not have a sense of what is available, your best strategy is to start narrow and broaden as necessary. For example, if you find that there are very few references related to the effect of interactive multimedia on the achievement of 10th-grade biology students, you could broaden your search by including all sciences or all secondary students.

A useful way to narrow or broaden a keyword search is to use Boolean (wow!) operators, that involve the use of and, or, and not connectors. Put simply, using the connections and or not narrow a search, while the connector or broadens it. Let’s say you have two keywords, Easter and rabbit. If you indicate that you are interested in obtaining references that relate to Easter and rabbit, you are saying that you only want references that refer to both Easter and rabbit. If you indicate that you are interested in obtaining references that relate to Easter but not to rabbit, your search is narrowed to references containing Easter, and references containing rabbit references will not be included in the search. If you indicate that you will take references related to Easter or rabbit, you are saying you will take references that relate to either or both concepts. By using various combinations of the and and or connectors, you can vary your search strategy as needed. Table 2.1 presents a summary of ways to limit keyword searches. Note that it is difficult to develop a search model that can be commonly used, since most libraries have unique search methods. Know your library.

Consulting Computer Databases to Locate Journals, Articles, Reports, and Other Publications

Computerized databases are used to conduct literature searches. Available at most university and public libraries, computer databases facilitate identifying relevant primary sources. General reference computer searches can be done online or by using a CD-ROM.

The steps involved in conducting a computer database search, be it online or CD-ROM, are similar to those involved in a book search:

1. Identify keywords related to your topic.
2. Select the databases you wish to search.
3. Specify your search strategy.

### TABLE 2.1 Summary of Ways to Limit Keyword Searches

<table>
<thead>
<tr>
<th>FIELD CODES</th>
<th>BOOLEAN OPERATORS</th>
<th>FIELD QUALIFIERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>k = assessment</td>
<td>k = assessment and alternative</td>
<td>k = 1990 or 1, or 2, and assessment (books on assessment published in 1990)</td>
</tr>
<tr>
<td>k = book review</td>
<td>k = authentic or alternative</td>
<td></td>
</tr>
<tr>
<td>K = automa? (retrieves automatic, automation, automating, etc.)</td>
<td>k = assessment not standardized</td>
<td></td>
</tr>
<tr>
<td>Looks for word or phrase anywhere in a bibliographic record</td>
<td>Used to expand or limit a search</td>
<td>k = curriculum and fro.la (Books on curriculum in French)</td>
</tr>
<tr>
<td>Adjacency is assumed (i.e., words will be next to each other unless specified)</td>
<td>And retrieves records containing both terms</td>
<td>Used with Boolean operators to limit searches</td>
</tr>
<tr>
<td>? is used to retrieve singular, plural, or variant spellings</td>
<td>Or: retrieves records containing either term</td>
<td>Inquire in your library for available field qualifiers</td>
</tr>
</tbody>
</table>

Adapted from Boston College Libraries Information System, "Guide to Using Quest." Used with permission of Trustees of Boston College.
The most commonly used computer databases in education include the following:

ERIC: The ERIC (Educational Resources Information Center) database contains more than 900,000 references to thousands of educational topics. It is updated monthly and includes journal articles, books, theses, conference papers, curricula, standards, and guidelines. ERIC contains entries from two sources: the RIE (Resources in Education) file of document citations and the CIJE (Current Index to Journals in Education) file of journal article citations from more than 750 professional journals. The ERIC database provides bibliographic information and abstracts of educational sources, but not full texts. Complete ERIC documents are available in libraries, either in microfiche format or in ERIC journals on the library shelves.

The first step in using ERIC resources is to become familiar with the terms that ERIC uses to index references. The Thesaurus of ERIC Descriptors, also available in most libraries, is a compilation of the keywords used in indexing ERIC documents. The ERIC thesaurus indicates the various terms under which a given topic is indexed.

ERIC references are labeled with the beginning codes ED or EJ. In most libraries, ED references are available on microfiche. In some libraries, you will need to ask a librarian to get the microfiche for you, while in other libraries, you are able to get it yourself. EJ references refer to literature that can be found on library shelves. To find out where an EJ reference is located at your library, do a title search on your library computer's online catalog. Enter t= and the name of the journal or book the ERIC reference is in. The resulting screen will tell you if your library owns the journal, where it is located, and whether it is available on the library shelves or on microfiche. Figure 2.2 shows the result of a sample ERIC search.

**Figure 2.2 Results of an ERIC search.**

<table>
<thead>
<tr>
<th>Record 1 of 1 — ERIC 1992–12/97</th>
</tr>
</thead>
<tbody>
<tr>
<td>AN: ED410922</td>
</tr>
<tr>
<td>AU: Schwartz, Wendy</td>
</tr>
<tr>
<td>CS: ERIC Clearinghouse on Urban Education, New York, N.Y.</td>
</tr>
<tr>
<td>PY: 1996</td>
</tr>
<tr>
<td>NT: 6 p.</td>
</tr>
<tr>
<td>PR: EDRS Price - MF01/PC01 Plus Postage.</td>
</tr>
<tr>
<td>AB: Charter schools are created and managed by an entity composed of parents and/or teachers, community and/or business leaders, nonprofit organizations, and for-profit businesses. Many people believe that charter schools can provide a high quality education without the regulatory constraints of the conventional public schools. This digest reviews many reports on the approximately 350 charter schools in the United States to show the various ways that charters approach funding, curriculum and instruction, assessment and accountability, parent involvement, and staffing. It focuses on the ability of charter schools to serve urban students. Many charter schools have been granted unprecedented freedom to implement their plans for a higher quality and more equitable educational system, and they have also tapped into funding sources previously unavailable to educators. Critics of charter schools are of the opinion that the freedom will not result in educational improvement, and that the lack of accountability may mean that a school's inaptitude will go unrecognized. It is too soon to evaluate the performance of students in charters, but it is apparent that charters are attracting urban students, in part because of their location. However, they are not attracting the most vulnerable and disadvantaged students. They are attracting dedicated and talented teachers but may not be able to offer them wages comparable to those of the public schools. Whether charter schools can provide a more effective public education remains to be seen, but their presence is at least serving to dramatize the need for educational improvement and increased community and business involvement and financial support. (Contains nine references.) (SLD)</td>
</tr>
</tbody>
</table>
Figure 2.3 Results of an Education Index search.

Education Index. The Education Index is an electronic index of educational periodicals with abstracts since 1983. It also includes yearbooks and monograph series, videotapes, motion pictures and computer program reviews, and citations to law cases. The Education Index provides bibliographic information and abstracts of sources (not the full text of articles) pertaining to the topic(s) that have been researched. A sample result of an Education Index search is shown in Figure 2.3.

Psychological Abstracts. Psychological Abstracts presents summaries of completed psychological research studies. The sections on developmental psychology and educational psychology are generally the most useful to educational researchers. The first step in using Psychological Abstracts is to refer to the Thesaurus of Psychological Index to find the keywords used in indexing Psychological Abstracts documents. For example, if your research topic concerns the effect of interactive multimedia on the achievement of 10th-grade biology students, you would find that interactive multimedia is not a descriptor used by the Thesaurus. You would have to try other descriptors, such as instructional media. The procedure for using Psychological Abstracts is similar to the procedure for ERIC and the Education Index. In addition to the keywords, you should check the word bibliography. A bibliography related to your topic may exist and provide references. You should locate those references of interest to you in the usual way, by doing a title search on your university's computer catalog system.

Dissertation Abstracts. Dissertation Abstracts contains bibliographic citations and abstracts from all subject areas for doctoral dissertations and master's theses completed at more than 1,000 accredited colleges and universities worldwide. The database dates back to 1861, with abstracts included from 1980 forward. If after reading an abstract you wish to obtain a copy of the complete dissertation, check to see if it is available in your library. If not, speak to a librarian about how to obtain a copy of the dissertation. The results of a Dissertation Abstracts search are shown in Figure 2.4.

Readers' Guide to Periodical Literature. Readers' Guide to Periodical Literature is an index similar in format to the Education Index. Instead of professional publications, however, it indexes articles in nearly 200 widely read magazines. Articles located through the Readers' Guide will generally be nontechnical, opinion-type references. These can be useful in documenting the significance of your problem. The Readers' Guide lists bibliographic information for each entry. To obtain an article listed in the Readers' Guide, do a title search in your library of the magazine in which it appears. Then find out if your library holds that magazine.
CHAPTER 2 SELECTING AND DEFINING A RESEARCH TOPIC

FIGURE 2.4 Results of a Dissertation Abstracts search.

Annual Review of Psychology. The Annual Review of Psychology includes reviews of psychological research that are often relevant to educational research. It provides bibliographic information and abstracts for specific areas such as child development, educational administration, exceptional child education, and language teaching.

Obtaining the References Listed in the Bibliographies in Your Secondary Sources

Given the prior discussion and description of library resources, you should be able to access references listed in the secondary source bibliographies you examined to start your literature review. For references that are books, do a title search in your library's computerized catalog to find out if the books are held by your library and, if so, if they are available. For references that appear to be journal articles or reports, go to ERIC or the Education Index. Do a title search of the article or report. This should pinpoint the article or report directly. You can then use the usual means to determine if the publication in which the article or report appears is in your library.
PART 1 INTRODUCTION

Searching the Internet and the World Wide Web

The Internet and the World Wide Web provide information and resources on many educational topics. The Internet links organizations and individuals all over the world. The World Wide Web is a service on the Internet that gives users access to text, graphics, and multimedia. You access the Web using a computer with a modem that is hooked up to a telephone or cable line. Your computer will also need a browser (such as Netscape® or Internet Explorer).

The resources that you can find on the Web are almost limitless. With just a few clicks, you can access electronic educational journals that provide full-text articles, bibliographic information, and abstracts. You can also obtain up-to-the-minute research reports and information about educational research activities being undertaken at various research centers, and can access education home pages that provide links to a range of education resources that other researchers have found especially valuable. At times, the sheer volume of information on the Web can be overwhelming. The best way to become adept at searching the Web efficiently is simply by surfing (browsing) it during your spare time. In this way, you will become familiar with maneuvering from site to site and implementing successful search strategies.

Here are some Web sites that are especially useful to educational researchers. Their Internet addresses are in parentheses. Search the Net to find some of your own addresses.

ERIC. (http://www.ERIC.org/index.html) Yes, ERIC is also available on the World Wide Web, and it functions very much the same as it does on a database in your library. In addition to the Research in Education (RIE) and Current Index to Journals in Education (CIJE), which we discussed earlier, the ERIC Web site also provides extensive user assistance, including AskERIC, an electronic question-answering service for teachers working online, as well as ERIC Clearinghouses and Adjunct Clearinghouses, from which you may access ERIC Digests and other subject-specific abstracts and publications. Web page addresses and short descriptions of the contents of just some of the various clearinghouses are found in Table 2.2.

UnCoverWeb. (http://uncweb.carl.org) UnCover is a database with brief descriptive information about articles from more than 17,000 multidisciplinary journals. If you register (for a fee) with UnCover REVEAL, an automated alerting service, you will receive monthly tables of contents from your favorite periodicals. The service also allows you to create search strategies for your research topics.

NewJour. (http://gort.ucsd.edu/newjour/) This site provides an up-to-date list of journals and newsletters available on the Internet on any subject. Using NewJour's search option, you can do a title search to see if a specific journal is currently on the Web, or do a subject search to find out which journals in a particular subject are available on the Internet. Direct links are provided to available journals.

Education Week. (http://www.edweek.org/) Full-text articles from Education Week, a periodical devoted to education reform, schools, and policy, are available at the site. In addition to current and past articles, the site provides background data to enhance current news, resources for teachers, and recommended Web sites to investigate for other information.

Journal of Statistics in Education. (http://www.amstat.org/publications/ise/) This electronic journal provides abstracts and full-text articles that have appeared since 1993. Interesting features of the journal are "Teaching Bits: A Resource for Teachers of Statistics" and "Datasets and Stories."
TABLE 2.2 Some ERIC Clearinghouses on the World Wide Web

<table>
<thead>
<tr>
<th>CLEARINGHOUSE</th>
<th>WEB ADDRESS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERIC Clearinghouse on Assessment and Evaluation</td>
<td><a href="http://eric.col.edu">http://eric.col.edu</a></td>
<td>Seeks to provide balanced information concerning educational assessment and resources to encourage responsible test use. Database contains records on more than 10,000 tests and research instruments covering a range of subjects and fields.</td>
</tr>
<tr>
<td>ERIC Clearinghouse on Counseling and Student Services</td>
<td><a href="http://ericcass.uncg.edu">http://ericcass.uncg.edu</a></td>
<td>Includes information on school counseling, school social work, school psychology, mental health counseling, manage and family counseling, career counseling, and student development, as well as parent, student, and teacher education in the human resources area.</td>
</tr>
<tr>
<td>ERIC Clearinghouse on Disabilities and Gifted Education</td>
<td><a href="http://eric.org/">http://eric.org/</a></td>
<td>Focuses on professional literature, information, and resources relating to the education and development of persons of all ages who have disabilities and/or are gifted.</td>
</tr>
<tr>
<td>ERIC Clearinghouse on Science, Math, and Environmental Education</td>
<td><a href="http://eric.smu.org/">http://eric.smu.org/</a></td>
<td>Retrieves and disseminates printed materials related to science, mathematics, and environmental education.</td>
</tr>
<tr>
<td>ERIC Clearinghouse on Teaching and Teacher Education</td>
<td><a href="http://eric.cs.org/">http://eric.cs.org/</a></td>
<td>Responds to requests for information on teaching, teacher education, and health, physical education, recreation, and dance (HPERD), and produces special publications on current research, programs, and practices.</td>
</tr>
<tr>
<td>ERIC Clearinghouse on Urban Education</td>
<td><a href="http://eric-web.tc.columbia.edu">http://eric-web.tc.columbia.edu</a></td>
<td>Monitors curriculum and instruction of students of diverse racial, ethnic, social class, and linguistic populations in urban (and suburban) schools.</td>
</tr>
</tbody>
</table>

CSTEET: The Center for the Study of Testing, Evaluation, and Educational Policy. (http://www.csteep.bc.edu/) This educational research organization's Web page contains information on testing, evaluation, and public policy studies on school assessment practices and international comparative research.

National Center for Education Statistics. (http://www.nces.ed.gov/) This site contains statistical reports and other information on the condition of U.S. education. It also reports on education activities internationally.

Bill Huitt's Home Page. (http://www.Chiron.valdosta.edu/willhu) This site was created by Dr. William G. (Bill) Huitt of the Department of Psychology, Counseling & Guidance at Valdosta State University in Georgia. It contains some interesting links to general, curriculum, technology, reform, and multicultural education.

Developing Educational Standards. (http://putnamvalley.schools.org/standards.html) This site contains a wealth of up-to-date information regarding educational standards and curriculum frameworks from all sources (national, state, local, and other). The table of contents includes Governmental and General Resources, Standards and Frameworks Documents Listed by Subject Area, Standards and Frameworks Documents Listed by State, and Updates and Information. Entire standards and frameworks are available.

Internet Resources for Special Education. (http://special.ed.miningco.com) This site provides links to a variety of topics, including teaching resources for regular and special
education teachers; Web sites for students to visit; disability information, resources, and research; disability laws; special education laws; e-mail ideas; mailing lists and use net information; assistive technology; clearinghouses; and Internet search engines and help topics.

**U.S. Department of Education.** (http://www.ed.gov/) This site contains links to the U.S. government's education databases (including ERIC). It also makes available full-text reports on current findings on education. In addition, it provides links to research offices and organizations, as well as research publications and products. The Department of Education has published a book titled *The Researcher's Guide to the Department of Education*, which helps researchers access the various resources that the department has to offer.


**Psych Web.** (http://www.psychology.net/) This site provides psychological information for students and teachers of psychology. Resources and links available include full-length books online, online pamphlets, discussion groups, university psychology departments on the Web, psychology journals on the Web, APA style resources, and other scholarly resources.

**Using a Search Engine to Find Information Sources**

It is entirely possible that you will want to access information on the World Wide Web that is not available in the Web addresses just given. The easiest, quickest way to find interesting new sites is to use a search engine to look for Web pages containing keywords that you enter. **Search engines** are sites that allow you to search large portions of the Internet for specific information. Examples of search engines include Google, Yahoo!, Lycos, Excite, and Alta Vista. Once you have entered a keyword or keywords in the appropriate place on the search engine's home page, the search engine examines a selected large portion of the Internet (or a specific domain of the Internet, if you say so) for sites that contain your keyword(s).

To facilitate your search, most search engines offer you the option of narrowing your search so that only the most relevant sites are identified. An example using Yahoo! is shown in Figure 2.5. Clicking on the subcategory "Education" in Figure 2.5a will significantly narrow your search to relevant sources in the field of education. After selecting the "Education" subcategory, a very useful page, shown in Figure 2.5b, appears. Clicking on a subtopic such as "Early Childhood Education" will then take you to another Web page that provides links to numerous sites pertaining to your topic. Clicking on any of the links shown in Figure 2.5c will access all of the information that those particular sites have to offer.

**Evaluating Your Sources**

Once you have a source in hand, you will need to evaluate it. Obviously, the first thing to do is to determine if it really applies to your research topic. If it does, you then need to evaluate the quality of the information. For example, does the information come from a scholarly journal or a popular magazine? Is the information someone's personal opinion or the result of a research study? Clearly, sources of different types merit different weight in your review.

An initial appraisal of a source includes looking closely at the date of publication and where the source was found. Look at the copyright date of books that you find and the dates on which articles were published. Appropriate research in topic areas of current interest and continuing development generally require recent, up-to-date references.
Next, identify where the source was found. For instance, did you find your source in a refereed or a nonrefereed journal? Research articles in refereed journals are required to comply with strict guidelines, not only in terms of format, but also in research procedures. Articles in refereed journals are reviewed by a panel of experts and thus tend to be more "trustworthy" than articles from nonrefereed or popular journals. The distinction between sources that are scholarly, versus those that are popular, is an important one.

It is also important to verify that the information presented in a particular source is objective and impartial. Does the author present evidence to support the interpretations made? Does the content of the article consist mainly of an individual's opinion or does it contain appropriately collected and analyzed data? Finally, does the source add to the information you

(a) Search options in opening screen; (b) search topics in Education category; (c) links in Early Childhood Education.

FIGURE 2.5 Sample search using Yahoo!
Copyright © 2002 Yahoo! Inc. All rights reserved.
have already gathered about your topic? If the source adds to your growing knowledge of your topic, it is useful and worth paying attention to.

Special care and caution must be taken when evaluating World Wide Web sources, because anyone can post information on the Web. Thus, just because an Internet search identifies a particular source does not mean that the source is accurate or credible. Sources from the World Wide Web must be closely examined for bias, subjectivity, intent, and accuracy.

Conducting effective library and Internet searches will yield an abundance of useful information about your topic. By combining the two, you will collect information that is both up to date and comprehensive. As time goes on and you become more experienced, you will be able from the beginning to conduct more efficient searches that are focused appropriately on your topic.

ABSTRACTING

After you have identified the primary references related to your topic using the appropriate resources, you are ready to move on to the next phase of a review of related literature—abstracting the references. Basically, this involves locating, reviewing, summarizing, and classifying your references. Students sometimes ask why it is necessary to read and abstract original, complete articles (or reports, or whatever) if they already have perfectly good abstracts. There are two basic reasons. First, abstracts are not necessarily "perfectly good." They may not be totally accurate interpretations or summaries of the articles' contents. And, second, there is a great deal of important information that you can only obtain by reading the complete article. (You'll see.)

Arrange the references you identified in each source in reverse chronological order (starting with the most recent). The abstracting process will be conducted in the same order. The main advantage of beginning with the latest references on a given topic is that in terms of research strategy, the most recent research is likely to have profited from previous research. Also, recent references may contain references to preceding studies you may not have identified. For each reference, we suggest the following procedure for abstracting:

1. If the article has an abstract or a summary, which most do, read it to determine the article's relevancy to your problem.
2. Skim the entire article, making mental notes of the main points of the study.
3. On an index card or in a computer database write the complete bibliographic reference, including the library call number if it is a book. This is tedious but important. You will spend much more time trying to find the full citation of a reference you failed to abstract completely than you will abstracting it in the first place. If you know that your final report must follow a particular style, put your bibliographic reference in that form. For example, a journal article using the American Psychological Association (APA) format would look like this:


In this example, 1995 refers to the date of publication, 11 to the volume, and 1–99 to the page numbers. The use of a style manual such as the APAs provides you with formats needed when citing different types of sources. If this reference is cited in the body of a paper (perhaps written by Goforth concerning the need for increased funding for useless research), its description would be followed by (Snurd, 1995). The bibliography provides the full citation. If, however, the citation is a direct quote, the appropriate page number must be included, e.g., (Snurd, 1995, p. 45). Whatever format you use, use it consistently, and be certain the reference you copy is accurate. You
never know when you might have to go back and get additional information from an article.

4. Classify and code the article according to some system and add it to the database entry or place it on the index card (or a photocopy) in a conspicuous place, such as the upper right- or left-hand corner. Create a code that can be easily accessed when you want to sort your notes into the categories you devise. Any coding system that makes sense to you will facilitate your task later when you have to sort, organize, analyze, synthesize, and write your review of the literature. Coding and keeping track of articles is key for organization. Useful computer programs that simplify coding and subsequent data retrieval are HyperRESEARCH\(^1\) and EndNote.\(^2\)

5. Abstract, or summarize, the reference. As neatly as you can (you’re going to have to read them later), write the essential points of the reference. If it is an opinion article, write the main points of the author’s position—for example, “Jones believes parent volunteers should be used because…” and list the reasons. If it is a study, state the problem, the procedures (including the sample and instruments), and the major conclusions. Make special note of any particularly interesting or unique aspect of the study, such as a new measuring instrument that was utilized. Double check the reference to make sure you have not omitted any pertinent information. If the abstract provided at the beginning of the article contains all the essential information (and that is a big if), by all means use it.

6. Indicate any thoughts that come to your mind, such as points on which you disagree (mark them with an X, for example) or components that you do not understand (put a ? next to them). For example, if an author stated that he or she had used a double-blind procedure, and you were unfamiliar with that technique, put a question mark in the margin next to that statement, either on your index card or on a photocopy of the page. Later, you can find out what it is.

7. Indicate any statements that are direct quotations or personal reactions. Plagiarism (intentional or not) is an absolute no-no, with the direst of consequences. If you do not put quotation marks around direct quotations on your card or computer, for example, you might not remember later which statements are, and which are not, direct quotations. Also, record the exact page number of the quotation in case you use the quotation later in your paper. Incidentally, direct quotations should be kept to a minimum in your research plan and report; both should be in your words, not other researchers’. Occasionally, however, a direct quotation may be quite appropriate and useful. Be sure, however, that you record all reference information required in your style manual. (You may choose to photocopy citations you plan to cite, but the main disadvantage of this is cost.)

Whatever approach you use, guard your notes with your life. Make a copy and put it somewhere in a safe place. When you have completed your reviewing task, those notes will represent many hours of work. Students have been known to be literally in tears because they lost their notes “on the bus” or “in a table in the cafeteria.” Beyond being sympathetic, your instructor can do little more than to tell you to start over (ouch!). Also, when the research report is completed, the cards or computer information can be filed (photocopies can be placed in notebooks), and saved for future reference and future studies (nobody can do just one!).

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\(^1\)ResearchWare, Inc. (2002). HyperRESEARCH 2.5. Randolph, MA.

ANALYZING, ORGANIZING, AND REPORTING THE LITERATURE

For beginning researchers, the hardest part of writing the literature review is thinking about how hard it is going to be to write the literature review. More time is spent worrying about doing it than actually doing it. Part of the reason for this hesitancy is lack of previous experience writing a literature review and part is the fact that this is different from ordinary writing. A literature review is a technical form of writing that calls for different characteristics than most of the writing we normally do. In technical writing, facts must be documented and opinions must be substantiated. For example, if you say that the high school dropout percentage in Ohio has increased in the last 10 years, you must provide a source for this information. Technical writing is precise, requiring clarity of definitions and consistency in the use of terms. If the term achievement is important in your review, you must indicate what you mean by it and be consistent in using that meaning throughout the review. Figure 2.6 identifies important characteristics of technical writing used in a literature review.

If you have efficiently abstracted the literature related to your problem, and if you approach the task in an equally systematic manner, then analyzing, organizing, and reporting it will be relatively painless. First, to get warmed up, read quickly through your notes. This will refresh your memory and help you identify references that no longer seem sufficiently related to keep. Do not force references into your review that do not really fit; the review forms the background and rationale for your hypothesis and should contain only references that serve this purpose. The following guidelines and suggestions are based on experience acquired the hard way and should be helpful to you:

1. Make an outline. Don’t groan; your eighth-grade teacher was right about the virtues of an outline. However you do it, the time and thought you put into the outline will save you time in the long run and will increase your probability of having an organized review. The outline does not have to be excessively detailed. First, identify the main topics and the order in which they should be presented. For example, the outline of the review for the problem concerned with the effectiveness of salaried paraprofessionals versus parent volunteers might begin with the headings Literature on Salaried Paraprofessionals, Literature on Parent Volunteers, and Literature Comparing the Two. Note that you can always add or remove topics in the outline as your work progresses. The next step is to differentiate each major heading into logical subheadings. In our outline for this chapter, for example, the section Review of Related Literature was subdivided into the following:

REVIEW OF RELATED LITERATURE
Definition, Purpose, and Scope
Getting Started
Identifying Keywords
Identifying Your Sources
Evaluating Your Sources
Abstracting
Analyzing, Organizing, and Reporting

The need for further differentiation will be determined by your topic and the literature you have reviewed; the more complex these are, the more subheadings you will require. When you have completed your outline you will invariably need to rearrange, add, and delete items. It is much easier, however, to reorganize an outline than it is to reorganize a document written in paragraph form.

2. Analyze each reference in terms of your outline; in other words, determine under which subheading each fits. Recognize that some references may fit in more than one subheading. Then sort your references into appropriate piles. If you end up with references with-