known as the Current Index to Journals in Education (CIJE) and Resources in Education (RIE) merged and ceased print publication, ERIC began to offer access to their content electronically. Today, ERIC provides citations and direct access to more than 1.3 million bibliographic sources, including citations to articles from more than 750 journals, as well as unpublished documents including curriculum guides, conference papers, and research reports. Although full-text access to all *current* education-related sources is not yet possible, ERIC provides users with abstracts and exact citation information about the source. Publication information usually includes the following: article title, author, journal name, page, and volume and issue numbers, as well as an ERIC identifying number. For ERIC journal articles (EJs), the number is EJ + a six-digit number (Figure 3.1); for nonjournal article documents in ERIC, the number is ED + a six-digit number (Figure 3.2). ERIC documents (EDs) are documents produced by state departments of education, final reports of federally funded research projects, reports from school districts, commissioned papers written for government agencies, and other published and unpublished documents. Abstracts and bibliographic information are usually provided on all documents. Many reports that would otherwise never be published are reported in ERIC, which makes this an especially valuable resource to use.

PsycINFO: PsycINFO, the electronic version of the now-ceased *Psychological Abstracts*, is a database containing summaries and citations of literature in the field of psychology dating back to the 1800s (and even some records from the 1700s and 1600s). Produced by the American Psychological Association (APA), the largest and most distinguished professional association of psychologists and scientists in the world, PsycINFO contains abstracts and bibliographic data of journal articles, book chapters, books, technical reports, and dissertations in the social and behavioral sciences, and is available on the association's APA PsycNET.

Two additional general reference tools that sometimes provide information about educational research are the following:

Exceptional Child Education Resources (ECER) online database: ECER is a bibliographic database produced by the Council for Exceptional Children (its print publication ceased in 2004). ECER provides information about exceptional children from more than 200 journals. Using a format similar to ERIC, it provides author, subject, and title indexes. It is worth consulting if a research topic deals with exceptional children, since it covers several journals not searched for in ERIC.

Social Science Citation Index (SSCI): Another type of citation and indexing service, SSCI offers the forward search, a unique feature that can be helpful to researchers. When a researcher has found an article that contains information of interest, he or she can locate the author's name in the SSCI to find out the names of other authors

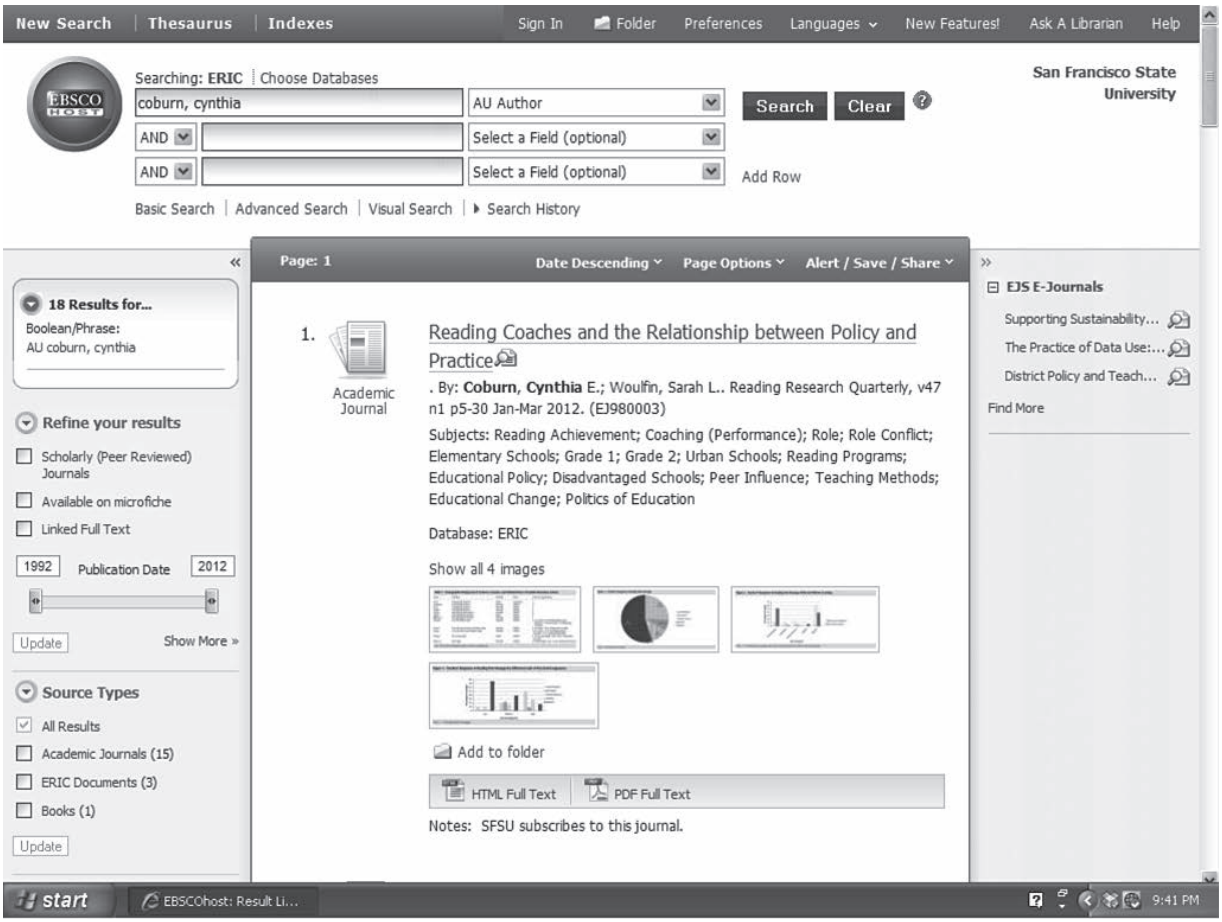


Figure 3.1 *Excerpt from ERIC Journal Article*

who have cited this same article and the journals in which their articles appeared. These additional articles may also be of interest to the researcher, particularly in compiling a references list for an *annotated bibliography* (a list of sources on a topic with brief summaries) or a literature review. The researcher can determine what additional books and articles were cited by these other authors and thus conceivably obtain information that otherwise might be missed. Most libraries offer SSCI online searching since it is available as part of the Web of Science database (currently published by Thomson Scientific). Most doctoral dissertations and many master's theses in education report on original research and hence are valuable sources for literature reviews.

ProQuest Dissertations and Theses: ProQuest maintains a digital library that has more than 1.4 million titles, including abstracts and full text files of doctoral dissertations and master's theses submitted by more than 1,000 graduate schools and universities in North America, Europe, and Asia. Coverage includes the complete text of most dissertations and theses completed from 1988 to the present, in addition to abstracts of theses and dissertations dating back to 1861 (Figure 3.3).

FORMULATE SEARCH TERMS

Once a general reference work has been selected, researchers need to formulate **search terms**—words or phrases they can use to locate primary sources. Search terms are the most important words in the problem

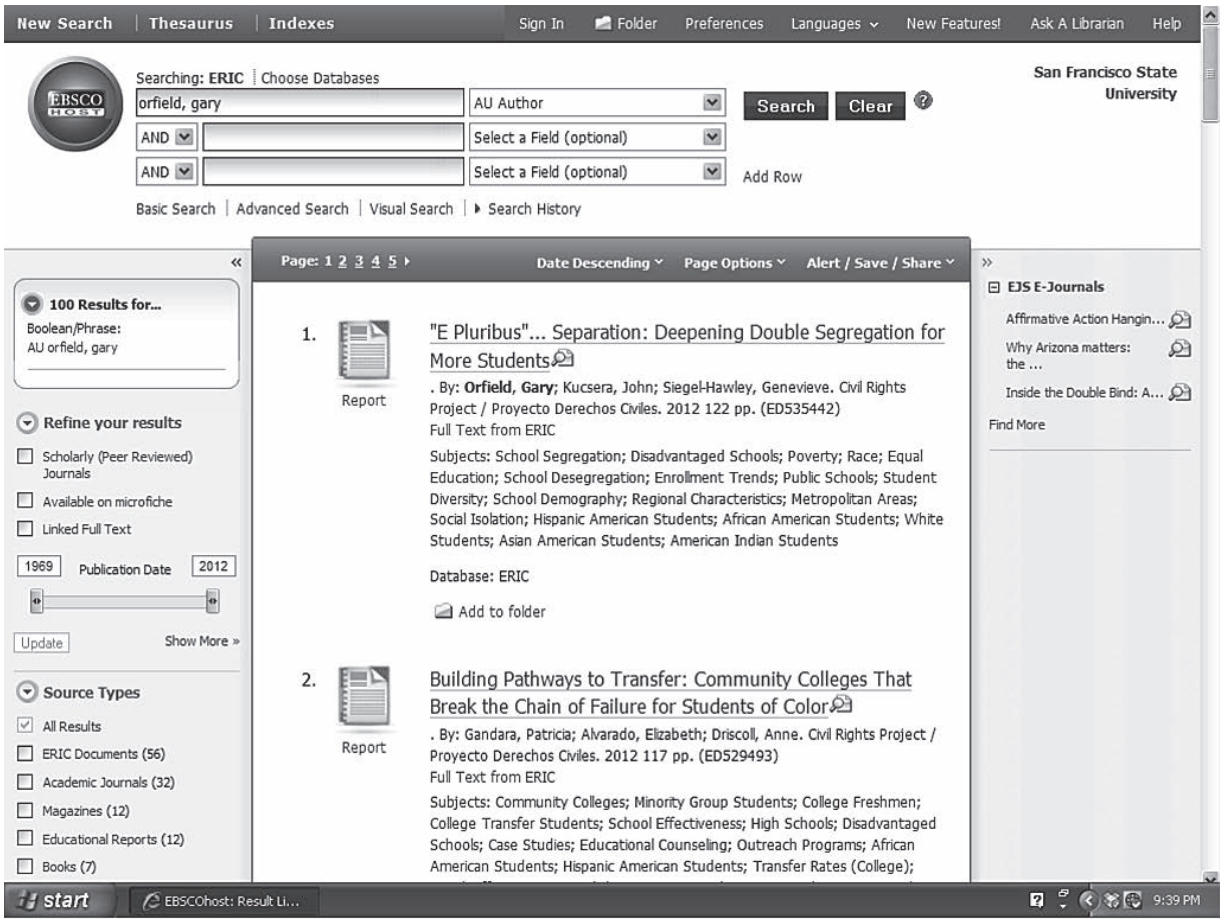


Figure 3.2 *Excerpt from ERIC Document*

statement. Take, for example, the research question, "Do students taught by a teaching team learn more than students taught by an individual teacher?" What are the most important words—the key terms—in this question? Remember that a researcher conducts a literature search to find out what other research has been done with regard to—and what others think about—the research question of interest. The key term in this question, therefore, is *teaching team.* This term, plus other similar or synonymous terms, should be listed. Possibilities here might include *team teaching, joint teaching, cooperative teaching, collaboration and teaching,* and the like. The researcher would then select the appropriate general reference tool.

Indexes and abstracts, whether in electronic or print/paper format, are designed to present uniform access to citation information. Each citation—whether in a database, index, or abstract—contains information unique to the citation (i.e., author, title, publication date, etc.). In addition, each citation is assigned vocabulary words that help categorize related articles. In most databases the assigned vocabulary words are referred to as **subject terms** or **subject headings**, and in ERIC these terms are referred to specifically as **descriptors**. Learning which subject terms, subject headings, or descriptors are used in a specific system can help researchers more easily identify all related articles on a particular subject or topic.

If using an online database to search the literature, to retrieve results the researcher would enter search terms in the search boxes provided (Figure 3.4). Using a paper/print tool, the user would look at a list of subject terms

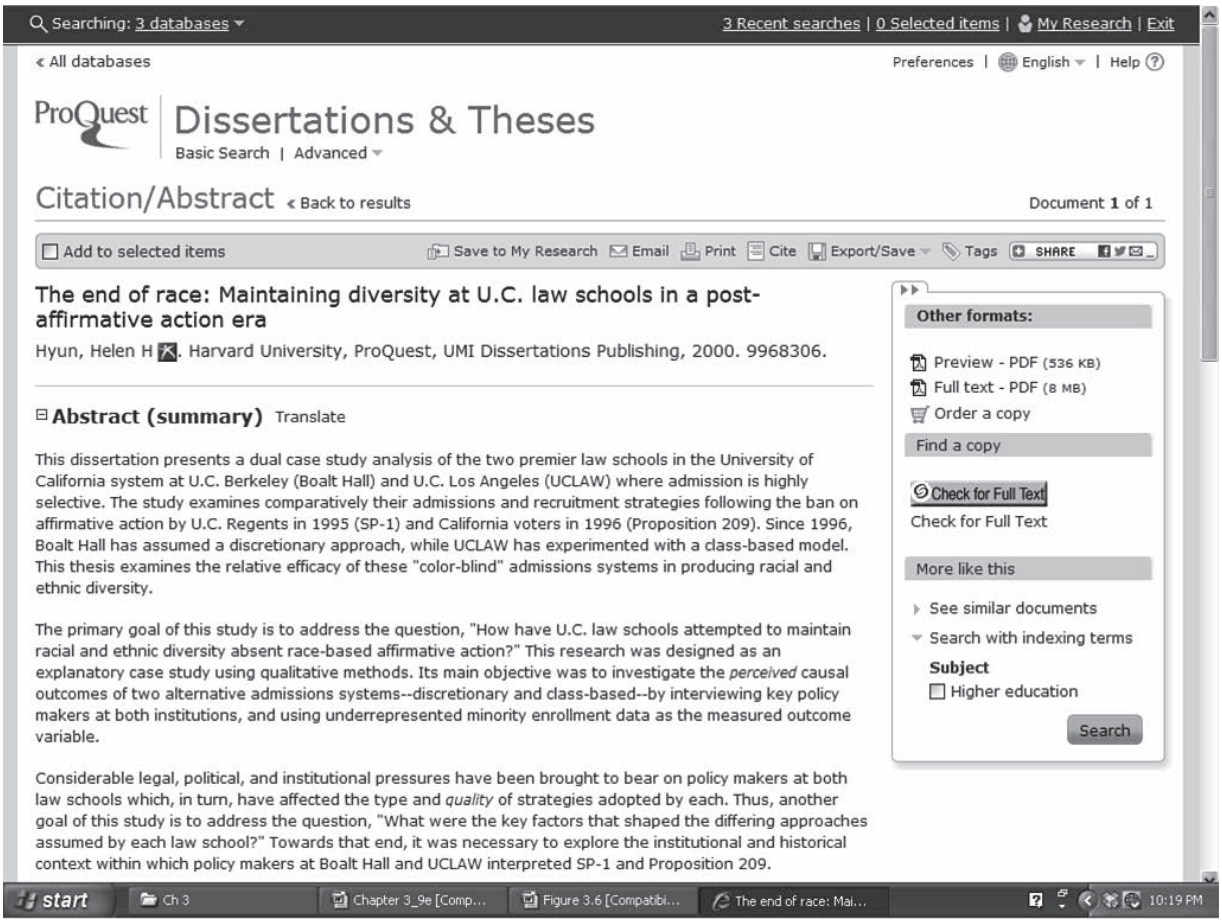


Figure 3.3 *Excerpt from ProQuest Dissertations and Theses*

that match the search terms listed in the resource to find a list of relevant citations. He or she would then select the articles that seem to bear on the research topic.

SEARCH USING GENERAL REFERENCE TOOLS

Although there is no magic formula to follow, many researchers in education turn to library resources and other information resources available online. An online search of the literature can be performed in databases available through the websites of almost all university libraries and most public libraries. Many state departments of education also provide access to online education databases, as do some county offices of education and some large school systems. The database most commonly used by educational researchers is ERIC, which can be searched electronically back to 1966. Other databases include PsycINFO, Exceptional Child Education Resources, and ProQuest Dissertations and Theses. More than 200 other specialized databases in other subject areas exist; to find out more about them, contact a nearby college or university library and ask for assistance from a reference librarian.

Doing a Computer Search

To illustrate the steps involved in online searching, we will next describe an actual search conducted using the ERIC database.

Define the Problem as Precisely as Possible. The research problem should be stated as specifically as possible so that relevant descriptors can

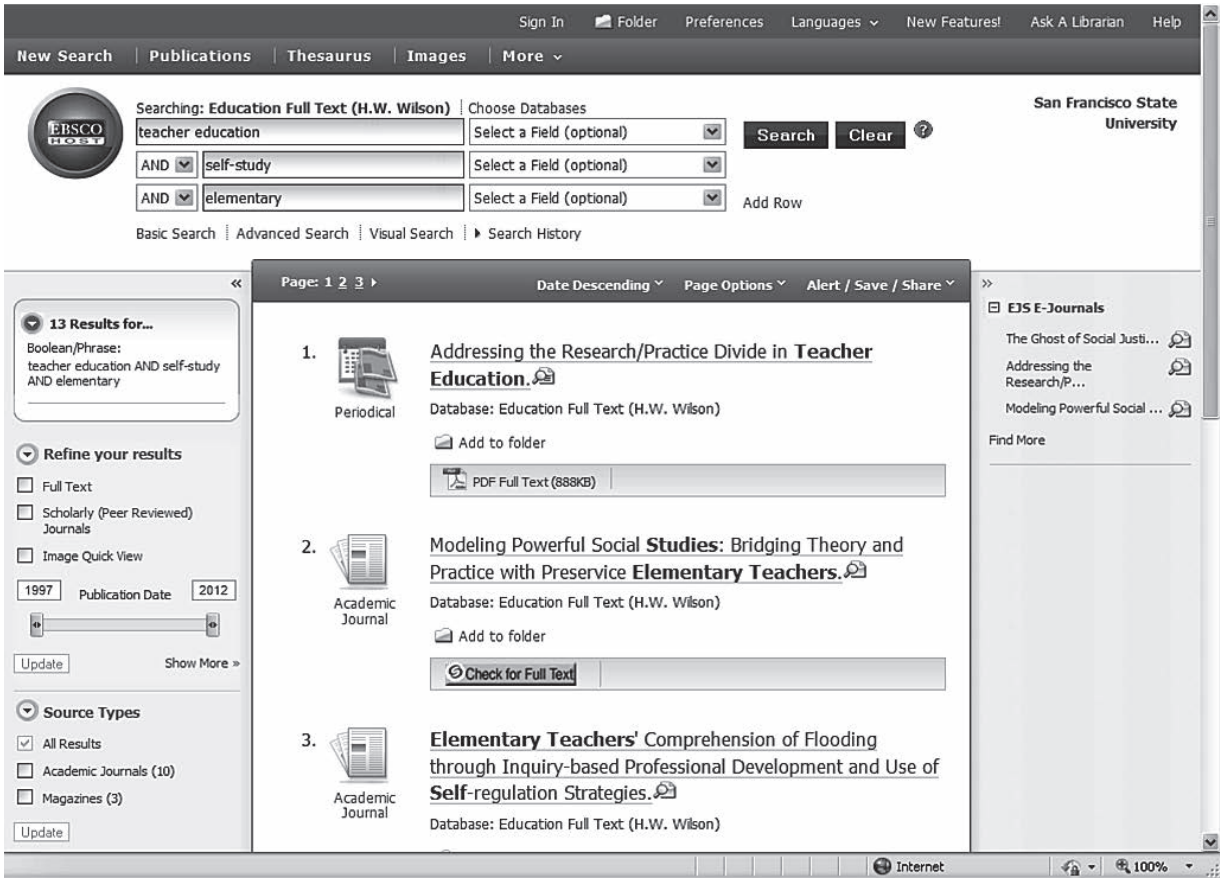


Figure 3.4 *Excerpt from Education Full Text*

be identified. A broad statement of a problem such as, "How effective are questioning techniques?" is much too general. It is liable to produce an extremely large number of references, many of which probably will be irrelevant to the researcher's question of interest. For the purposes of our search, therefore, we posed the following research question: "What sorts of questioning techniques help students understand historical concepts most effectively?"

Decide on the Extent of the Search. The researcher must now decide how many references to obtain. For a review for a journal article, a researcher might decide to review only 20 to 25 fairly recent references. For a more detailed review, such as a master's thesis, perhaps 30 or 40 might be reviewed. For a very exhaustive review, as for a doctoral dissertation, as many as 100 or more references might be searched.

Decide on the Database. As we mentioned earlier, many databases are available, but the one most commonly used is ERIC. Subject terms or headings may not be applicable to different databases, although many do overlap. In ERIC, as noted earlier, subject terms are referred to as "descriptors." We used the ERIC database in this example, as it is still the best for searches involving educational topics.

Select Search Words and Discover Descriptors. Researchers often begin a search in ERIC using keywords they use to describe their topic. The researcher types these keywords in ERIC to tell the computer what to search for. The selection of keywords is somewhat of an art form. If the keyword is too general, too many references may be located, many of which are likely to be irrelevant. If the keyword is too narrow, too few references will be located, and many of those

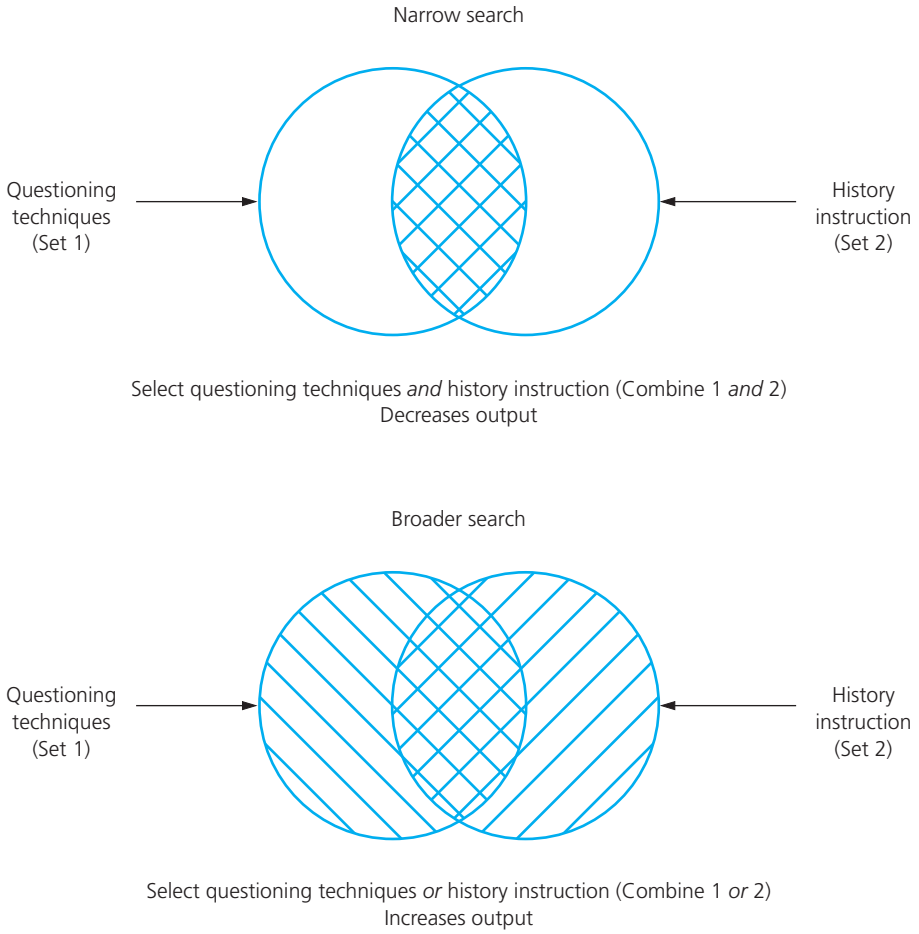


Figure 3.5 *Venn Diagrams Showing the Boolean Operators AND and* OR

applicable to the research question may be missed. Furthermore, if the keyword used is not the same or similar to the descriptors used by the system to describe the topic, then few or no search results will be found. For ERIC users, the ERIC thesaurus provides a list of descriptors commonly used in their databases. Search results in ERIC also list descriptors and subject terms associated with individual citations.

Keywords and descriptors can be used singly or in various combinations to locate references. Certain key words, called **Boolean operators**, enable the retrieval of terms in various combinations. The most commonly used Boolean operators are *and* and *or.* For example, by asking a computer to search for a single keyword or descriptor such as *inquiry,* all references containing this term would be selected. By connecting two keywords or descriptors with the word *and,* however, researchers can narrow the search to locate only the references that contain *both* of the descriptors. Asking the computer to search for *questioning techniques and history instruction* would narrow the search because only references containing both keywords or descriptors would be located. On the other hand, by using the word *or,* a search can be broadened, since any references with *either* one of the keywords or descriptors would be located. Thus, asking the computer to search for *questioning techniques or history instruction* would broaden the search because references containing either one of these terms would be located. Figure 3.5 illustrates the results of using these Boolean operators.

All sorts of combinations are possible. For example, a researcher might ask the computer to search for *questioning techniques or inquiry and history instruction or civics instruction.* For a reference to be selected, it would have to contain either the descriptor term *questioning techniques* or the descriptor term *inquiry,* as

well as either the descriptor term *history instruction* or the descriptor term *civics instruction.*

For our search, we chose the following descriptors: *questioning techniques, concept teaching,* and *history instruction.* We also considered using a number of related terms. These included *inquiry, teaching methods,* and *learning processes* under *questioning techniques,* and *concept formation* and *cognitive development* under *concept teaching.* Upon reflection, however, we decided not to include *teaching methods* or *learning processes*, as we felt these terms were too broad to apply specifically to our research question. We also decided not to include *cognitive development* for the same reason.

Conduct the Search. After determining which descriptors to use, the next step is to enter them into the database and let it do its work. Figure 3.6 presents a summary of the search results. As you can see, we asked the database first to search for *questioning techniques* (search no. 1), followed by *history instruction* (search no. 2), followed by a combination (search no. 3) of these two descriptors (note the use of the Boolean operator *and*). This resulted in a total of 5,124 references for *questioning techniques,* 6,891 references for *history instruction,* and 65 for a combination of these two descriptors. We then asked the database to search just for the descriptors *concept* and *teaching* (search no. 4). This produced a total of 41,159 references. Because we were particularly interested in concept teaching as applied to questioning techniques and history instruction, however, we asked the database to search for a combination (search no. 5) of these three descriptors (again note the use of the operator *and*). This produced two references. If full text is available, the two

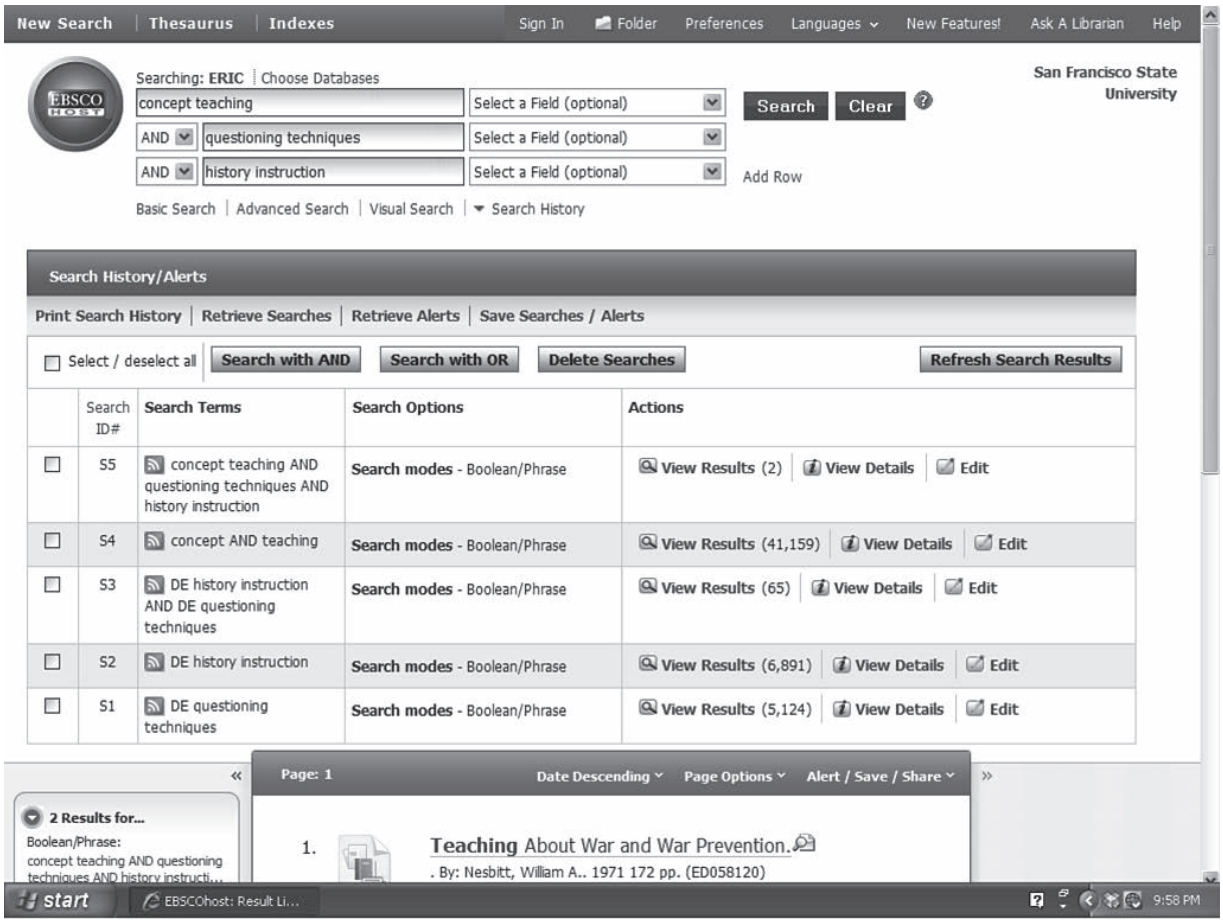


Figure 3.6 *Summary of Search Results*

references can usually be downloaded immediately, printed, saved, or e-mailed.

If the initial effort of a search produces too few references, the search can be broadened by using more general descriptors. Thus, we might have used the term *social studies instruction* rather than *history instruction* had we not obtained enough references in our search. Similarly, a search can be narrowed by using more specific descriptors. For example, we might have used the specific descriptor *North American history* rather than the inclusive term *history.*

Documenting Citation Information. Once a researcher has located references, he or she needs to document the information found and prepare it for later use. If any articles are found that deal with some aspect of the researcher's topic, the author, title, page, publication date, and publication source should be recorded. Several output options are available, including saving, e-mailing, printing, and exporting references. Researchers should choose the option that contains the most information, as it might prove useful later. Standard information would include citation information, the abstract, and in some cases the complete full text of the document.

Many databases, including some versions of ERIC provide options to save, e-mail, or print citations in specific formats, including APA, MLA (Modern Language Association), University of Chicago, and other academic citation styles used to cite references in the literature. Researchers must develop their own process for saving and documenting information found while completing their research. Whether using classic tools (like index cards) or newer tools (like EndNote, RefWorks, and Zotero) to take notes and record and organize your citations, the important thing is to take care to record the bibliographic information completely and accurately. Nothing is more annoying than trying to find an incorrect reference listed in a bibliography.

Searching ERIC. Researchers today find it easier and quicker to search reference tools (as well as most other references) online. In addition to compiling abstracts and citations, many articles are now instantly available for downloading as Portable Document Format (PDF) files. Another important feature of ERIC is that more than one descriptor can be searched at the same time.

Suppose a researcher were interested in finding information on the use of questioning in teaching science. A search of the ERIC database using the descriptors *questioning techniques* and *science* would reveal the abstracts and citations of several articles. Notice that the word *source* indicates where to find the articles if the researcher wants to read all or part of them—one is in the journal *Research in Science and Technological Education* and the other in *International Journal of Science Education.*

Searching PsycINFO. Searching through PsycINFO is similar to searching through ERIC. As in ERIC, key words or subject terms and descriptors can be used singularly or in various combinations to locate references. All articles of interest can then be located in the identified journals. The best strategy for a thorough search is probably as follows.

1. Before 1965: Search Education Index.
2. From 1966 to 1968: Search ERIC and Education Index.
3. From 1969 to the present: Search ERIC, Education Index, and other education databases.

OBTAIN PRIMARY SOURCES

After searching the general references, researchers will have a list of bibliographic citations. The next step is to locate each of the sources listed, then read and take notes on those relevant to the research problem. There are two major types of primary sources to be familiar with in this regard—journals and reports.*

Professional Journals. Many journals in education publish reports of research. Some publish articles on a wide range of educational topics, while others limit what they print to a particular specialization, such as social studies education. Most researchers become familiar with the journals in their field of interest and look them over from time to time. Examples include the *American Educational Research Journal, Child Development, Educational Administration Quarterly, Journal of Educational Research, Journal of Research in Science Teaching, Reading Research Quarterly,* and *Theory and Research in Social Education.*

Reports. Many important research findings are first published as reports. Almost all funded research

*Students should reference primary sources and avoid citing secondary sources in their papers.

projects produce a final report of their activities and findings when research is completed. In addition, each year many reports on research activities are published by the U.S. government, by state departments of education, by private organizations and agencies, by local school districts, and by professional associations. Furthermore, many individual researchers report on their recent work at professional meetings and conferences.

Most reports are abstracted in ERIC and are available as PDF files. Many papers, such as the reports of presidential task forces, national conferences, or specially called professional meetings, are published only as reports. They are usually far more detailed than journal articles and much more up-to-date. Also, they are not copyrighted. Reports are a very valuable source of up-to-date information that could not be obtained anywhere else.

Locating Primary Sources. Most primary source material is located in academic journals, since that is where most of the research findings in education are published. Although more and more journals are available online through library websites, to conduct a thorough search of relevant primary sources, it may be necessary to search manually for sources only available in print/paper format. Depending on the layout of the library, users can often go right to the stacks where print/paper journals are shelved alphabetically. In some libraries, however, only the librarian can retrieve the journals.

A problem that every researcher faces at one time or another is that a needed book or journal is not available in the library. When this is the case, it can usually be obtained directly from the author. Addresses of authors (e-mail and conventional) are often listed in education databases. An author's address can sometimes be found in the directory of a professional association, such as the *American Educational Research Association Biographical Membership Directory* or *Who's Who in American Education.* If a reprint or book cannot be obtained directly from the author, it may be possible to obtain it from another library in the area through **interlibrary loan**, a service that nearly all libraries provide. By entering information into a database, a library user can find out within seconds which libraries within a designated area have a particular book or journal.

Using Secondary Sources to Locate Primary Sources. Although the principal goal of a literature review is to assess original reports of empirical research that have been published mainly in academic journals, secondary sources can be useful. Locating published review articles—either literature reviews or *meta-analyses,* which we describe in the next section—can give students a sense of the depth and breadth of the literature related to a topic. They only need to add the keyword "review" to the list of search terms or descriptors used in their initial search of the literature to produce extensive reference lists (or bibliographies) contained in research reviews—a technique called "branching." In addition, *landmark studies* are considered highly significant by experts for understanding a topic. While reading a review, a student may come across the name of a researcher repeatedly and/or an explicit statement by the author that a study is especially important. In this case, the student should add the landmark source(s) to his or her reading list for inclusion in the literature review.

Researchers often discuss the findings of their empirical studies in terms of the theoretical literature. Understanding the major theories and theorists—particularly landmark theorists—that have contributed to the literature on a topic is paramount for preparing a comprehensive review. This can be done by adding the term "theory" as a keyword or descriptor in an electronic database search. In general, major theorists conduct research studies themselves, some of which are considered landmark studies. Including a discussion of the major theories and theorists in a literature review provides important contextual information for the review reader to better understand the empirical research findings to be evaluated.

Meta-Analysis. In academic journals, the literature reviews accompanying research reports are usually required to be brief. Unfortunately, this largely prevents much in the way of critical analysis of individual studies. Furthermore, traditional literature reviews basically depend on the judgment of the reviewer and hence are prone to subjectivity.

In an effort to moderate this subjective tendency and reduce the time required in reviewing many studies on the same topic, the concept of **meta-analysis** has been developed. In the simplest terms, when a researcher does a meta-analysis, he or she averages the results of the selected studies to get an overall index of outcome or relationship. The first requirement is that results be described statistically, most commonly through the calculation of effect sizes and correlation coefficients (we explain both later in the text). In one of the earliest

What a Good Summary of a Journal Article Should Contain

- The problem being addressed
- The purpose of the study
- The hypotheses of the study (if there are any)
- The methodology the researcher used
- A description of the subjects involved
- The results
- The conclusions

studies using meta-analysis,[1] 375 studies on the effectiveness of psychotherapy were analyzed, leading to the conclusion that the average client was, after therapy, appreciably better off than the average person not in therapy.

As you might expect, this methodology has had widespread appeal in many disciplines—to date, hundreds of meta-analyses have been done. Critics raise a number of objections, some of which have been at least partly remedied by statistical adjustments. We think the most serious criticisms are that a poorly designed study counts as much as one that has been carefully designed and executed and that the evaluation of the meaning of the final index remains a judgment call, although an informed one. The former objection can be remedied by deleting "poor" studies, but this brings back the subjectivity meta-analysis was designed to mitigate. It is clear that meta-analysis is here to stay; we agree with those who argue that it cannot replace an informed, careful review of individual studies, however. In any event, the literature review should include a search for relevant meta-analysis reports, as well as individual studies.

Evaluating Primary Sources. When all the desired journal articles and documents are gathered together, the review can begin. It is a good idea to begin with the most recent articles and work backward. The reason for this is that most of the more recent articles will cite the earlier articles and thus provide a quick overview of previous work. How should an article be read? While there is no one perfect way to do this, here are some helpful suggestions:

Read the abstract or the summary first. This will tell whether the article is worth reading in its entirety. Record the bibliographic data and take notes on the article using your preferred note-keeping tool (electronic, manual, or a hybrid). Almost all research articles follow approximately the same format. They usually include an abstract; an introductory section that presents the research problem or question and reviews other related studies; the objectives of the study or the hypotheses to be tested; a description of the research procedures, including the subjects studied, the research design, and the data collection instruments and tools used; the results or findings of the study; a summary (if there is no abstract); and the researcher's conclusions. Also, make sure to use the branching technique discussed earlier by perusing the references (or bibliography) listed at the end of the article to help you locate other relevant sources.

Be as brief as possible in taking notes, yet do not exclude anything that might be important to describe later in the full review. For each of these steps, the following should be noted:

1. *Problem:* State it clearly.
2. *Hypotheses or objectives:* List them exactly as stated in the article.
3. *Procedures:* List the research methodology used (experiment, case study, and so on), the number of subjects and how they were selected, and the kind of instrument (questionnaire, tally sheet, and so on) used. Make note of any unusual techniques employed.
4. *Findings:* List the major findings. Indicate whether the objectives of the study were attained and whether the hypotheses were supported. Often the findings are summarized in a table.
5. *Conclusions:* Record or summarize the author's conclusions. Note your disagreements with the author and the reasons for such disagreement. Note strengths or weaknesses of the study that make the results particularly applicable or limited with regard to your research question. See Figure 3.7 for general prompts aimed at critically analyzing research articles.

- Introduction: Is the research problem clearly described? (Did the researcher convince you the problem area is significant?) Is the purpose of the study clearly stated? Is the scope of the study defined too narrowly? Is it too broad? Are key research terms clearly explained and defined?
- Literature Review: Does the literature review presented help you understand the problem? Does the researcher explain how the study differs from earlier ones reported in the literature? Does the researcher describe related theories? Identify gaps in the literature?
- Design and Methodology: Were the research setting and sample described in sufficient detail? Are there any obvious flaws or weaknesses in the researcher's methods of observation or instruments used? Are there any obvious sampling flaws? (e.g., were appropriate participants selected?) Were the descriptions of procedures and methods of observation sufficiently detailed? Were any important details missing?
- Findings and Conclusions: Was the description of results clearly communicated? Did the conclusion(s) seem justified? Did the report lack any information important for evaluating its findings? Overall, did the study make an important contribution to advancing knowledge?

Figure 3.7 *Prompts for Evaluating Research Studies*

Tips for Avoiding Unintentional Plagiarism. What is plagiarism? Simply put, it is the act of misrepresenting someone else's ideas as your own. One of the most challenging tasks of preparing a literature review is to paraphrase primary sources in your own words. This can be especially difficult when the study authors already provide a summary or abstract of their study. In many cases, students commit plagiarism unintentionally when they misuse or under-cite sources in their written work. Whether unintentional or not, plagiarism is a serious offense that can lead to dismissal at many U.S. colleges and universities. Some general tips to use when summarizing sources are: (1) do not use someone else's words or ideas without referencing the source or including the information in quotation marks; (2) refer to an academic style manual to credit or cite the source correctly (improper citation may also be considered plagiarism); (3) use quotations sparingly; (4) while it's better to over-cite than to under-cite, don't go overboard!

Writing the Literature Review Report

Once you have located and evaluated the sources relevant to your topic, you are ready for the final steps in preparing your review of the literature. In addition to locating and evaluating your sources, the next steps involve organizing, integrating, and synthesizing these sources. This process is inductive and often leads students to believe they are regressing, rather than progressing. As researchers and professors who have written and supervised many student literature reviews, our advice to you is to be patient and flexible! The process may appear as if you are going backward (not forward), but this is part of the larger process of discovery involved in doing research. *Part of this process involves reformulating the main question that guides your literature review oftentimes in the process of reviewing the research.* For example, let's say you begin your literature search interested in the topic of mixed-ability grouping in elementary school classrooms. Your initial query is "What do we know about heterogeneous grouping in elementary schools?" After reviewing the research and familiarizing yourself with the vocabulary and background related to the topic, your revised question becomes "What are the effects of inclusion practices on elementary school student achievement?" This restated question is much improved because it (1) includes key terms or vocabulary currently used by researchers in the field; (2) helps to clarify the purpose and scope of the literature review; and (3) examines the topic more deeply by exploring a possible relationship between inclusion practices (the presumed cause) and student achievement (the presumed outcome).

Study	Definition/measure	Sample	Method	Key findings
Alexander, Entwisle, & Horsey (1997)	Academic engagement; behavioral measure (marks for work habits from report cards and teachers' report of externalizing behavior).	Random sample of 1st-grade students in Baltimore; collected school completion data.	Survey; longitudinal design; logistic regression.	The study found a strong relationship between behavioral disengagement in the early years and dropping out of high school.
Battistich, Solomon, Watson, & Schaps (1997)	Academic engagement; classroom observation (participation, on-task behavior).	24 ethnically diverse elementary schools that were participating in the intervention program entitled Caring School Communities.	Multi-method study: classroom observation, student and teacher survey.	Students' sense of community was positively associated with academic engagement.
Birch & Ladd (1997)	Engagement/school adjustment; scales for liking, avoidance, cooperative participation, and self-directedness.	Kindergarten students; primarily White.	Survey; cross-sectional design; regression analyses.	Dependency in teacher-child relations was correlated with less positive school engagement.
Blumenfeld & Meece (1988)	Cognitive engagement; self-reports of learning strategies; distinction made between superficial and higher-level learning strategies.	4th-to-6th-grade students in science classes; middle-class schools	Multi-method-surveys, interviews, and classroom observations; cross-sectional design; quantitative and qualitative analysis of lessons where cognitive engagement scores differed substantially.	Procedural complexity of task was negatively related to use of high-level cognitive strategies; teachers who pressed students for understanding and communicated high expectations had students with higher cognitive engagement.

Figure 3.8 *Example of an Annotated Table*

Source: Fredricks, J.A., Blumenfeld, P.C., & Paris, A.H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74* (1), 59–109. Reprinted with permission.

The process of evaluating, integrating, and synthesizing relevant sources in a literature review involves analyzing and categorizing the literature into major topics and subtopics. There are many strategies for organizing the structure of a review. A common one is to include summary tables to provide readers with an overview of the research related to, for example: (1) definitions of key constructs and measures; (2) differing research methods used in studies examining the same research question or phenomenon; and (3) key study characteristics and findings.

Creating tables to summarize relevant sources is helpful for providing readers with an overview of the literature. These summary or *annotated tables* are particularly useful for presenting complex topics, but they should not be used in place of text when the topics found in the literature are straightforward. In other words, summary tables should be included judiciously. An example of an annotated table describing empirical research on key study characteristics and findings related to school engagement is seen in Figure 3.8. Note that the studies are listed in alphabetical order by researchers' last names.

Literature reviews may differ in format, but they typically consist of the following five parts:

1. The *introduction* briefly describes the nature of the research problem and states the research question. The researcher also explains in this section what led him or her to investigate the question and why it is an important question to investigate.
2. The *body* of the review briefly reports what others have found or thought about the research problem. Related studies are usually discussed together, grouped under subheadings (to make the review easier to read). Major studies are described in more detail, while less important work can be referred to in just a line or two. Often this is done by referring to several studies that reported similar results in a single sentence, somewhat like this: "Several other small-scale studies reported similar results (Avila, 2009; Brown, 2006; Cartwright, 2009; Davis & Lim, 2008; Martinez, 2007)."
3. The *summary* of the review ties together the main threads revealed in the literature reviewed and presents a composite picture of what is—and is not—known or thought to date. Findings may be tabulated to give readers some idea of how many other researchers have reported identical or similar findings or have similar recommendations.
4. Any *conclusions* the researcher feels are justified based on the state of knowledge revealed in the literature should be included. What does the literature suggest are appropriate courses of action to take to try to solve the problem? And what are other important research questions that should be examined?
5. A *reference list* (or bibliography) with full bibliographic data for all sources mentioned in the review is essential. There are many ways to format reference lists, but the one outlined in the *Publication Manual of the American Psychological Association* (2009) is particularly easy to use.

A Note on APA Style. Several academic style manuals are currently used in higher education (e.g., *MLA Handbook for Writers of Research Papers*, *University of Chicago Manual of Style*, and Turabian's *A Manual for Writers of Term Papers, Theses, and Dissertations*). Most instructors require students to adopt a discipline-specific style guide for writing and formatting research papers. In the field of educational research, the *Publication Manual of the American Psychological Association,* or APA Style Manual, is most widely used. Dating back to the 1950s, APA style was initially conceived as a set of standards (guidelines and rules) promoting consistency for manuscripts submitted to academic journals. Now in its sixth edition (published in 2009), the APA manual covers other types of documents including theses, dissertations, and general term papers. The manual itself is over 400 pages long, contains more than 200 rules, and is organized around three major categories: page formatting, text rules, and documentation. *Page formatting* includes rules about margins, indents, spacing, tables, figures, and general paper organization. *Text rules* include guidelines for the presentation of quotations, and *documentation* refers to citations and references. There are many Internet sites that have truncated versions of APA rules. While some of these can be helpful, they should not be used as a replacement for the text, which can be found in most campus or online bookstores. We also encourage students to peruse the APA website (www.apa.org) and download the free online tutorial on the basics of APA style: www.apastyle.org/learn/tutorials/basics-tutorial.aspx.

RESEARCHING THE WORLD WIDE WEB

The **World Wide Web (WWW)** is part of the Internet, a vast reservoir of information on all sorts of topics in a wide variety of areas. Prior to 1993, the Internet was barely mentioned in the research literature. Today, it cannot be ignored. Despite the fact that ERIC and (on occasion) PsycINFO remain the databases of choice when it comes to research involving most educational topics, researching the Internet should also be considered. Space prevents us from describing the Internet in detail, but we do wish to point out some of its important features.

Using a **Web browser** (the computer program that lets you gain access to the Internet), a researcher can find information on almost any topic with just a few clicks of the mouse button. Some of the information on the Internet has been classified into **indexes,** which can be easily searched by going from one category to another. In addition, several **search engines** are available that are similar in many respects to those we used in our search of the ERIC database. Let us consider both indexes and search engines in a bit more detail.

Indexes. Indexes group websites together under similar *categories,* such as *Australian universities, London art galleries,* and *science laboratories.* This is similar to what libraries do when they group similar kinds of

information resources together. The results of an index search will be a list of websites related to the topic being searched. If a researcher is interested in finding the site for a particular university in Australia, for example, he or she should try using an index.

Indexes often provide an excellent starting point for a review of the literature. This is especially true when a researcher does not have a clear idea for a research question or topic to investigate. Browsing through an index can be a profitable source of ideas. Felden offers an illustration:

> For a real-world comparison, suppose I need some household hardware of some sort to perform a repair; I may not always know exactly what is necessary to do the job. I may have a broken part, which I can diligently carry to a hardware store to try to match. Luckily, most hardware stores are fairly well organized and have an assortment of aisles, some with plumbing supplies, others with nails and other fasteners, and others with rope, twine, and other materials for tying things together. Proceeding by general category (i.e., electrical, plumbing, woodworking, etc.), I can go to approximately the right place and browse the shelves for items that may fit my repair need. I can examine the materials, think over their potential utility, and make my choice.[2]

Search Engines. If one wants more specific information, such as biographical information about George Orwell, however, one should use a search engine, because it will search *all* of the contents of a website. Search engines such as Google Scholar or the Librarians' Index to the Internet use software programs (sometimes called *spiders* or *Web crawlers*) that search the entire Internet, looking at millions of websites and then indexing all of the words on them. The search results obtained are usually ranked in order of relevancy (i.e., the number of times the researcher's search terms appear in a document or how closely the document appears to match one of the *key words* submitted as query terms by the researcher).

A search engine like Google Scholar will search for and find the individual pages of a website that match a researcher's search, even if the site itself has nothing to do with what the researcher is looking for. As a result, one usually has to wade through an awful lot of irrelevant information. Felden gives us an example:

> Returning to the hardware store analogy, if I went to the store in search of some screws for my household project and employed an automatic robot instead of using my native cunning to browse the (well-arranged) aisles, the robot could conceivably return (after perusing the entire store) with everything that had a screw in it somewhere. The set of things would be a wildly disparate collection. It would include all sorts of boxes of screws, some of them maybe even the kind I was looking for, but also a wide array of other material, much of it of no use for my project. There might be birdhouses of wood held together with screws, tools assembled with screws, a rake with a screw fastening its handle to its prongs. The robot would have done its job properly. It had been given something to match, in this case a screw, and it went out and did its work efficiently and thoroughly, although without much intelligence.[3]

To be satisfied with the results of a search, therefore, one needs to know what to ask for and how to phrase the request to increase the chances of getting what is desired. If a researcher wants to find out information about universities, but not English universities, for example, he or she should ask specifically in that way.

Thus, although it would be a mistake to search only the Internet when doing a literature search (thereby ignoring a plethora of other material that often is so much better organized), it has some definite advantages for some kinds of research. Unfortunately, it also has some disadvantages. Here are some of each:

Advantages of Searching the Internet

- *Currency:* Many resources on the Internet are updated very rapidly; often they represent the very latest information about a given topic.
- *Access to a wide variety of materials:* Many resources, including works of art, manuscripts, even entire library collections, can be reviewed at leisure using a personal computer.
- *Varied formats:* Material can be sent over the Internet in different formats, including text, video, sound, and animation.
- *Immediacy:* The Internet is "open" 24 hours a day. Information can be viewed on one's own computer and can be examined as desired or saved to a hard drive or disk for later examination and study.

Disadvantages of Searching the Internet

- *Disorganization:* Unfortunately, much of the information on the Internet is not well organized. It employs few of the well-developed classification systems used by libraries and archives. This disorganization makes it an absolute necessity for researchers to have good online searching skills.

- *Time commitment:* There is always a need to search continually for new and more complete information. Doing a search on the Internet often (if not usually) can be quite time-consuming and (regretfully) sometimes less productive than doing a search using more traditional sources.
- *Lack (sometimes) of credibility:* Anyone can publish something on the Internet. As a result, much of the material one finds there may have little, if any, credibility.
- *Uncertain reliability:* It is so easy to publish information on the Internet that it often is difficult to judge its worth. One of the most valuable aspects of a library collection is that most of its material has been collected carefully. Librarians make it a point to identify and select important works that will stand the test of time. Much of the information one finds on the Internet is ill-conceived or trivial.
- *Ethical violations:* Because material on the Internet is so easy to obtain, there is a greater temptation for researchers to use the material without citation or permission. Copyright violation is much more likely than with traditional material.
- *Undue reliance:* The amount of information available on the Internet has grown so rapidly in the last few years that some researchers may be misled to think they can find everything they need on the Internet, thereby causing them to ignore other, more traditional sources of information.

In searching the Internet, then, here are a few tips to get the best search results.[4] Many of these would apply to searching ERIC or PsycINFO as well.

- *Use the most specific keyword you can think of.* Take some time to list several of the words that are likely to appear on the kind of website you have in mind. Then pick the most unusual word from your list. For example, if you're looking for information about efforts to save tiger populations in Asia, don't use *tigers* as your search term. You'll be swamped with sites about the Detroit *Tigers,* the Princeton *Tigers,* and every other sports team that uses the word *tigers* in its name. Instead, try searching for a particular tiger species that you know to be on the endangered list—*Bengal tiger* or *Sumatran tiger* or *Siberian tiger.*[5]
- *Make it a multistep process.* Don't assume that you will find what you want on the first try. Review the first couple of pages of your results. Look particularly at the sites that contain the kind of information you want. What unique words appear on those pages? Now do another search using just those words.
- *Narrow the field by using just your previous results.* If the keywords you choose return too much information, try a second search of just the results you obtained in your first search. This is sometimes referred to as *set searching*. Here's a tip we think you'll find extremely helpful: Simply add another keyword to your search request and submit it again.
- *Look for your keyword in the website title.* Frequently, the best strategy is to look for your unique keyword in the title of websites. If you are looking for information about inquiry teaching in secondary school history classes, for example, begin with a search of sites that have *inquiry teaching* in the title. Then do a second search of just those results, looking for *secondary school history classes.*
- *Find out if case counts.* Check to find out if the search engine you are using pays any attention to upper- and lowercase letters in your keywords. "Will a search for java, a microsystems program, for example, also find sites that refer to the program as JAVA?"[5]
- *Check your spelling.* If you have used the best keywords that you can think of and the search engine reports "No results found" (or something similar), check your spelling before you do anything else. Usually, the fact that a search engine does not come up with any results is due to a spelling or typing error.
- *Assess the credibility and reliability of Internet sources*. One quick way to evaluate the accuracy and objectivity of information published on the Internet is to check the URL or domain address extension. Web addresses ending in .gov, .edu, and .org are sponsored, respectively, by the federal government, higher education institutions, and nonprofit organizations. Although these resources are not necessarily free of error and bias, compare them to URL extensions ending in .com, which represent commercial vendors that often use website advertising to generate revenue for profit. In addition, scan the site for the organization's purpose statement as well as the author's credentials (and contact information), then judge for yourself.

Public Internet websites that provide educational resources and information include:

The National Center for Education Statistics (http://nces.ed.gov): NCES is located in the U.S. Department of Education and the Institute of Education Sciences and serves as the primary federal entity for collecting and analyzing data related to education.

California Department of Education (www.cde.ca.gov): Includes information collected by

California schools on testing and accountability, curriculum and instruction, finance and grants, and data and statistics that assess needs and measure performance. (*Note:* Also, check the departments of education websites of other states.)

RAND Education (www.rand.org/education): RAND Education is an education "think tank," a nonprofit organization that conducts policy-based research and analysis to address major problems in the educational system. The website provides free access to recent reports and literature reviews, as well as links to other RAND publications and books.

The Urban Institute (www.urban.org): A nonpartisan think tank that conducts economic and social policy research affecting urban areas, including an Education Policy Center with a strong emphasis on immigrant children, poverty, and health care. Publishes books, as well as studies and reports, that are often available on the website.

Google Scholar (http://scholar.google.com): Provides a simple way to do a broad search for scholarly literature, including peer-reviewed papers, theses, books, abstracts, and articles. Google Scholar should be used as a supplement to, not as a substitute for, searching through academic databases.

Other education databases, available through most libraries, include:

ProQuest Education Journals: Offers access to more than 745 top educational publications, including nearly 600 titles in full text.

Education Research Complete: Topics covered include all levels of education from early childhood to higher education, and all educational specialties, such as multilingual education, health education, and testing.

Education Full Text: A bibliographic database produced by the H. W. Wilson Company that lists indexes, abstracts, and full-text articles from more than 350 journals dating back to 1996.

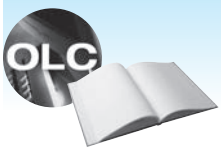
ERIC (EBSCO): References articles in more than 750 professional journals, thousands of unpublished research reports, conference papers, and curriculum guides in all areas of education.

Academic Search Premier: Provides full-text access to nearly 1,560 academic journals in education, humanities, and the social and physical sciences.

JSTOR: Contains the full text of more than 169 national and international journals available from JSTOR, an organization founded in 1995 to promote global scholarship using its digital archives.

ProQuest Dissertations and Theses: With more than 2 million entries, PQD&T is the single, central, authoritative resource for information about doctoral dissertations and master's theses.

Web of Science: The ISI Web of Science is the interface for institutional access to the ISI Citation Databases, which cover over 10,000 leading journals and over 100,000 book-based and journal conference proceedings.



Go back to the **INTERACTIVE AND APPLIED LEARNING** feature at the beginning of the chapter for a listing of interactive and applied activities. Go to the **Online Learning Center** at **www.mhhe.com/fraenkel9e** to take quizzes, practice with key terms, and review chapter content.

Main Points

THE VALUE OF A LITERATURE REVIEW

- A literature review helps researchers learn what others have written about a topic. It also lets researchers see the results of other related studies.
- A detailed literature review is often required of master's and doctoral students when they design a thesis.

TYPES OF SOURCES FOR A LITERATURE REVIEW

- Researchers need to be familiar with three basic types of sources (general references, primary sources, and secondary sources) in doing a literature review.
- General reference tools are sources a researcher consults to locate other sources.
- Primary sources are publications in which researchers report the results of their investigations. Most primary source material is located in journal articles.
- Secondary sources refer to publications in which authors describe the work of others.
- The most common secondary sources in education are textbooks.
- Search terms are keywords or phrases researchers use to help locate relevant primary sources.

STEPS INVOLVED IN A LITERATURE SEARCH

- The essential steps involved in a review of the literature include: (1) defining the research problem as precisely as possible; (2) deciding on the extent of the search; (3) deciding on the data base(s) to be searched; (4) formulating search terms; (5) searching general reference tools for relevant primary sources; (6) obtaining and reading the primary sources, and noting and summarizing key points in the sources.

WAYS TO DO A LITERATURE SEARCH

- Today, there are two ways to do a literature search—manually, using print/paper tools to locate print/paper sources; and electronically, by means of a computer. The most common and frequently used method, however, is to search online, via computer. Regardless of the tools involved, the search process is similar.
- There are five essential points (problem, hypotheses, procedures, findings, and conclusions) that researchers should record when taking notes on a study.

DOING A COMPUTER SEARCH

- Computer searches of the literature have a number of advantages—they are fast, are fairly inexpensive, provide printouts, and enable researchers to search using more than one descriptor at a time.
- The steps in a traditional manual search are similar to those in a computer search, though computer searches are usually the norm.
- Researching the Internet should be considered, in addition to ERIC and PsycINFO, in doing a literature search.
- Some of the information on the Internet is classified into indexes, which group websites together under similar categories.
- To obtain more specific information, search engines should be used, because they search all of the contents of a website.

THE LITERATURE REVIEW REPORT

- The literature review report consists of an introduction, the body of the review, a summary, the researcher's conclusions, and a bibliography.

- A literature review should include a search for relevant meta-analysis reports, as well as individual studies.
- When a researcher does a meta-analysis, he or she averages the results of a group of selected studies to get an overall index of outcome or relationship.

Key Terms

abstract 38
Boolean operator 46
descriptor 43
general reference tool 38
index 53
interlibrary loan 49
literature review 38
meta-analysis 49
primary source 39
search engine 53
search term 42
secondary source 39
subject heading 43
subject term 43
Web browser 53
World Wide Web (WWW) 53

For Discussion

1. Why might it be unwise for a researcher not to do a review of the literature before planning a study?
2. Many published research articles include only a few references to related studies. How would you explain this? Is this justified?
3. Which do you think are more important to emphasize in a literature review—the opinions of experts in the field or related studies? Why?
4. One rarely finds books referred to in literature reviews. Why do you suppose this is so? Is it a good idea to refer to books?
5. Can you think of any type of information that should *not* be included in a literature review? If so, give an example.
6. Professor Jones states that he does not have his students do a literature review before planning their master's theses because they "take too much time," and he wants them to get started collecting their data as quickly as possible. In light of the information we have provided in this chapter, what would you say to him? Why?
7. Can you think of any sorts of studies that would *not* benefit from having the researcher conduct a literature review? If so, what might they be?

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Research Exercise 3: Review of the Literature

Using Problem Sheet 3, list the specific problem(s) and/or question(s) you will address in a brief review of the literature related to your study. Indicate what types of sources you did and did not include and why. Then summarize the conclusions you arrived at based on what you found in your review.

Problem Sheet 3

Review of the Literature

1. What are the specific problem(s) or question(s) to be addressed in your literature review?

   _____
   _____
   _____

2. What general reference tools did you use to conduct your search? (List specific electronic databases consulted.)

   _____
   _____

3. What search terms did you use?

   a. _____ d. _____
   b. _____ e. _____
   c. _____ f. _____

4. Specify the scope of the review and explain your inclusion/exclusion criteria (i.e., what was and was not included and why?).

   _____
   _____

5. What topics and subtopics emerged about your problem and question as you conducted your search?

   _____
   _____
   _____

6. What are your conclusions based on the findings of your review?

   _____
   _____
   _____
   _____

An electronic version of this Problem Sheet that you can fill in and print, save, or e-mail is available on the Online Learning Center at www.mhhe.com/fraenkel9e.