

PART 9

Research Writing

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Planning a Research Project

If you've ever watched a TV or movie detective pursue a culprit, you know that research can be exciting. When an investigator has a goal in sight, the seemingly mundane work of digging

through files, interviewing witnesses, and piecing together clues becomes a concentrated and enthusiastic search.

This same excitement can be yours as you conduct research in school. Honest and inquisitive research writing does demand close attention to details, but the work will not be tedious if you see the details as steadily contributing to discoveries about yourself and the world around you. As you consider what others have to say about your subject and build on that to create new knowledge, you will become an expert in your own right. You will have a significant, in-depth understanding of a subject you care about, and you will communicate that understanding to others.

Through research writing, you will also learn skills that will help you in school, in work, and in life:

- v **Using the library and the Internet for research**, carefully re-cording information on where you find sources.
- v **Analyzing and evaluating others' work.**
- v **Drawing on others' work** to form, support, and extend your own opinions.
- v **Practicing intellectual integrity** by presenting others' work accurately and acknowledging your sources fully.

Your investigation will be influenced by whether you are expected mainly to report, to interpret, or to analyze sources.

- v In **reporting**, you survey, organize, and objectively present the available evidence about a topic.
- v In **interpreting**, you examine a range of views on a topic in order to answer a question with your own conclusions.
- v In **analyzing**, you attempt to solve a problem or answer a question through critical thinking about texts such as scholarly or literary works. (In this context, *analysis* stands for the entire process of critical reading and writing. See pp. 150–63.)

Throughout Chapters 42–46, we will follow the development of research papers by two students, Edward Begay and Vanessa Haley. Begay's work, emphasizing interpretation, receives somewhat more attention; Haley's work, emphasizing analysis, enters the discussion whenever her process differed significantly from Begay's. Both students' final papers appear in Chapter 48.

42a Starting out

With its diverse and overlapping activities, research writing demands more planning than other kinds of writing. A thoughtful plan and systematic procedures will help you anticipate your needs, schedule your time, and complete the work successfully.

1 Preparing a schedule

As soon as you receive an assignment for a research project, you can begin developing a strategy for completing it. The first step should be making a schedule that apportions the available time to the necessary work. A possible schedule appears on the next page. In it the research-writing process corresponds to the general writing process discussed in Chapters 1–3: planning or developing (steps 1–9), drafting (step 10), and revising and editing (step 11), plus the additional important stage of documenting the sources you use (steps 12–13).

2 Keeping a research journal

To keep track of your activities and ideas during research, maintain a research journal throughout the process. (See pp. 17 and 154 on journal keeping.) Make your journal portable so that you can carry it with you conveniently. Many researchers use paper notebooks or handheld or notebook computers. Some schools offer students Web log space for recording research and other learning activities.

In the research journal's dated entries, you can keep a record of sources you consult, the leads you want to pursue, any dead ends you reach, and, most important, your thoughts about sources, leads, dead ends, new directions, relationships, and anything else that strikes you. You will probably find that the very act of writing in your journal opens your mind and clarifies your thinking, making your research increasingly productive and rewarding.

Note The research journal is the place to track and develop your own ideas. To avoid mixing up your thoughts and those of others, keep separate notes on what your sources actually say, using one of the methods discussed on pages 615–17.

42b Finding a researchable subject and question

Before reading this section, review the suggestions given on pages 6–9 for finding and limiting an essay subject. Generally, the same procedure applies to writing any kind of research paper: begin with an assigned subject or one that interests you (perhaps one you’ve already written about without benefit of research), and then narrow the subject to manageable size by asking questions about it. However, selecting and limiting a subject for a research paper can present special opportunities and problems.

1 Choosing an appropriate subject

A subject for a research paper has four primary requirements, each with corresponding pitfalls:

1. **Ample sources of information are available on the subject.** Other researchers should have had a chance to produce evidence on the subject, weigh the evidence, and publish their conclusions. And the sources should be accessible.

Avoid very recent subjects, such as a new medical discovery or a breaking story in today’s newspaper.

2. **The subject encourages research in the kinds and number of sources required by the assignment.**

Avoid (a) subjects that depend entirely on personal opinion and experience, such as the virtues of your hobby; and (b) subjects that require research in only one source, such as a straight factual biography or a how-to like “Making Lenses for Eyeglasses.” (An exception to *b* is a paper in which you analyze a single work such as a novel or painting.)

3. **The subject will lead you to an assessment of sources and to defensible conclusions.** Even when a research paper is intended to persuade, the success of the argument will depend on the balanced presentation of all significant points of view.

Avoid controversial subjects that rest entirely on belief or prejudice, such as when human life begins or why women (or men) are superior. Though these subjects may certainly be disputed, your own preconceptions could slant your research or conclusions. Further, your readers are unlikely to be swayed from their own beliefs.

4. **The subject suits the length of paper assigned and the time given for research and writing.**

Avoid broad subjects that have too many sources to survey adequately, such as a major event in history or the collected works of a poet.

2 Posing a research question

Asking a question about your subject can give direction to your research by focusing your thinking on a particular approach. You can even begin asking questions before you find your specific subject, as a way of opening avenues you may not have considered.

The students Edward Begay and Vanessa Haley arrived at their research questions by slightly different paths. For a composition course, Begay’s instructor assigned an interpretation with a persuasive purpose but left the selection of subject to the student. Begay had recently read several newspaper articles on a subject that intrigued him: how computers will alter the future. Taking this broad subject as his starting point, he used clustering (see p. 22) to pursue some ideas. While generating the cluster diagram on the facing page, Begay found himself giving the most thought to the Internet. He posed questions until a cluster about access to the Internet led him to a question that seemed interesting and significant: *Will the poor be excluded from the Internet?*

In developing a topic and question for an analysis paper assigned in a composition course, Vanessa Haley followed a somewhat different procedure. Instead of starting with a general subject, as Begay did, Haley began by looking for an unresolved question, an interesting problem, or a disagreement among the experts in some field of study. She had recently been reading an anthology of writings on the environment, and she had been disturbed by how many naturalists and environmentalists view human beings not as part of “nature” but as something separate from it, usually as its destroyer. In her journal, Haley wrote this entry:

Many writers see nature as a place for humans to retreat to, or a wonderful thing that humans are ruining. Humans aren’t considered natural themselves—human civilization isn’t considered natural. Human civ. is “anti-natural.” Isn’t such a separation unrealistic and damaging? We *are* natural. We’re here to stay, and we’re not going back to the Stone Age, so we’d better focus on the connections between “us” and “it”

(nature) rather than just the differences. Dillard seems to do this—seems to connect human and natural worlds. People are neither better nor worse than nature but just bound up in it. “Nature is as careless as it is bountiful, and . . . with that extravagance goes a crushing waste that will one day include our own cheap lives” (“Fecundity”).

At the end of this entry, Haley refers to and quotes the writer Annie Dillard, one of the authors represented in the anthology. Haley decided to explore Dillard’s views further by reading and analyzing more of her work. Haley’s opening question for investigation, then, was *How does Annie Dillard see the place of humanity in nature?*

EXERCISE 42.1 Finding a topic and question

Choose three of the following subjects (or three subjects of your own), and narrow each one to at least one subject and question suitable for beginning work on a research paper. (This exercise can be the first step in a research-writing project that continues through Chapters 42–46.)

1. Bilingual education
2. National security and civil rights
3. Distribution of music by conventional versus electronic means
4. Dance in America
5. The history of women’s suffrage
6. Genetically modified foods
7. Immigrants in the United States
8. Space exploration
9. Business espionage
10. The effect of television on professional sports
11. Child abuse
12. African Americans and civil rights
13. Successes in cancer research
14. Computer piracy
15. The European exploration of North America before Columbus
16. Hazardous substances in the workplace
17. Television evangelism
18. Science fiction
19. Treatment or prevention of AIDS in the United States or Africa
20. Water pollution
21. Women writers
22. Campaign financing
23. Comic film actors
24. An unsolved crime
25. Alternative fuels
26. Male and female heroes in modern fiction
27. Computers and the privacy of the individual
28. Gothic or romance novels in the nineteenth and twenty-first centuries
29. The social responsibility of business
30. Stem-cell research

42c Developing a research strategy

Before you start looking for sources, consider what you already know about your subject and where you are likely to find information on it.

1 Tapping into your own knowledge

Discovering what you already know about your subject will guide you in discovering what you don’t know. Take some time to spell out facts you have learned, opinions you have heard or read elsewhere, and of course your own opinions. Use one of the discovery techniques discussed in Chapter 2 to explore and develop your ideas: keeping a journal, observing your surroundings, freewriting, list making, clustering, asking the journalist’s questions, using the patterns of development, or thinking critically.

When you've explored your thoughts, make a list of questions for which you don't have answers, whether factual (*What is the distribution of computers among affluent and poor schools?*) or more open-ended (*Are computers a positive force in education?*). These questions will give you clues about the sources you need to look for first.

2 Setting goals for sources

For many research projects, you'll want to consult a mix of sources, as described on the following pages. You may start by seeking the outlines of your topic—the range and depth of opinions about it—in reference works and articles in popular periodicals or through a Web search. Then, as you refine your views and your research question, you'll move on to more specialized sources, such as scholarly books and periodicals and your own interviews or surveys. (See pp. 575–97 for more on each kind of source.)

v Library and Internet sources

The print and electronic sources available through your library—mainly reference works, periodicals, and books—have two big advantages over most of what you'll find on the Internet: they are cataloged and indexed for easy retrieval; and they are generally reliable, having been screened first by their publishers and then by the library's staff. In contrast, the Internet's retrieval systems are more difficult to use effectively, and Internet sources tend to be less reliable because most do not pass through any screening before being posted. (There are many exceptions, such as online scholarly journals and reference works. But these sources are generally available through your library's Web site as well.)

Most instructors expect research writers to consult sources found in and through the library, including print sources. But most will accept Internet sources, too, if you have used them judiciously. Even with its disadvantages, the Internet can be a valuable resource for primary sources, current information, and a diversity of views. For guidelines on evaluating both library and Internet sources, see pages 599–609.

v Primary and secondary sources

As much as possible, you should rely on **primary sources**, or firsthand accounts: historical documents (letters, speeches, and so on), eyewitness reports, works of literature, reports on experiments or surveys conducted by the writer, or your own interviews, experiments, observations, or correspondence.

In contrast, **secondary sources** report and analyze information drawn from other sources (often primary ones): a reporter's summary of a controversial issue, a historian's account of a battle, a critic's reading of a poem, a physicist's evaluation of several studies. Secondary sources may contain helpful summaries and interpretations that direct, support, and extend your own thinking. However, most research-writing assignments expect your ideas to go beyond those in such sources.

v Scholarly and popular sources

The scholarship of acknowledged experts is essential for depth, authority, and specificity. Most instructors expect you to emphasize scholarly sources in your research. But the general-interest views and information of popular sources can help you apply more scholarly approaches to daily life.

- v **Check the title.** Is it technical, or does it use a general vocabulary?
- v **Check the publisher.** Is it a scholarly journal (such as *Education Forum*) or a publisher of scholarly books (such as Harvard University Press), or is it a popular magazine (such as *Time* or *Newsweek*) or a publisher of popular books (such as Random House)?
- v **Check the length of periodical articles.** Scholarly articles are generally much longer than magazine and newspaper articles.
- v **Check the author.** Have you seen the name elsewhere, which might suggest that the author is an expert?
- v **Check the electronic address.** Addresses, or URLs, for Internet sources often include an abbreviation that tells you something about the origin of the source: *edu* means the source comes from an educational institution, *gov* from a government body, *org* from a nonprofit organization, *com* from a commercial organization such as a corporation. The abbreviation is not a firm guide to the kind of source—*edu* sites, for instance, may include student papers and

Web logs as well as works by scholars—but it can indicate the context. (See pp. 592–93 for more on types of online sources.)

▼ **Older and newer sources**

- ▼ **Check the publication date.** For most subjects a combination of older, established sources (such as books) and current sources (such as newspaper articles, interviews, or Web sites) will provide both background and up-to-date information. Only historical subjects or very current subjects like Edward Begay's (the Internet) require an emphasis on one extreme or another.

▼ **Impartial and biased sources**

Seek a range of viewpoints. Sources that attempt to be impartial can offer trustworthy facts and an overview of your subject. Sources with clear biases can offer a diversity of opinion. Of course, to discover bias, you may have to read the source carefully (see p. 601); but even a bibliographical listing can be informative.

- ▼ **Check the title.** It may reveal something about point of view. (Consider these contrasting titles uncovered by Edward Begay: "Computer Literacy and Ideology" versus "The Process of Introducing Internet-Based Classroom Projects and the Role of School Librarians.")
- ▼ **Check the author.** You may have heard of the author before as a respected researcher (thus more likely to be objective) or as a leading proponent of a certain view (less likely to be objective).

Note Internet sources must be approached with particular care. See pages 602–09.

▼ **Sources with helpful features**

Depending on your topic and how far along your research is, you may want to look for sources with features such as illustrations (which can clarify important concepts), bibliographies (which can direct you to other sources), and indexes (which can help you develop keywords for electronic searches; see pp. 573–75).

EXERCISE 42.2 DEVELOPING A RESEARCH STRATEGY

Following the suggestions on page 564, write what you already know about the topic you selected in Exercise 42.1 (pp. 563–64), and then frame some questions for which you'll need to find answers. Also in writing, consider the kinds of sources you'll probably need to consult, using the categories given on the preceding pages.

42d Making a working, annotated bibliography

When you begin searching for sources, it may be tempting to pursue each possibility as you come across it. But that approach would prove inefficient and probably ineffective. Instead, you'll want to find out the *full range* of sources available—from scholarly and popular articles to books and Web sites—and then decide on a good number to consult. For a paper of 1800 to 2500 words, try for ten to thirty promising titles as a start.

To keep track of where sources are, compile a **working bibliography**, as you uncover possibilities. Record the information for a source as soon as you think you may want to use it, following the guidelines on pages 568–69. Then you'll be able to find the source when you're ready to consult it, and you'll have the information needed to cite the source in your paper.

Many instructors ask student to prepare an annotated bibliography that records not only *where* sources are but also *what* they are. Suggestions for compiling an annotated bibliography appear on pages 570 and 600.

1 Tracking source information

You have several options for making a working bibliography:

- ▼ **Copy source information by hand on note cards** (usually 3" x 5"), one source to a card. With this system, you can record source information no matter where you are, as long as you have a pen or pencil, and you can easily add, delete, and rearrange sources. Some instructors require that a working bibliography be submitted on note cards.
- ▼ **Create the working bibliography on your word processor or handheld computer**, either typing the information yourself or downloading it from online indexes, catalogs, and other sources. You'll be able to sort

sources by subject or by author and to copy bibliographic data into your paper when you prepare final source citations.

- ▼ **Combine the two systems:** print and cut up computer-generated source listings, and then paste or tape each source on a note card.

Whatever system you use, be sure to record all the information you will need. A downloaded listing, for instance, may look complete but lack the name of the database and other crucial information.

The two records below come from Edward Begay's working bibliography. The first, for a book, Begay handwrote on a note card. The second, for a magazine article, Begay downloaded from a subscription service, printed out, and then annotated with information he knew he would need.

2 Recording source information

When you turn in your paper, you will be expected to attach a list of the sources you have used. So that readers can check or follow up on your sources, your list must include all the information needed to find the sources, in a format readers can understand. The box below shows the information you should record for each type of source so that you will not have to retrace your steps later. See later pages for illustrations of how to locate this information for books (660), journal articles (667), newspaper articles (669), Web sites (675), and sources you find through subscription databases (672).

Note Whenever possible, record source information in the correct format for the documentation style you will be using. Then you will be less likely to omit needed information or to confuse dates, numbers, and other data when it's time to write your citations. This book describes four styles: MLA (p. 647), Chicago (p. 764), APA (p. 784), and CSE (p. 812). For others, consult one of the guides listed on pages 784 and 812. (Begay's first card on p. 568 follows MLA style.) See also page 638 for tips on using bibliography software to format source information.

3 Annotating your bibliography

Annotating a working bibliography converts a simple list into a tool for assessing sources. When you discover a possible source, record not only its publication information but also the following:

- ▼ **What you know about the source's content.** Periodical databases and book catalogs generally include abstracts or summaries of sources that can help you with this part of the annotation.
- ▼ **How you think the source may be helpful in your research.** Does it offer expert opinion, statistics, an important example, or a range of views? Does it place your subject in a historical, social, or economic context?

Taking time to prepare thorough annotations can help you discover gaps that may remain in your sources and will later help you decide which sources to pursue in depth. Edward Begay annotated a bibliography entry on his computer with a summary and a note on the source features he thought would be most useful to him:

As you become more familiar with your sources, you can use your initial annotated bibliography to record your evaluation of them and more detailed thoughts on how they fit into your research. See page 600 on this later stage.

EXERCISE 42.3 Compiling an annotated working bibliography

Prepare an annotated working bibliography of at least ten sources for a research paper on one of the following people or on someone of your own choosing. Begin by limiting the subject to a manageable size, posing a question about a particular characteristic or achievement of the person. Then consult reference works, periodical indexes, the library's book catalog, and the Web. (See pp. 575–91 for more on these resources.) For each source, record complete publication information as well as a summary and a note on the source's potential use.

1. Steven Jobs (a founder of Apple Computer), or another business entrepreneur
2. Ruth Bader Ginsburg, or another Supreme Court justice
3. Emily Dickinson, or another writer
4. Shaquille O'Neal, or another sports figure
5. Isamu Noguchi, or another artist

<http://www.ablongman.com/littlebrown>

Visit the companion Web site for more help and an additional exercise on planning a research project.

Starting out

Planning a research project

Scheduling steps in research writing

(See the pages in parentheses for discussion of the steps.)

Complete

by:

1. Setting a schedule and beginning a research journal (previous page)
2. Finding a researchable subject and question (below)
3. Developing a research strategy (p. 564)
4. Finding sources, both print and electronic (p. 571), and making a working bibliography (p. 567)
5. Evaluating and synthesizing sources (pp. 599, 610)
6. Mining and interacting with sources (p. 613), often using summary, paraphrase, and direct quotation (p. 617)
7. Taking steps to avoid plagiarism (p. 629)
8. Developing a thesis statement (p. 639)
9. Creating a structure (p. 640)
10. Drafting the paper (p. 643), integrating summaries, paraphrases, and direct quotations into your ideas (p. 623)
11. Revising and editing the paper (p. 645)
12. Citing sources in your text (p. 637)
13. Preparing the list of works cited (p. 637)
14. Preparing and proofreading the final manuscript (p. 646)

Final paper due

Each segment marked off by a horizontal line will occupy *roughly* one-fourth of the total time. The most unpredictable segments are the first two, so get started early enough to accommodate the unexpected.

You can download this schedule from ablongman.com/littlebrown. Use a duplicate to plan and time the specific steps of each research project you work on.

Finding a subject and question

Checklist for a good research subject

1. **Published sources are ample:** the subject is not so recent that other re-searchers will still be discovering it.
2. **Sources are diverse:** the subject is neither wholly personal nor wholly factual.
3. **Sources can be assessed objectively:** the subject is not solely a matter of belief or prejudice.
4. **Sources can be examined thoroughly** in the assigned time and length: the subject is not too broad.

Planning a research project

Clustering for a research question

Finding a subject and question

Planning a research project

Developing a research strategy

Planning a research project

Making a working, annotated bibliography

Planning a research project

Basic entries for a working bibliography

Making a working, annotated bibliography

Information for a working bibliography

For books

Library call number

Name(s) of author(s), editor(s), translator(s), or others listed
Title and subtitle
Publication data:
 Place of publication
 Publisher's name
 Date of publication
Other important data, such as
 edition or volume number

For periodical articles

Name(s) of author(s)
Title and subtitle of article
Title of periodical
Publication data:
 Volume number and issue number (if any) in which
 article appears
 Date of issue
 Page numbers on which
 article appears

For electronic sources

Name(s) of author(s)
Title and subtitle
Publication data for books and articles (see above)
Date of release, online posting,
 or latest revision

You can download these lists from ablongman.com/littlebrown. Copy the appropriate list for each source you're using, and fill in the required in-formation.

Medium (online, CD-ROM, etc.)
 Format of online source (Web site, Web page, e-mail, etc.)
 Date you consulted the source
 Complete URL (unless source was obtained through a subscription service and has no usable address)
 For source obtained through a subscription service:
 Name of database
 Name of service
 Electronic address of the service home page *or* search terms used to reach the source

For other sources

Name(s) of author(s), creator(s), or others listed, such as a government department, recording artist, or photographer
 Title of work
 Format, such as unpublished letter, live performance, or photograph
 Publication or production data:
 Publication title
 Publisher's or producer's name
 Date of publication, release, or production
 Identifying numbers (if any)

Planning a research project

Entry for an annotated working bibliography

Publication and access information for source
 United States. Dept. of Education. National Center for Education Statistics.
 Internet Access in US Public Schools and Classrooms. 24 Feb. 2005. 12 Mar.
 2005 <<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2005015>>.

Report on the annual NCES survey of the quantity and quality of technology used in K-12 classrooms. Includes important statistics on trends—student-to-computer ratios, teacher training, computer availability to students in different socio-economic brackets.

Summary of source

Ideas on use of source

Searching electronically

CHAPTER 4 3

Finding Sources

Once you have discovered a research subject and question, have developed a research strategy, and know how to make an annotated working bibliography, you're ready to find sources. This chapter discusses electronic searches and the kinds of sources, both print and electronic, that are available to you.

Note If you require sources that are not available from your own library, you may be able to obtain them from another library by mail, fax, or computer. Ask your librarian for help, and plan ahead: interlibrary loans can take a week or longer.

43a Searching electronically

1 Beginning with your library's Web site

As you conduct research, the World Wide Web will be your gateway to ideas and information. Always start with the Web site of your library, not with a public search engine such as *Google*. (*Google Scholar*, a new tool that searches for scholarly articles, is discussed on p. 583.) The library's site will lead you to vast resources, including books, periodical articles, and reference works. More important, every source you find on the library's site will have passed through filters to ensure its value. A scholarly journal article, for instance, undergoes at least three successive reviews: first, subject-matter experts deem it worth publishing in the journal; next, a database

vendor deems the journal worth including in the database; and finally, your school's librarians deem the database worth subscribing to.

Google and other search engines may seem more user-friendly than the library's Web site and may seem to return plenty of sources for you to work with. Many of the sources may indeed be reliable and relevant to your research, but many more will not be. In the end, a library Web search will be more efficient and more effective than a direct Web search. (For help with evaluating sources from any resource, see pp. 599–609.)

Note Start with your library's Web site, but don't stop there. Many books, periodicals, and other excellent sources are available only on library shelves, not online, and most instructors expect research papers to be built to some extent on these resources. When you spot promising print sources while browsing a library's online databases, make records of them and then look them up at the library. You can also browse the bookshelves to discover sources (see p. 580).

2 Anticipating the kinds of electronic sources

Your school's library and the Web offer several kinds of electronic resources that are suitable for academic research. For more on searching these resources, see pages 575–92.

- v **The library's catalog of holdings** is a database that lists all the resources that the library owns or subscribes to: books, journals, magazines, newspapers, reference works, and more. The catalog may also include the holdings of other school libraries nearby or in your state.
- v **Online databases** include indexes, bibliographies, and other reference works. They are your main route to articles in periodicals, providing publication information, summaries, and often full text (see below). Your library subscribes to the databases and makes them available through its Web site. (You may also discover databases directly on the Web, but, again, the library is the more productive starting place.)
- v **Databases on CD-ROM** include the same information as online databases, but they must be read at a library computer terminal. Increasingly, libraries are providing CD-ROM databases through their Web sites or are moving away from CD-ROMs in favor of online databases.
- v **Full-text resources** contain the entire contents of articles, book chapters, even whole books. The library's databases provide access to the full text of many listed sources. In addition, many Web sites, such as those for government agencies, offer the full text of articles, reports, and other publications.

3 Using keywords

Once you determine what resources are available, you should plan your search. Careful planning is essential: a too-casual search can miss helpful sources while returning hundreds, even thousands, of irrelevant sources.

Probably the most important element in planning a search is to develop **keywords**, or **descriptors**, that name your subject for databases and Web search engines.

v Databases vs. the Web

To develop keywords it helps to understand an important difference in how library databases and the open Web work:

- v **A database indexes sources by authors, titles, publication years, and its own subject headings.** The subject headings reflect the database's directory of terms and are assigned by people who have read the sources. You can find these subject headings by using your own keywords until you locate a promising source. The information for the source will list the headings under which the database indexes it and other sources like it. (See p. 585 for an illustration.) You can then use those headings for further searches.
- v **A Web search engine seeks your keywords in the titles and texts of sites.** The process is entirely electronic, so the results from a search engine depend on how well your keywords describe your subject and anticipate the words used in sources. If you describe your subject too broadly or describe it specifically but don't match the vocabulary in relevant sources, your search will turn up few relevant sources and probably many that aren't relevant.

v Keyword refinement

Every database and search engine provides a system that you can use to refine your keywords for a productive search. The basic operations appear in the box below, but resources do differ. For instance, some assume that *AND* should link two or more keywords, while others provide options

specifying “Must contain all the words,” “May contain any of the words,” and other equivalents for the operations in the box. You can learn a search engine’s system by consulting its Advanced Search page.

▼ **Trial and error**

You will probably have to use trial and error in developing your keywords. Because different databases have different directories and many search tools have no directory at all, you should count on occasionally running dry (turning up few or no sources) or hitting uncontrollable gushers (turning up hundreds or thousands of mostly irrelevant sources). But the process is not busywork—far from it. Besides leading you eventually to worthwhile sources, it can also teach you a great deal about your subject: how you can or should narrow it, how it is and is not described by others, what others consider interesting or debatable about it, and what the major arguments are.

43b Finding reference works

Reference works, often available online or on CD-ROM, include encyclopedias, dictionaries, digests, bibliographies, indexes, atlases, and handbooks. Your research *must* go beyond reference works; indeed, many instructors discourage students from relying on such sources for ideas and information in final papers. But reference works can help you get started:

- ▼ **They can help you decide whether your subject interests you and meets the requirements for a research paper** (p. 561).
- ▼ **They can direct you to more detailed sources on your subject.**
- ▼ **They can help you refine keywords for electronic searches**, giving you the terminology of the field you’re researching.
- ▼ **They can identify the main debates in a field and the proponents of each side.**

Edward Begay’s use of reference works illustrates how helpful such sources can be as a starting point, even for a topic as current as the Internet. Begay first consulted *Bibliographic Guide to the History of Computing, Computers, and the Information Processing Industry* (to get some background on computers and the Internet) and *Encyclopedia of Sociology* (to explore the concept of equality in education).

The following lists give the types of reference works. Ask a reference librarian if you’re unsure of where to start. The librarian can also advise you which sources are available through the library’s Web site, in print or on CD-ROM at the library, or directly via the Web.

▼ **General encyclopedias**

General encyclopedias give brief overviews and bibliographies. Covering all fields, they are convenient but very limited.

Academic American Encyclopedia
Collier’s Encyclopedia
The Columbia Encyclopedia
Encyclopedia Americana
Encyclopaedia Britannica
Encyclopedia International
Random House Encyclopedia

▼ **Specialized encyclopedias, dictionaries, bibliographies**

A specialized encyclopedia, dictionary, or bibliography generally covers a single field or subject. These works will give you more detailed and more technical information than a general reference work will, and many of them (especially bibliographies) will direct you to particular books and articles on your subject. For information on specialized reference works in various disciplines, consult lists elsewhere in this book:

▼ **Literature (p. 744)**

- v **Other humanities**, including history, the arts, philosophy, and religion (p. 761)
- v **Social sciences**, such as business and economics, criminal justice, education, and psychology (p. 781)
- v **Natural and applied sciences**, such as biology, engineering, mathematics, and physics (p. 810)

Two general references provide a wide range of information in many fields:

Essay and General Literature Index. Lists tens of thousands of articles and essays that appear in books (rather than periodicals) and that might not be listed elsewhere.

Oxford Reference Online. A compilation of general and specialized dictionaries, encyclopedias, and other sources.

v **Unabridged dictionaries and special dictionaries on language**

Unabridged dictionaries are more comprehensive than college or abridged dictionaries. Special dictionaries give authoritative information on aspects of language. (See Chapter 40 for more on the kinds of dictionaries and how to use them.)

Unabridged dictionaries

A Dictionary of American English on Historical Principles

The Oxford English Dictionary

Webster's Third New International Dictionary of the English Language

Special dictionaries

R. W. Burchfield, ed., *The New Fowler's Modern English Usage*

Frederic G. Cassidy et al., eds., *Dictionary of American Regional English*

Robert L. Chapman, ed., *Roget's International Thesaurus*

Bryan A. Garner, *A Dictionary of Modern American Usage*

J. E. Lighter, ed., *Historical Dictionary of American Slang*

Charles T. Onions et al., eds., *The Oxford Dictionary of English Etymology*

v **Biographical reference works**

If you want to learn about someone's life, achievements, credentials, or position, or if you want to learn the significance of a name you've come across, consult one of the reference works below.

American Men and Women of Science

Contemporary Authors

Current Biography

Dictionary of American Biography

Dictionary of American Negro Biography

Dictionary of Literary Biography

Dictionary of National Biography (British)

Dictionary of Scientific Biography

Marquis Who's Who (nearly twenty publications organized by geography, profession, and other categories)

Notable American Women

Webster's New Biographical Dictionary

World Authors

v **Atlases and gazetteers**

Atlases are bound collections of maps; gazetteers are geographical dictionaries.

Britannica Atlas

Cosmopolitan World Atlas

National Atlas of the United States of America

National Geographic Atlas of the World

Times Atlas of the World

Times Atlas of World History

Webster's New Geographical Dictionary

v Almanacs and yearbooks

Both almanacs and yearbooks are annual compilations of facts. Yearbooks record information about the previous year in a country, field, or other subject. Almanacs give facts about a variety of fields.

Americana Annual
Britannica Book of the Year
Facts on File Yearbook
Information Please Almanac
 US Bureau of the Census, *Statistical Abstract of the United States*
World Almanac and Book of Facts

43c Finding books

Books can provide background information, subject surveys, popular views of culture, statements of scholarly theory, research results—in short, a broad range of secondary and primary sources (see p. 565).

1 Using the library catalog

Your library's catalog is searchable at terminals in the library and via the library's Web site. With *WorldCat*, available through most libraries, you can also search for specific books in the catalogs of tens of thousands of libraries worldwide. You may be able to borrow books from another library in your area. Ask a librarian for assistance with remote searches and loans. And allow time for a book to be sent after your request.

All book catalogs contain similar information, though it may be organized differently from one library to the next. By far the most widely used format derives from the Library of Congress cataloging system and includes author, title, publisher, date of publication, description (number of pages, size, and other data), subject headings the book is listed under, and the library's call number (which directs you to the book's location in the stacks). See page 581 for a complete book record showing all this information.

2 Using a search strategy

Unless you seek a specific author or title, you'll want to find books with a subject or keyword search of the library's catalog. In a subject search, you start with headings found in *Library of Congress Subject Headings (LCSH)*, the massive directory under which the Library of Congress catalogs books. In a keyword search, you start with your own description of your subject as a way of locating appropriate *LCSH* headings.

The keyword approach is illustrated by part of Edward Begay's catalog search, shown below and on the next page. In his initial keyword search (screen 1), Begay used *Internet and access*. The search returned several books (screen 2), including a promising one titled *Social Consequences of Internet Use*. The complete record for this book (screen 3) showed that it was indexed under three *LCSH* subject headings: *Internet—Social aspects—United States*; *Digital divide —United States*; and *Telecommunication—Social aspects—United States*. Begay then used these headings to search the catalog further.

Note In addition to searching the book catalog, you can also browse the library shelves. The first part of the call number for a promising title (*HM851* in the full record opposite) will lead you to other books on the same subject that a catalog search might miss.

3 Using references to books

Two types of references can help you identify general books that have information about your topic:

- v **Publishing bibliographies** tell whether a book is still in print, whether a paperback edition is available, what books were published on a certain topic in a certain year, and so on:

Books in Print. Books indexed by author, title, and subject.
Cumulative Book Index

You might, for example, want to know if the author of an encyclopedia article has published any relevant books since the date of the encyclopedia. You could look up the author's name in the latest *Books in Print* to find out.

- v **Review indexes** list published reviews of books and can help you evaluate whether a book is relevant to your subject:

Book Review Digest. Summarizes and indexes reviews of books.
Book Review Index
Current Book Review Citations

For specialized review indexes, see pages 783 (social sciences) and 811 (natural and applied sciences).

43d Finding periodicals

Periodicals include newspapers, journals, and magazines. News-papers, the easiest to recognize, are useful for detailed accounts of past and current events. Journals and magazines can be harder to distinguish, but their differences are important. Most college instructors expect students' research to rely more on journals than on magazines.

Journals

Examples: *American Anthropologist*, *Journal of Black Studies*, *Journal of Chemical Education*

Available mainly through college and university libraries.

Articles are intended to advance knowledge in a particular field.

Writers and readers are specialists in the field.

Articles always include source citations.

Articles are usually long, ten pages or more

Appearance is bland, with black-only type, little or no decoration, and only illustrations that directly amplify the text, such as graphs.

Issues may appear quarterly or less often.

Issues may be paged separately (like a magazine) or may be paged sequentially throughout an annual volume, so that issue number 3 (the third issue of the year) could open on page 327. (The method of pagination affects source citations. See p. 666.)

Magazines

Examples: *The New Yorker*, *Time*, *Rolling Stone*, *People*

Available in public libraries, on newsstands, and in bookstores.

Articles are intended to express opinion, inform, or entertain.

Writers may or may not be specialists in their subjects. Readers are members of the general public or a subgroup with a particular interest.

Articles rarely include source citations.

Articles are usually short, fewer than ten pages

Appearance varies but is generally lively, with color, decoration (headings, sidebars, and other elements), and illustrations (drawings, photographs).

Issues may appear weekly, bi-weekly, or monthly.

Issues are paged separately, each beginning on page 1.

1 Using periodical databases

Periodical databases index the articles in journals, magazines, and newspapers. Often, these databases include abstracts, or summaries, of the articles, and they may offer the full texts of the articles as well. Your library subscribes to many periodical databases and to services that offer multiple databases. (See p. 586 for a list.) Most databases and services will be searchable through the library's Web site.

Note The search engine *Google* is developing *Google Scholar*, an engine at *scholar.google.com* that seeks out scholarly articles. Although it could eventually prove a valuable research tool, at this point *Google Scholar* produces results that are far from complete and include more from science and engineering than from the humanities and social sciences. Your library probably subscribes to most of the periodicals searched by *Google Scholar*, so begin there.

v Selection of databases

To decide which databases to consult, you'll need to consider what you're looking for:

- v **How broadly and deeply should you search?** Periodical databases vary widely in what they index. Some, such as *ProQuest Research Library*, cover many subjects but don't index the full range of periodicals in each subject. Others, such as *Historical Abstracts*, cover a single subject but then include most of the available periodicals and other resources as well. If your subject ranges across disciplines, as Edward Begay's Internet subject does, then start with a broad database. If your subject focuses on a particular discipline, then start with a narrower database.
- v **Which databases most likely include the kinds of resources you need?** The Web sites of most libraries allow you to narrow a database search to a particular kind of periodical (such as newspapers or journals) or to a particular discipline. You can then discover each database's focus by checking the description of the database (sometimes labeled "Help" or "Guide") or the list of indexed resources (sometimes labeled "Publications" or "Index"). The description will also tell you the time period the database covers, so you'll know whether you also need to consult older print indexes at the library.

v Database searches

When you first search a database, use your own keywords to locate sources. The general procedure is discussed on page 573. Your goal is to find at least one source that seems just right for your subject, so that you can then see what subject headings the database itself uses for such sources. Using one or more of those headings will focus and speed your search.

Edward Begay first searched *EBSCOhost Academic Search Elite*, a broad database covering nearly 3500 periodicals. His keywords *Internet AND access* returned more than 2000 articles, and none on the first page dealt with his subject. He then tried *Internet AND access AND education*, getting fewer returns but still nothing usable on the first page. He stopped there to brainstorm other terms that might work better, some of them synonyms and some narrower:

| | | |
|----------------|----------|----------------|
| Internet | access | education |
| World Wide Web | use | schools |
| Web | equality | public schools |
| computers | poverty | |
| technology | | |

The three screen shots here show Begay's use of one combination of these terms, *Internet AND equality AND education*. The returns (screen 2) included one source clearly related to Begay's subject. The full record for the source (screen 3) provided an abstract of the source along with the database's headings for the article. Begay had seen one of these headings, *DIGITAL divide*, in his background research, but he had thought the term might be too current to produce good results. Now he tried it on *Academic Search Elite* and found dozens of additional source possibilities. To broaden his search, he also tried some of the subject headings for these other sources, such as *Educational technology* and *Technology—sociological aspects*. When he thought he had found a good range of possible sources, including government publications as well as scholarly and popular articles, he moved on to other databases.

Many databases allow you to limit your search to so-called peer-reviewed or refereed journals—that is, scholarly journals whose articles have been reviewed before publication by experts in the field and then revised by the author. (Begay's initial search of *EBSCOhost Academic Search Elite* included this limitation, as shown in screen 1.) Limiting your search to peer-reviewed journals can help you navigate huge databases that might otherwise return scores of unusable articles from other kinds of periodicals.

Note As you follow leads in online indexes, it's easy to lose track of what database you're using. You'll need this information for any article you obtain online, so make sure you have it. If you print search records or e-mail them to yourself, the database information will appear on the record along with other bibliographic information (see screen 3 above).

v The use of abstracts

The full article record on the previous page shows a key feature of many databases' periodical listings: an abstract that summarizes the article. Describing research methods, conclusions, and other information, an abstract can tell you whether you want to pursue an article and thus save you time. However, the abstract cannot replace the actual article. If you want to use the work as a source, you must consult the full text, as described on the facing page.

v Helpful databases

The list below includes databases to which academic libraries commonly subscribe. Some of these databases—for instance, *ProQuest Research Library* and *EBSCOhost Academic Search*—cover much the same material, so your library may subscribe to several of them but not all.

Note More specific lists of indexes for academic disciplines appear later in this book: see pages 745 (literature), 762 (other humanities), 782–83 (social sciences), and 810 (natural and applied sciences).

EBSCOhost Academic Search. A periodical index covering magazines and journals in the social sciences, sciences, arts, and humanities. Many articles are available full-text.

FirstSearch. A Web interface to more than sixty databases, including *WorldCat*, *Books in Print*, *Dissertation Abstracts*, *Wilson Select*, *Article-First*, *Biography Index*, *Book Review Index*, *Education Abstracts*, *ERIC*, *Medline*, *PAIS*, and many more.

InfoTrac Expanded Academic. The Gale Group's general periodical index covering the social sciences, sciences, arts, and humanities as well as national news periodicals. It includes full-text articles.

JSTOR. Full-text articles from older volumes of several hundred journals in the sciences, social sciences, arts, humanities, and business.

LexisNexis Academic. An index of news and business, legal, and reference information, with full-text articles. *LexisNexis* includes international, national, and regional newspapers, newsmagazines, legal and business publications, and court cases.

Nineteenth-Century Masterfile. Perhaps the only electronic database for materials from the nineteenth century, including *Poole's Index to Periodical Literature* (1802–1906), *W. T. Stead's Index to Periodicals* (1890–1902), and indexes to books and journals.

ProQuest Research Library. A periodical index covering the sciences, social sciences, arts, and humanities, including many full-text articles.

Wilson Databases. A collection of indexes, often provided in a package, including *Business Periodicals Index*, *Education Index*, *General Science Index*, *Humanities Index*, *Readers' Guide to Periodical Literature*, and *Social Sciences Index*.

While using databases like those above, you may want to consult a **citation index** to see what has been written *about* an article or book, as when one scholar comments on the work of another. The three main citation indexes are *Arts and Humanities Citation Index*, *Social Science Citation Index*, and *Science Citation Index*. All three are available on the database *ISI Web of Science*, which many libraries subscribe to.

2 Locating the articles in periodicals

Many article listings you find will include or link directly to the full text of the article, which you'll be able to read online and print or e-mail to yourself. If the full text is not available online, you'll need to consult the periodical itself. Usually the article listing will also say whether the periodical is available in your library. If you don't see this information, then consult the library's list of periodicals (often called *serials*) either in the main catalog or in a separate catalog.

Your library probably holds recent issues of periodicals in the periodicals room. Back issues are usually stored elsewhere, in one of three forms:

- v **In bound volumes**
- v **On microfilm**, a filmstrip showing pages side by side
- v **On microfiche**, a sheet of film with pages arranged in rows and columns.

Consulting periodicals stored on microfilm or microfiche requires using a special machine, or "reader," with which you locate the page and project it on a screen. (Some readers are also attached to scanners or photocopiers.) Any member of the library's staff will show you how to operate the reader.

If the periodical you seek is not available in your library, you may be able to obtain the article by interlibrary loan. The article may arrive online, by mail, or by fax, and there may be a fee for the service. Even electronic loans can sometimes take a week or more, so place your order early.

Note Many periodicals are available both online and in print, and most documentation styles require you to specify which version you consulted. For scholarly journals, the two versions are likely to be identical in content though not in format: for instance, the online version may not include the print version's page breaks and numbers. (However, a full-text version in PDF format reproduces the actual pages of the print journal. To open PDF files, you may need to download a program called *Acrobat Reader*.) For newspapers and magazines, the two versions often differ more: for instance, the online version may be shorter or longer than the print version, may contain fewer illustrations, or may include links to other resources.

43e Finding sources on the Web

As an academic researcher, you enter the World Wide Web in two ways: through your library's Web site, and through public search engines such as *Yahoo!* and *Google*. The library entrance, covered in the preceding sections, is your main path to the books and periodicals that, for most subjects, should make up most of your sources. The public entrance, discussed here, can lead to a wealth of information and ideas, but it also has a number of disadvantages:

- ▼ **The Web is a wide-open network.** Anyone with the right hardware and software can place information on the Internet, and even a carefully conceived search can turn up sources with widely varying reliability: journal articles, government documents, scholarly data, term papers written by high school students, sales pitches masked as objective reports, wild theories. You must be especially diligent about evaluating Internet sources (see pp. 602–09).
- ▼ **The Web changes constantly.** No search engine can keep up with the Web's daily additions and deletions, and a source you find today may be different or gone tomorrow. You should not put off consulting an online source that you think you may want to use. If it seems appropriate for your needs, take notes from it or (if the source allows) download it to your own computer. Be sure to record complete source information at the same time (see p. 569 for a list of what to record).
- ▼ **The Web provides limited information on the past.** Sources dating from before the 1980s or even more recently probably will not appear on the Web.
- ▼ **The Web is not all-inclusive.** Most books and many periodicals are available only via the library, not directly via the Web.

Clearly, the Web warrants cautious use. It should not be the only resource you work with.

I Using a search engine

To find sources on the Web, you use a **search engine** that catalogs Web sites in a series of directories and conducts keyword searches. Generally, use a directory when you haven't yet refined your topic or you want a general overview. Use keywords when you have refined your topic and you seek specific information.

▼ Current search engines

Dozens of search engines are available. The box opposite lists the currently most popular engines. (To reach any of them, enter its URL in the Address or Location field of your Web browser.)

Note For a good range of reliable sources, try out more than a single search engine, perhaps as many as four or five. No search engine can catalog the entire Web—indeed, even the most powerful engine may not include half the sites available at any given time, and most engines include only a fifth or less. In addition, most search engines accept paid placements, giving higher billing to sites that pay a fee. These so-called sponsored links are usually marked as such, but they can compromise a search engine's method for arranging sites in response to your keywords.

▼ A sample search engine

The screen shot on the following page from *Google* shows the features common to most search engines. Any search engine's Advanced Search option allows you to customize your search (for instance, by selecting a date range, a language, or a number of results to see) and to limit or expand your keywords (for instance, by using *AND*, *NOT*, and other operators). It may also tell you how the search engine determines the order in which it presents results. (Criteria include the

number of times your keywords appear on a site, whether the terms appear in the site's title or address, and, in *Google's* case, which other sites link to the site.)

v Search records

Your Web browser includes functions that allow you to keep track of Web sources and your search:

- v **Favorites or Bookmarks save site addresses as links.** Click one of these terms near the top of the browser screen to add a site you want to return to. A favorite or bookmark remains on file until you delete it.
- v **History records the sites you visited over a certain period,** such as a day, a week, or a month. (You can set the period from the browser's Tools menu.) After the period elapses, the history is deleted. If you forgot to bookmark a site, click History or Go to recover the site from the search history.

Note If you do Web research on a public computer, such as in a lab at school, your favorites and history probably will not be saved from one day to the next. To track sources that you may want to return to, copy the site URLs and e-mail them to yourself.

2 Following a sample Web search

For his initial search of the Web, Edward Begay started with the keywords *digital divide* on *Google*. But the search returned more than 6.6 million items, as shown on screen 1 opposite. Although some sources on the first page looked promising, Begay realized he had to alter his strategy to get more focused results. Following the same procedure he used with a periodical database, Begay experimented with combinations of synonyms and narrower terms. The keywords "*digital divide*" "*public education*" *US* did refine the search but still produced 31,000 results.

From *Google's* Advanced Search help, Begay learned that he could specify what he wanted to see in the URLs of sources. Adding *site:.gov* limited the results to government publications, whose URLs end in *gov*. With "*digital divide*" "*public education*" *US site:.gov*, Begay received 547 results (see screen 2). Although the number was still large, the government origin combined with *Google's* criteria for ranking sources gave Begay confidence that the first fifty or so would serve his needs. He continued to limit the search by replacing *site:.gov* with *site:.edu* (educational institutions), *site:.org* (nonprofit organizations), and *site:.com* (commercial organizations).

Knowing that no search engine catalogs every Web site, Begay also tried his successful keywords at two other engines, *AlltheWeb* and *Dogpile*. The *AlltheWeb* search turned up an additional promising site among the first thirty. The *Dogpile* search, which worked through multiple search engines, returned more than a thousand items, including many irrelevant ones but also (among the first thirty) one more possible source.

Begay's Web search illustrates the trial-and-error approach required to refine keywords so that they locate worthwhile sources. Almost any successful Web search will require similar persistence and patience.

43f Finding other online sources

Several online sources can put you directly in touch with experts and others whose ideas and information may inform your research. Because these sources, like Web sites, are unfiltered, you must always evaluate them carefully. (See pp. 607–09.)

1 Using electronic mail

As a research tool, e-mail allows you to communicate with others who are interested in your topic. You may, for instance, carry on an e-mail conversation with a teacher at your school or interview an expert in another state to follow up on a scholarly article he or she published. (See pp. 826–29 on using e-mail.)

2 Using discussion lists

A **discussion list** (sometimes called a **listserv** or just a **list**) uses e-mail to connect individuals who are interested in a common subject, often with a scholarly or technical focus. By sending a question to an appropriate list, you may be able to reach scores of people who know something about your topic. For an index of discussion lists, see *tile.net/lists*.

When conducting research on a discussion list, follow the guide-lines for e-mail etiquette on pages 828–29 as well as these:

- v **Lurk for a while**—reading without posting messages. Make sure the discussion is relevant to your topic, and get a sense of how the group interacts.

- ▼ **Don't ask for information you can find elsewhere.** Most list members are glad to help with legitimate questions but resent messages that rehash familiar debates or that ask them to do someone else's work.
- ▼ **Evaluate messages carefully.** Many list subscribers are passionate experts with fair-minded approaches to their topics, but almost anyone with an Internet connection can post a message to a list. See pages 607–09 on evaluating online sources.

3 Using Web forums and newsgroups

Web forums and newsgroups are more open and less scholarly than discussion lists, so their messages require even more diligent evaluation. **Web forums** allow participants to join a conversation simply by selecting a link on a Web page. For a directory of forums, see *delphiforums.com*. **Newsgroups** are organized under subject headings such as *soc* for social issues and *biz* for business. For a directory of newsgroups, see *groups.google.com*.

4 Using Web logs

Web logs, or blogs, are personal sites on which an author posts time-stamped comments, generally centering on a common theme, in a format that allows readers to respond to the author and to one another. You can find directories of blogs at *bloglines.com* and *blogwise.com*. See also pages 830–32 for a discussion and example of communicating via blogs.

Like all other online media discussed in this section, Web logs consulted as potential sources must be evaluated carefully. Some are reliable sources of opinion, news, or evolving scholarship, and many refer to worthy books, articles, Web sites, and other resources. But lots of blogs are little more than outlets for their authors' gripes and prejudices. See pages 607–09 for tips on telling the good from the bad.

5 Using synchronous communication

Synchronous (or simultaneous) **communication** allows conversations in real time, the way we talk on the phone. Synchronous programs include instant-messaging applications, Web courseware, Internet relay chat (IRC), and virtual environments called MOOs.

Synchronous communication can be used to conduct interviews or hold debates. Your instructor may ask you to use it for your coursework or research and will provide the software and instructions to get started. You can also find out more about synchronous communication at *du.org/cybercomp.html* or *internet101.org/chat.html*.

43g Finding government publications

Government publications provide a vast array of data compilations, reports, policy statements, public records, and other historical and contemporary information. For US government publications, by far the most numerous, consult the Government Printing Office's *GPO Access* at *gpoaccess.gov/index.html*. Many federal, state, and local government agencies post important publications—legislation, reports, press releases—on their own Web sites. You can find lists of sites for various federal agencies by using the keywords *United States federal government* with any search engine. Edward Begay took this approach to find statistics from the Department of Commerce on computer use by people of various incomes and races (see the screen shot below).

Besides what's available online, your library will have a large collection of printed government publications only if it is a depository library (that is, designated to receive such documents). If yours is a depository library, ask a librarian to help you locate the documents you seek.

43h Finding images

Pages 225–29 discuss the use of images to support an argument. To find images, you have a number of options. (The Web links in the following lists are available online at *ablongman.com/littlebrown*.)

- ▼ **Scout for images while reading print or online sources.** Your sources may include charts, graphs, photographs, and other images that can support your ideas. When you find an image you may want to use, photocopy or download it so you'll have it available later.
- ▼ **Create your own images,** such as photographs or charts. See pages 120–21 for suggestions on graphics software programs.
- ▼ **Use an image search engine.** *Google, Yahoo!, AlltheWeb,* and some other search engines conduct specialized image searches. They can find scores of images, but the results may be inaccurate or incomplete because the sources surveyed often do not include descriptions of the images. (The engines search file names and any text accompanying the images.)

- ▼ **Use a public image database.** The following sites generally conduct accurate searches because their images are filed with information such as a description of the image, the artist's name, and the image's date:

Adflip (adflip.com). Historical and contemporary print advertisements.

Duke University, *Ad*Access* (scriptorium.lib.duke.edu/adaccess). Print advertisements spanning 1911–55.

Library of Congress, *American Memory* (memory.loc.gov/ammem). Maps, photographs, and prints documenting the American experience.

Library of Congress, *Prints and Photographs Online Catalog* (loc.gov/rr/print/catalog.html). Images from the library's collection, including those available through *American Memory*.

New York Public Library Digital Gallery (digitalgallery.nypl.org/nypldigital). Maps, drawings, photographs, and paintings from the library's collection.

Political Cartoons (politicalcartoons.com). Cartoons on contemporary issues and events.

- ▼ **Use a public image directory.** The following sites collect links to image sources:

Art Source (ilpi.com/artsource/general.html). Sources on art and architecture.

ARTstor (artstor.org). Museum collections and a database of images typically used in art history courses.

Museum Computer Network (mcn.edu/resources/sitesonline.htm). Museum collections.

Washington State University, *Popular Culture. Resources for Critical Analysis* (wsu.edu/%7Eeamerstu/pop/cvrguide.html). Sources on advertising, fashion, magazines, toys, and other artifacts of popular culture.

Yale University Arts Library, *Image Resources* (www.library.yale.edu/art/imageresources.html). Sources on the visual and performing arts.

- ▼ **Use a subscription database.** Your library may subscribe to the following resources:

Associated Press, *AccuNet/AP Multimedia Archives*. Historical and contemporary news images.

Grove Art Online. Art images and links to museum sites.

Many images you find will be available at no charge for copying or downloading, but some sources do charge a fee for use. Before paying for an image, check with a librarian to see if it is available elsewhere for free.

Note You must cite every image source fully in your paper, just as you cite text sources, with author, title, and publication information. In addition, some sources will require that you seek permission from the copyright holder, either the source itself or a third party such as a photographer. Permission is especially likely to be required if you are submitting your paper on the public Web. See pages 635–37 for more about online publication.

43i Generating your own sources

Many of the sources you consult for a research project—and most of the resources of the library—are likely to be secondary sources whose authors draw their information from other authors. However, academic writing will also require you to consult primary sources and to conduct primary research for information of your own. In many papers this primary research will be the sole basis for your writing, as when you analyze a poem or report on an experiment you conducted. In other papers you will be expected to use your research to support, extend, or refute the ideas of others.

Chapters 49–53 discuss the textual analyses, surveys, experiments, and other primary sources you may use in writing for various academic disciplines. One primary source not covered there is the personal interview with an expert in the topic you are researching. Because of the give-and-take of an interview, you can obtain answers to questions precisely geared to your topic, and you can follow up on points of confusion and unexpected leads. In addition, quotations and paraphrases from an interview can give your paper immediacy and authority. Edward Begay used just such an interview in his paper about the Internet (see p. 704).

You can conduct an interview in person, over the telephone, or online using electronic mail or a form of synchronous communication. A personal interview is preferable if you can arrange it because you can see the person's expressions and gestures as well as hear his or her tone and words. But telephone and online interviews allow you to consult someone who resists a personal interview or who lives far away from you, while still retaining most advantages of interaction.

A few precautions will help you get the maximum information from an interview with the minimum disruption to the person you are interviewing:

- ▼ **Choose your interviewee carefully.** If you do not already know whom to consult for an interview, ask a teacher in the field or do some telephone or library research. Likely sources, depending on your topic, are those who have written about your topic or something closely related, officials in government, businesspeople, even a relative, if he or she is an expert in your topic because of experience, scholarship, or both.
- ▼ **Call or write for an appointment.** Tell the person exactly why you are calling, what you want to discuss, and how long you expect the interview to take. Be true to your word on all points.
- ▼ **Prepare a list of open-ended questions to ask**—perhaps ten or twelve for a one-hour interview. Plan on doing some research for these questions to discover background on the issues and your subject’s published views on the issues.
- ▼ **Give your subject time to consider your questions.** Don’t rush into silences with more questions.
- ▼ **Pay attention to your subject’s answers** so that you can ask appropriate follow-up questions and pick up on unexpected but worthwhile points.
- ▼ **Take care in interpreting answers,** especially if you are online and thus can’t depend on facial expressions, gestures, and tone of voice to convey the subject’s attitudes. Ask for clarification when you need it.
- ▼ **Keep thorough notes.** Take notes during an in-person or telephone interview, or tape-record the interview, if you have the equipment and your subject agrees. For online interviews, save the discussion in a file of its own.
- ▼ **Verify quotations.** Before you quote your subject in your paper, check with him or her to ensure that the quotations are accurate.
- ▼ **Send a thank-you note immediately after the interview.** Promise your subject a copy of your finished paper, and send the paper promptly.

EXERCISE 43.1 Using the library

To become familiar with the research sources available through your library, visit both the library and its Web site for answers to the following questions. Ask a librarian for help whenever necessary. (You can do this exercise online at ablongman.com/littlebrown.)

1. Which resources does the library include on its Web site? Which resources require a visit to the library?
2. Where are reference books stored in the library? How are they cataloged and arranged? Which ones are available through the Web site or on CD-ROM? Where and in what format(s) are (a) *Contemporary Authors*, (b) *Encyclopaedia Britannica*, and (c) *MLA International Bibliography of Books and Articles on the Modern Languages and Literatures*?
3. Where is the catalog of the library’s periodicals? Where and in what format(s) does the library have current and back issues of the following periodicals: (a) the *New York Times*, (b) *Harper’s* magazine, and (c) *Journal of Social Psychology*?
4. What tools does the library’s Web site offer for finding periodical databases that are appropriate for a particular research subject?
5. Research the focus and indexed publications of two periodical data-bases, such as *InfoTrac*, *JSTOR*, *LexisNexis*, *PAIS*, or *ProQuest Research Library*. What disciplines does each database seem most suited for?
6. Does the book catalog cover all of the library’s book holdings? If not, which books are not included, and where are they cataloged?
7. What are the library call numbers of the following books: (a) *The Power Broker*, by Robert Caro; (b) *Heart of Darkness*, by Joseph Conrad; and (c) *The Hero with a Thousand Faces*, by Joseph Campbell?

EXERCISE 43.2 Finding library sources

Locate at least six promising articles and books for the subject you began working on in the previous chapter (Exercise 42.1, p. 563, and Exercise 42.2, p. 567). Consider the sources “promising” if they seem directly to address your central research question. Following the guide-lines on pages 567–70, make an annotated working bibliography of the sources. Be sure to include all the information you will need to acknowledge the sources in your final paper.

EXERCISE 43.3 Finding Web sources

Use at least two Web search engines to locate six or seven promising sources for your research project. Begin by developing a list of keywords that can be used to query one of the search engines (see pp. 574–75). Check the Advanced Search option of the engine if you need to narrow your search. Then try your refined keywords on the other search engine as well. How do the results differ? What keyword strategies worked best for finding relevant information? Add promising sources to your annotated working bibliography.

<http://www.ablongman.com/littlebrown>

Visit the companion Web site for more help and additional exercises on finding sources, including searching electronically.

A tip for researchers

Take advantage of two valuable resources offered by your library:

- ∨ **An orientation**, which introduces the library's resources and explains how to reach and use the Web site and the print holdings.
- ∨ **Reference librarians**, whose job it is to help you and others navigate the library's resources. Even very experienced researchers often consult reference librarians.

Ways to refine keywords

Most databases and many search engines work with **Boolean operators**, terms or symbols that allow you to expand or limit your keywords and thus your search.

- ∨ **Use *AND* or + to narrow the search** by including only sources that use all the given words. The keywords *Internet AND access* request only the sources in the shaded area:

- v Use **NOT** or – (“minus”) to narrow the search by excluding irrelevant words. *Internet AND access NOT provider* excludes sources that use the word *provider*:

- √ **Use OR to broaden the search** by giving alternate keywords. *Inter-net AND access OR use* allows for sources that use a synonym for *access*:
- √ **Use parentheses or quotation marks to form search phrases.** For instance, *(Internet access)* requests the exact phrase, not the separate words. Only sources using *Internet access* would turn up.
- √ **Use NEAR to narrow the search** by requiring the keywords to be close to each other—for instance, *Internet NEAR education*. Depending on the resource you're using, the words could be directly next to each other or many words apart. Some resources use *WITHIN* so that you can specify the exact number of words apart—for instance, *Internet WITHIN 10 education*.
- √ **Use wild cards to permit different versions of the same word.** In *child**, for instance, the wild card *** indicates that sources may include *child, children, childcare, childhood, childish, childlike, and childproof*. The example suggests that you have to consider all the variations allowed by a wild card and whether it opens up your search too much. If you seek only two or three from many variations, you may be better off using *OR: child OR children*. (Note that some systems use *?, :, or +* for a wild card instead of ***.)
- √ **Be sure to spell your keywords correctly.** Some search tools will look for close matches or approximations, but correct spelling gives you the best chance of finding relevant sources.

Guide to research sources

Reference works: helpful for summaries of topics and information for further research

- √ General encyclopedias 577
- √ Specialized encyclopedias, dictionaries, bibliographies 577
- √ Unabridged dictionaries and special dictionaries on language 578
- √ Biographical reference works 578
- √ Atlases and gazetteers 578
- √ Almanacs and yearbooks 579

General books: literary works, nonfiction surveys, in-depth studies, and other materials, available for circulation

- √ The library catalog 579
- √ Search strategy 579
- √ References to books 581

Periodicals: magazines, journals, and newspapers, containing detailed and current information

- √ Periodical databases 582
- √ Abstracts 586
- √ Helpful databases 586
- √ Locating articles 587

The Web: a network of computers providing access to libraries, publications, organizations, governments, and individuals

- √ Search engines 588
- √ Sample search 589

Other online sources:

- √ Electronic mail 592
- √ Discussion lists 592
- √ Web forums and newsgroups 593
- √ Web logs 593
- √ Synchronous communication 593

Government publications: practical advice, raw data, reports, and other information 594

Images: photographs, paintings, graphs, and other illustrations 594

Your own sources: interviews, surveys, and other primary sources you create 596

1. Initial keyword search of book catalog

Keywords

2. Book catalog search results

3. Book catalog full record

Title and subtitle

Author
 Publisher and date
 Subject headings for book
 Coauthor
 Library call number

1. Initial keyword search of periodical database

Database
 Keywords
 Search limited
 to peer-reviewed journals

2. Partial keyword search results

Article title
 Author
 Journal and publication information
 Available full text

3. Full article record with abstract

Article title
 Author
 Journal and publication information
 Database subject headings
 Abstract
 Database

Web search engines

The features of search engines change often, and new ones appear constantly. For the latest on search engines, see the links collected by *Search Engine Watch* at searchenginewatch.com/links.

Directories that review sites

BUBL Link (bubl.ac.uk)
Internet Public Library (ipl.org/div/subject)
Internet Scout Project (scout.wisc.edu/archives)
Librarians' Index to the Internet (lii.org)

The most advanced and efficient engines

AlltheWeb (alltheweb.com)

One of the fastest and most comprehensive engines, *AlltheWeb* updates its database frequently so that it returns more of the Web's most recent sites. It allows searches for news, pictures, and audio and video files.

Google (google.com)

Also fast and comprehensive, *Google* ranks a site based not only on its content but also on the other sites that are linked to it, thus providing a measure of a site's usefulness. *Google* also allows searches for news, discussion groups, and images.

Other engines

AltaVista (altavista.com)
Ask Jeeves (ask.com)
Dogpile (dogpile.com)
Excite (excite.com)
Lycos (lycos.com)
MetaCrawler (metacrawler.com)
Yahoo! (yahoo.com)

Google home page

Saved sites
 History: record
 of sites visited
 Specific collections to search
 Search help
 Keywords

1. First Google search results

Keywords used for search

Number of results

2. Google results with refined keywords

Keywords used for search

Number of results

Chart from a government publication

Government Web sites can be sources for data, policy, consumer advice, and other information.