the Student’s Survival Guide to Research

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## CONTENTS

List of Figures  ................................................. ix

Introduction  .................................................. xi

1 What Is Research?  ........................................ 1

2 Preparing for Research  ............................. 15

3 Understanding Libraries and Librarians .......... 37

4 Understanding Your Assignment  .................. 49

5 Selecting a Research Topic  ......................... 59

6 Locating Information Resources .................. 73

7 Accessing and Acquiring Information Resources .... 81

8 Constructing Effective Search Strategies ......... 93

9 Understanding Search Results  .................... 113

10 Reading and Evaluating Information ............ 121

11 Conducting Ethically and Legally Responsible Research .... 141

12 Writing Your Paper  ................................. 157

13 Sample Search  ........................................... 169

Glossary  ...................................................... 195

Index  ......................................................... 209
INTRODUCTION

Research can be challenging.

You probably don’t want to hear that, but it’s true. Increasingly, the sheer amount of information available can be intimidating to even the most experienced of researchers. That the number and variety of search tools used to sift through this information continue to grow only makes matters worse. In turn, the strategies and methods for conducting efficient and effective research continue to grow as well. These and other factors certainly contribute to the challenges of research.

Beginning researchers as well as those who don’t often do research face their own, additional, unique set of challenges. For example, many don’t understand or aren’t familiar with the research process. Some have no idea which search tools to use or even how to get started using them—let alone using them effectively. Others underestimate the amount of time it takes to successfully conduct research or otherwise have difficulty managing their time throughout the research process. Add to that other coursework and various other considerations, and, well . . .

Sound familiar? If so, this book is for you!

So . . . yes . . . research is a challenge. Everyone—even the veteran researcher—encounters difficulties at some point. But, rest assured, these obstacles are not insurmountable. With that in mind and as you begin to use this book, it might be helpful to think of research as a foreign language. The words might not make sense at first. You might not understand what’s being said or how to apply the rules of the language of research to your particular assignment.

That said, this book will not make you an expert researcher nor meet all your research needs. (You probably don’t want to hear that either.) But, truth be told, no matter how well this book is written, no matter how much detail is provided, no matter how much you absorb, you will not become an
expert researcher after reading this book. In fact, there is no trick, no short- 
cut, no quick fix to becoming a good researcher.

As with any skill, to become more fluent, to become a better researcher, 
requires time, patience, and lots of practice. No one walks into a language 
class and becomes fluent the first day or after just one lesson. You might 
start off by learning basic pronunciation. Over time, as your vocabulary and 
your knowledge of how to speak and write the language grow, your com- 
fort with the language will grow as well.

The same is true of research. The more you do it, the more experience 
you have with it, the easier it will become and the better you are likely to 
become at it.

In that context—and sticking with the research-as-foreign-lan-
guage metaphor—think of this book as a sort of travel dictionary. It is 
not designed to be exhaustive, providing you with every possible word 
you might encounter. Rather, it is intended to provide you with a work-
ing knowledge of the language. Armed with the key terms you are most 
likely to encounter, you will travel through the land of research much more 
smoothly.

Although the chapters can be read independently, it is recommended 
that you read them in the order in which they are presented. By reading 
chapters out of sequence, you risk losing the flow of the content—how 
the concepts and strategies presented relate to and with one another. The 
reflections that appear at the end of each chapter are not so much prac-
tice exercises as they are thought exercises, designed to help you think 
more critically about yourself and the research process. Words highlighted 
throughout the text appear in the glossary at the end.

*Bon voyage!*
CHAPTER 1
What Is Research?

By enrolling in a class requiring research, you’ve essentially made (or been forced to make) the decision to conduct research. But what does that mean? Effective research involves a lot of time, energy, and effort. For those and other reasons, research can be a daunting experience, particularly for beginning researchers and for students who don’t conduct research very often.

But feeling overwhelmed is okay. As with any task that you do for the first time or that you don’t do often, some degree of hesitation, stress, and uncertainty is expected. Given the vast amount of information and resources available to today’s researcher, the research process can be intimidating even for veteran researchers.

Defining Research

Individuals conduct research for many reasons. Despite this fact, when people hear the term, one of two images typically comes to mind. Some envision a scientist in a lab coat performing experiments. Others imagine a college student sitting in the library reading and taking notes. (For the purposes of this book, it is this second example you should think of when the term research is used.)

Whatever form it takes, all research shares several key characteristics as outlined in figure 1.1. The goals of each researcher and the techniques each employs may appear dramatically different. However, every researcher is attempting to address a specific information need. In that respect, a scientist trying to find a cure for a disease is no different from a student like you...
who has been asked to write a research paper on Shakespeare: you’re both trying to find information for a specific purpose. For this reason, it should come as no surprise that research is often equated with learning.

**FIGURE 1.1**

**Characteristics of Research**

All research...

- Involves acquiring, interpreting, and assimilating information
- Organizes and presents information via a narrative, a presentation, or both (examples: journal article, term paper, conference presentation, lecture)
- Is systematic and organized
- Provides a description, explanation, or understanding of a particular topic, idea, or problem
- Focuses on the discovery or interpretation of facts
- Addresses a specific information need
- Is cyclical in that it starts and ends with a problem or question

**Why Do Research?**

If you haven’t already discovered this, in college your instructors are not going to simply give you information. You need to find it on your own. However, no lecture, article, book, or website—or any other source of information—can cover every aspect of a single topic. You may need to consult multiple sources in multiple formats before you have a good understanding of a particular topic or idea. You may need to decide between two contradictory sources of information—for example, what was true ten years ago may no longer be.

The many reasons to conduct research include these:

- You will be able to pursue your own interests and ideas.
- You will be able to effect a change in yourself, others, and society using the information you acquire.
• You will discover effective and efficient ways to access and acquire information.
• Your ability to think critically about information and its sources will increase.
• Your ability to synthesize, organize, and present information in a meaningful way will increase.
• You can determine gaps in your knowledge and understanding of a topic.

“Why Can’t I Just Use the Internet?”

Many beginning researchers ask this question. Searching the Internet has become commonplace. It is no longer a mysterious science understood only by techies and computer nerds. Most students have grown up with the Internet. Moreover, although one may have to sift through some trash to find the treasure, most individuals are generally able to find something of relevance. The near-instant results also provide immediate gratification.

Most beginning researchers do not have this same level of comfort or degree of success searching for books and articles. They often don’t know which search tool to use to do so. In some cases, they are not even aware that such search tools exist. The variability in interfaces and search tool features makes it difficult to know how to conduct a search. Acquiring the content they want may require more time and involve additional steps, such as photocopying or requesting material from another library.

So... back to your question: “Why can’t I just use the Internet?”

Although more and more information is being digitized all the time, a significant amount of information is still available only in printed format. This is especially true for many scholarly or academic sources of information—the types of sources most professors will expect you to be using. Your library’s information resources are often the only way to access these sources directly and free of charge.

In addition, you simply might not be permitted to use Internet sources. Because a lot of information found on the Internet is inaccurate or misleading, some instructors won’t allow you to use more than a limited number of websites (if any) as sources.
In the end, the answer to the question requires you to examine the function of the Internet itself. In doing so, keep in mind that, just like books and articles, Internet-based information is ultimately just one more tool in your information toolbox. That is, some tools work better for some jobs than for others. For example, although we could certainly use a hammer to drive a screw into a board, using a screwdriver would probably be more effective. Translation? Sometimes the Internet is the proper tool and sometimes it is not. Deciding which is which is outlined more in chapters 6 and 7.

**Stages of Research**

Research progresses sequentially through four basic stages or actions: (1) planning your work, (2) acquiring information, (3) writing your paper, and (4) revising your paper.

**Planning Your Work**

During this first stage, your primary goal is to learn about your assignment and develop a plan to complete it. Creating a time line for completion, developing your topic, and **brainstorming** about potential sources of information are among the many activities that take place in this stage. Some of the other activities at this stage include these:

- Identifying your specific information need(s)
- Brainstorming possible research strategies, resources, and terms
- Clearly articulating your topic, including drafting a **thesis**, or **purpose, statement** and related **research questions** you hope to answer through your research

**Acquiring Information**

The emphasis in this second stage is on implementing your plan to acquire the information you need to write your paper. As you acquire sources of information, you will need to evaluate them to make sure they are relevant and appropriate to your needs. As you learn more about your topic, it is extremely likely that you will revise your topic and refocus your research accordingly. Some of the activities at this stage are these:
• Finding source material
• Identifying source material that is relevant and appropriate to your information need
• Taking notes
• Revising your topic, research strategy, and completion time line

Writing Your Paper

Simply acquiring and evaluating the information are not sufficient. The third step of the research process is to synthesize the information you’ve collected and compile it into a logical, organized written paper. This doesn’t mean just copying and pasting your notes into a paper. It means including information from sources but also your own insights into, interpretations of, and ideas about the topic. Some of the activities at this stage include the following:

• Organizing your source material in a logical pattern
• Synthesizing your source material into a readable narrative
• Addressing research “areas of need,” such as the need for more sources
• Incorporating a variety of words and writing techniques into your narrative

Revising Your Paper

In this final stage, you try to polish your finished product for submission. Sometimes you will do this before your final paper is submitted. Other times, you will turn in your final paper, respond to comments and suggestions made by your instructor, and then resubmit. Either way, this phase typically involves editing, rewriting, and otherwise tweaking your paper until it’s the best it can be. Some of the activities at this stage are these:

• Getting feedback on your writing about things such as flow, arrangement, and style
• Determining if assignment needs have been met
• Reviewing to ensure your research questions and purpose statement have been addressed
• Proofreading your writing for grammatical and typographical errors
Understanding the Research Process

Research is a process. If you simply sought sources and found them all the first time, that would be called searching. Because research is also a cycle, you are likely to search and search again to find what you want—or, literally, re-search. In fact, you may go through the various stages of the research process multiple times to greater or lesser degrees.

With that in mind, it is important to note that every researcher goes through similar stages and engages in similar activities throughout the research process. However, there is no perfect blueprint or single, right way to proceed through these stages and activities to ensure success. For example, some individuals begin their research by reading information on an area of interest and develop a topic accordingly. Others define a topic and revise it along the way as they encounter new information. Neither method for defining a topic is more right than the other.

The bottom line is that you need to develop your own personal research style that works for you. As you do so, be aware that what works for some researchers may not work for others. Likewise, know that all of the various research stages and activities you’ll experience are interrelated. As a result, you can’t ignore or neglect an aspect without detracting from the overall quality of your project. For example, you can’t expect to write a good paper if you don’t take good notes along the way. In the end, the degree to which you are both successful at each stage and effective at synthesizing each research activity plays a central role in determining your final grade.

It is important to note that the depth and breadth of every research project vary. However, the stages of the research process itself are well defined and common to all projects (see figure 1.2). Moreover, at each stage of the research process, beginning and expert researchers alike commonly experience similar emotions or reactions. The latter are outlined in figure 1.2. By familiarizing yourself with these stages and knowing ahead of time the feelings you are likely to experience, you will be better prepared to deal with and successfully navigate through them.
Here are two other important features to note about figure 1.2:

1. The research process is depicted as a cycle. Again, it can’t be emphasized enough: research is not a straight-line, linear process. Effective, productive research often requires going through one or more stages multiple times before the project is completed. That is why it’s called “research” and not simply “search.”

2. There is no clear starting point. Everyone enters the research cycle at different points and with different needs and expectations. Before you actually start a research project, for example,
you might already have considerable knowledge about your topic. As a result, rather than selecting a topic and beginning to look for background information, you may actually begin by examining and evaluating what you already know and (re)defining your topic accordingly.

What Is a Term Paper?

Having looked at research and the research process, it’s now time to take a brief look at their application. The information you acquire through the research process will be compiled into what is called a term paper. Research paper or capstone paper are other names your instructor might use.

Strictly speaking, even though the terms are often used interchangeably, term papers and research papers are not exactly the same thing. A key distinction is that a true research paper is the result of primary research. That is, the research paper is written or produced by the individual(s) who conducted the original research. Such firsthand research often results in some sort of new discovery or understanding. The results of primary research are typically reported in an article or research paper and are frequently presented at a conference. Because it reflects the original or primary research, such a report is known as a primary source.

A term paper, on the other hand, is similar but doesn’t necessarily involve the level or degree of sophistication needed for a true research paper. This is not to say a term paper does not involve significant amounts of research or time and effort. It does. However, rather than detailing the results of an experiment you conducted yourself, a term paper relies on information and source material produced by someone else. Such research is referred to as secondary research, and the sources used to produce the resultant report are called secondary sources.

To demonstrate the difference, suppose Researcher X is experimenting with a new technique to combat cancer.

Primary research: Because he would be the primary researcher, he is conducting primary research. In turn, his research paper would include such information as the experiment parameters, data collected and conclusions reached, potential side effects of the techniques, and similar facts discovered during the research process.
Secondary research: As a student, you decide to write a paper on experimental cancer treatments. The article Researcher X wrote shows up in one of your searches. You decide to use it. Because you neither wrote the article nor conducted the original research—you are merely reporting on the research of Researcher X—the article is a secondary source, and you are conducting secondary research.

A term paper . . .

- Involves secondary research
- Represents the final product of a semester- or term-long effort
- Is typically a written report
- Involves finding potential sources of information
- Reflects your values, perspectives, and personal experiences
- Requires analysis and evaluation of source material
- Synthesizes and connects source material in a meaningful way
- Uses and cites sources appropriately
- Varies in length (ten to fifteen pages is common)
- Demonstrates evidence of understanding the topic and the sources used
- Typically represents a significant portion of your final grade for a course

What a Term Paper Is Not

Many beginning researchers make the mistake of using a term paper to simply rehash key points about a topic or issue. However, a term paper is not simply a summary of key information. One of the main functions of a term paper is to demonstrate that you understand how the various pieces of information you’ve retrieved relate to one another. That is, a term paper should not simply summarize and regurgitate information. Rather, a term paper organizes information and places facts in context so that they have meaning and greater emphasis. In addition, many instructors will ask you to incorporate your own analyses, insights, and observations.

Most instructors will also expect you to address discrepancies among various sources and points of view you encounter. For example, one article might say eggs are an unhealthy food choice while another might state
that they’re good for us. Such seemingly contradictory sources shouldn’t be ignored. In fact, addressing the contradictions is a good way to strengthen your overall paper. Some of the reasons behind these discrepancies are shown in figure 1.3.

**FIGURE 1.3**

Reasons for Discrepancies among Sources

<table>
<thead>
<tr>
<th>Consideration</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Various contextual factors, such as culture, gender, and age, impact how a topic is researched and written about.</td>
<td>Someone who is twenty-five will understand and write about the concept of aging differently than will someone who has recently retired.</td>
</tr>
<tr>
<td>Information is outdated.</td>
<td>What we knew about cancer in 1954 was accurate at that time, but many advancements in cancer research have been made since then.</td>
</tr>
<tr>
<td>Definitions of terms and concepts differ.</td>
<td>Student success might be defined as earning a certain score on an exam or as achieving a certain graduation rate in a school district.</td>
</tr>
<tr>
<td>Interpretations of the data differ.</td>
<td>Saying 51 percent support something is no different from saying 49 percent do not.</td>
</tr>
<tr>
<td><strong>Bias</strong> is present.</td>
<td>A Democrat is likely to have a different perspective about a candidate than is a Republican.</td>
</tr>
</tbody>
</table>

**Elements of a Term Paper**

Term papers typically consist of four common elements—abstract, introduction, body, conclusion—appearing in that order. The order of these elements and the content of any particular section, though, can vary by professor and by the type of term paper you write. Additional elements can include a bibliography or list of works cited.
Abstract

An abstract is essentially a summary. It provides an overview of key points, issues, findings, conclusions, and other information presented in your paper. Some professors will require an abstract and some will not.

Introduction

A term paper’s introduction is usually rather brief, sometimes as short as a single paragraph. It is essentially a longer version of your purpose statement in that it introduces your topic, explains why you are writing the paper and how you are approaching the topic, and lists appropriate key points.

Body

The body is the main part of your paper. Incorporating your thesis statement and introduction, the body of your term paper is designed to prove your case. In the body, you cite and use experts’ opinions to provide evidence in support of your purpose statement and to answer your research questions. If you’re discussing a controversial topic, you’ll typically provide supporting arguments as well as counterarguments critical of your thesis. If you’re not using the work and opinions of others, your paper involves no research and is little more than an opinion piece or essay. If you’re expected to inject your own ideas and observations, these would appear in the body as well.

Conclusion

Your conclusion shouldn’t introduce any new material that you haven’t already covered. Instead, it should reflect on key points you’ve made, synthesizing and otherwise pulling together all the information you’ve presented in the body of your work. In that context, your conclusion should refer to your research questions and overall purpose statement.

Works Cited/References/Bibliography

When you use someone else’s ideas in your paper, you must credit her or him. A works cited page lists the sources of information you used to write your paper. This is sometimes referred to as a bibliography or reference page. There are many citation style manuals (also called style guides and style manuals) and other forms of assistance available to help you with this part of your paper. Some instructors of introductory courses are more
concerned about consistency of citations than they are about mastery of a given citation style. Either way, you should check with your instructor, who can direct you to appropriate resources and provide insight into how perfect your citations need to be for your paper.

Other

Some instructors may ask you to include other, nonstandard elements as part of your term paper. These may be such things as a title page, a list of figures or graphics used, and an appendix. In addition, before submitting your final draft, you might be asked to submit an outline, your notes, or rough drafts of your progress at certain stages. Being asked to submit a list of search terms and strategies is also not uncommon. However, though important to the overall research process, these items typically are not included as part of a standard term paper but are submitted as auxiliary assignments supporting your final paper.

Getting It Done

What does it take to successfully complete a term paper? Being curious about your topic is certainly key. You also have to be able to lengthen your attention span. Having a working knowledge of how to access and use information search tools and being comfortable with writing, editing, and rewriting are also central. Other useful skills and traits include patience, problem- and puzzle-solving ability, a working familiarity with computers, time management, stress management, humility, perseverance, reading comprehension, and organization.

Two Final Thoughts

Two of the most common errors student researchers make are trying to do too much and doing too little. Both approaches are equally problematic and will significantly diminish the quality of your final paper. Knowing when to ask for advice from your instructor is critical in addressing both of these concerns.
Doing Too Much

Overachievers and those extremely motivated by their topic often fall into the trap of trying to exhaust their topic. In an attempt to pursue every possible angle on their topic, some individuals try to find and include every piece of information they can. Sometimes individuals are simply not focused and try to weave together a lot of marginally related pieces of information. Others continue to edit well past the point of diminishing returns.

TIPS

- Review your purpose statement and focus your work accordingly.
- (Re)Focus your purpose statement and research questions.
- Talk with your instructor to determine when enough is enough.

Doing Too Little

At the other end of the spectrum are those individuals who try to do as little as possible. For example, some individuals wait until the last minute, having to pull an all-nighter to get their paper done. Among other things, this approach results in poor quality source material and hurried writing, producing a paper that feels thrown together. Others use the first sources of information they find regardless of whether those sources are relevant or appropriate. Some even try to bypass assignment requirements by changing their fonts, margins, and more to make a short paper seem longer. Simply put, it’s usually pretty easy to detect who has put forth effort and who has not. For those who don’t, the overall quality of the final product is diminished significantly and almost always guarantees a lower grade. In the long run, you’ll be far more successful (and happy) if you do some planning early and complete your research project in stages.

TIPS

- Pace yourself by doing your work in a focused way over an extended period rather than in short, unfocused, compressed bursts.
- Keep in mind that it generally takes less time and effort to do something right the first time than it does to go back later and correct your mistakes.
REFLECTIONS

- What is the longest paper you’ve ever written?
- Have you ever done research before? What was easy for you? With what aspects did you struggle?
- If you’ve never done research before, what is your biggest concern or fear?
- In talking with your classmates, what sorts of things do you hear about research or the research process?
- Is it easy or difficult for you to ask for and act on feedback?
INDEX

A
abstract, 10, 11, 124
academic articles, 123
academic consequences, of plagiarism, 152
academic library, 40, 41–42
academic publications, 56
Academic Search Complete, 176
access issues, 19, 77–78
accessibility, 135–136
accuracy, 128–130, 130–131
ad hominem, 134
advanced search options, 91, 109, 188–190
advertisements, 191
All E-Resources A-Z link, 175
all-nighter, 13
almanac, 84
America: History and Life (AHL), 170, 176–188
analyze, in cubing technique, 67
AND, Boolean operator, 106, 183–184
annotation, 150
anxiety, writing, 158
APA (American Psychological Association) style, 52, 148, 149
appendix, 12
apply, in cubing technique, 67
argue for/against, in cubing technique, 67–68
argumentative/opinion term paper, 51–52
article services, 87
articles
America: History and Life search tool, 170
considerations before search, 86–87
content, evaluation of level of, 122–125
copying or printing, 32
format of sources for term paper, 54–55
full-text, 81
interlibrary loan request for, 79, 92
locating, 117–118
reading information that is too difficult, 122
sample search for, 175–188
search tools for, 76–77
searching for, 87–90
skimming, 25
assignment
checking before submission of term paper, 166
elements of, 50–53
grading of, 49–50
importance of understanding, 49
reflections on, 57
requirements, relevancy of source and, 126–127
review of, before writing term paper, 157
sources, 53–57
See also term paper
assignment elements, 50–53
assistance. See help
associate, in cubing technique, 66–67
audience, 56, 57, 129
authentication, 19, 135–136
author searching, 95–96, 96–97, 129–130
authority, appeal to, 135
B
Back button, 86
backup copies, 34, 167
bandwagon appeal, 134
Baron-Forness Library, Edinboro University of Pennsylvania
sample search for articles, 175–188
sample search for books, 171–175
bias, 128, 133
bibliography
as element of term paper, 11–12
instructions for, 150–151
list of sources, 148
research function of, 85
body, 10, 11  
books  
accessing/acquiring, 84–85  
copying or printing, 32  
format of sources for term paper, 54–55  
in history of libraries, 38–39  
interlibrary loan for, 78, 92  
locating, 115–117  
PILOT search tool for, 170  
sample search for, 171–175  
search tools for, 76–77  
skimming, 25  
Boolean operators (logical operators), 106–107  
bound journals, 117  
brainstorming  
clustering/mapping, 65–66  
cubing, 66–68  
description of, 64  
freewriting, 64  
for ideas for topic, 64–68  
in research planning, 4  
browser, 86, 135  
C  
calendar, 35  
call numbers, 116  
capital letters, 107  
capstone paper. See term paper  
catalogs, 75  
cause/effect organizing pattern, 162  
challenges, of reading, 121–122  
challenges, of research, xi  
chart, 165  
chat, 46  
Chicago citation style, 52, 148  
chronological organizing pattern, 161  
circulation desk, 41  
citation  
definition of, 142  
information note, 28–29  
style guide, 149–150  
style manuals, 11–12  
citations  
copy or print all sources, 31–32  
copying/pasting, 32  
elements of, 147–148  
reasons for, 142–143  
reflections on, 154–155  
responsibility for complete/correct citations, 159  
style for term paper, 52  
style of, 148–150  
text, incorporating, 144–147  
what to cite, 143  
in works cited/references/bibliography, 11–12  
citation-specific notes, 30–31  
clustering, 65–66  
columns, 29  
communication, 45, 46, 66–68  
compare, in cubing technique, 66, 67  
compare/contrast term paper, 52  
comprehension, reading for, 26–27  
computing skills  
backup copies, 34  
reflections on, 36  
for research, 32  
saving files, 33  
concentration, 121–122  
conclusion, 10, 11  
consequences, of plagiarism, 152  
content  
depth of, 83–87  
evaluation of level of article content, 122–125  
note, 28  
organization of, 161–162  
search for articles and, 88  
writing strategies for presentation of, 162  
context, 59, 132  
controlled vocabulary, 97–98, 109  
cover card/page, 30  
credibility, 143, 152  
critical reading, 26  
cross-reference, 30–31  
cubing, 66–68  
D  
database  
description of, 75–76  
fields of, 77  
records of, 76–77  
search for articles with, 87  
date  
accuracy of source and, 128  
disagreement among sources and, 132
of information used in term paper, 52
develop, different, 132
deadlines, for assignment, 51
definitions, different, 132
delays, 21–22, 23
describe, in cubing technique, 66, 67
descriptive organizing pattern, 161
descriptive/informative term paper, 51
destination, topic as, 60
Dewey Decimal Classification system, 116
dictionary, 85, 164
digital resources. See electronic resources
diminishing returns, 166
discussion/conclusion, 124, 125
doing too little, 12–13
doing too much, 12–13
domain name, 137–138
due date, 20

Edinboro University of Pennsylvania, Baron-Forness Library
sample search for articles, 175–188
sample search for books, 171–175
editing, 166
electronic full-text, 81, 82
electronic resources
librarian knowledge about, 43, 44
locating articles, 117–118
locating materials, 115
search for articles, considerations before, 86–87
search tool interface challenges, 93–94
search tools for, 75–76
emotions, 6, 7
encyclopedia, 85
endnotes, 150
errors in reasoning, 133–135
ethical/legal issues
bibliography, 150–151
citation, 142
citation, elements of, 147–148
citation, reasons for, 142–143
citation, what to cite, 143
citation style, 148–150
importance of, 141
incorporating text, 144–147
intellectual property, 141–142
plagiarism, 142, 151–153
reflections on, 154–155
evaluation
agreement among sources and, 131–133
of level of article content, 122–125
of websites, 135–138
of what you read, 125–131
existence, myth of, 114
fallacy, 133–135
false cause, 134
fears, 15–16
feedback, 165, 167
field searching
author searching, 96–97
interface functionality and, 94
on Internet, 109
keyword searching vs., 94–98
overview of, 95–96
subject searching, 97–98
tips for, 96
fields, 77
filenames, 33
files, saving, 33
filters, 105, 186, 191
final draft, 12
focus, 18–19, 88
footnotes, 150
form
full-text, 81
length of term paper and, 53
library-based content, 82
nontextual information, 127
of research articles, 123–124
search for articles and, 88
of sources, 54–55
of term paper, 159, 164–165
web-based content, 82–83
freewriting, 64
full-text, 81, 87, 186

“Garbage In, Garbage Out” phrase, 113
general resources, 83
Google Scholar, 91, 191
Google search engine, 76, 170, 188–192
grading, 49–50, 152

www.alastore.ala.org
grammar, 138, 159–160
Guided Search, PILOT, 175

H
hasty generalization, 134–135
help
  asking for, 16–18
  asking for help with search, 187–188
  asking for help with term paper, 167
  librarian, choice of, 44–45
  research help from reference librarian, 43–44
highlighting, 27–28
host, of website, 136
how-to organizing pattern, 162
hypothesis, 69–70

I
ideas, 25–26
ignorance, appeal to, 134
ILL (interlibrary loan), 41–42, 92, 78–79
images, 53, 110–111
immediacy, myth of, 114
impact words, 101
index
  description of, 75–76
  research function of, 85
  search for articles with, 87, 88
index cards, 29–30, 31
inexperience, research delays from, 21–22
information desk, 41
information formats, 81–83
  See also format
information resources
  access issues, 77–78
  date of information used in term paper, 52
  difficulty in finding, 73
  librarian knowledge of available resources, 43–44
  reasons students should go to library, 38–39
  reflections on, 79
  search for articles, 175–188
  search for books, 171–175
  search for websites, 188–192
  search tools, anatomy of, 76–77
  search tools, types of, 75–76
  source materials, 73–75
  unavailable, 78–79
information resources, accessing/acquiring articles, considerations before search, 86–87
articles, searching for, 87–90
books/monographs, 84–85
depth of content, 83–85
information formats, 81–83
interlibrary loan, 92
reflections on, 92
  as second stage of research, 4–5
websites, 91
inherent value, 49–50
instruction, at academic library, 42
instructor
  asking for help from, 17
  asking for help/feedback from, 167
  assignment elements and, 50
  grading of assignment by, 49–50
  knowing when to ask for advice from, 12
  topic change, discussion with, 71, 111
intellectual property (IP), 141–142
intentional plagiarism, 151
interface, 3, 93–94
interlibrary loan (ILL), 41–42, 92, 78–79
Internet
  availability of information with, 37
  for finding articles, search tool vs., 86
  limitations of research with, 3–4
  locating e-versions of articles on, 118
  locating materials, 115
  search for websites, 188–192
  search results, 118–119
  search strategies for, 108–110
  websites, search engines for, 77
  See also Web (World Wide Web)
interpretations, different, 132
in-text citation, 147, 148
introduction
  description of, 11
  as element of term paper, 10
  in research article, 124
  use of different introductions in writing, 163
IP (intellectual property), 141–142

J
jargon
  glossary of unfamiliar terms, 122
  readability and, 125
  of subject-specific resources, 84
  virtual reference assistance and, 46
  writing at appropriate level, 164

www.alastore.ala.org
journal
differences among types of periodicals, 89–90
locating articles, 117–118
scholarly/academic information in, 56
See also periodical

K
keyword searching
as default search engine option, 91
field searching vs., 94–98
Internet searching by keyword only, 190
overview of, 95
search engine rankings and, 109
for search for articles, 178, 180–181
in search for websites, 188
search strategies, reflections on, 111–112
tips for, 96
trying different search terms/keywords, 100–104
with unified search tool, 108

L
language, 189–190
See also jargon; vocabulary
“last update” notification, 138
LC (Library of Congress) Classification scheme, 116
LCSH (Library of Congress Subject Headings), 98
learning, 1–2
legal issues. See ethical/legal issues
length, of term paper, 53
librarian
of academic library, 41–42
asking for help from, 17
choice of, 44–45
definition of, 42–43
knowledge of, 44
locating materials, 115–118
reasons students should go to library, 38–39
reference librarian, research help from, 43–44
reflections on, 46–47
topic selection, help with, 71
library
academic library, anatomy of, 41–42
access issues, identifying/addressing, 19
definition of, 37
history of, 37–38
interlibrary loan request, 92
library-based content, format of, 82
reasons students do not go to, 38
reasons students should go to, 38–39
reflections on, 46–47
types of, 39–41
virtual reference services, 45–46
website, access to indexes/other search tools on, 81
Library of Congress (LC) Classification scheme, 116
Library of Congress Subject Headings (LCSH), 98
library online catalog, 75, 171–175
limits, 105, 186, 191
links, 136
list of sources
citation style guide, 149–150
description of, 148
function of, 147
See also bibliography
literature review, 124

M
magazine, 89–90, 122–123
See also periodical
main ideas, 25–26
mapping, 65–66
menu, of topics, 61
methodology, 124
microforms, 82
MLA (Modern Language Association) style, 52, 148, 149
monograph
accessing/acquiring, 84–85
locating, 115–117
research function of, 85
strengths/weaknesses of, 74
motivation, for reading for research, 122
multiple resources, searching simultaneously, 107–108
myths, 114

N
name-calling, 134
noise words, 101–102
nonresearchable topics, 62–63, 72
nontextual information, 110–111
notes
  citation-specific notes, 30–31
  developing method for, 27
  highlighting vs., 27–28
  note-taking strategies, 29–30
  style for, 150
  types of, 28–29

O
  obligations, 22, 24
  online public access catalog (OPAC), 75
  open topic, 61
  OR, Boolean operator, 106–107
  organization, content, 136, 161–162
  outline, of sources, 49
  overwhelmed, feeling, 22

P
  page limit, 53, 166
  paper mills, 153
  paraphrasing
    example of, 146
    incorporating text with, 145
    reflections on, 154–155
    summarizing vs., 146–147
  patience, 99–100
  peer-reviewed publications, 57
  periodical
    differences among types of, 89–90
    locating articles, 117–118
    search for articles, 87–89
    search for articles, considerations before, 86–87
    strengths/weaknesses of, 74
  personal attack, 134
  personal note, 28
  perspective, 99, 104, 105
  photograph, search for, 110–111
  phrase searching, 107
  physical access, 78
  physical materials, 115
  PILOT (online library catalog), 170, 171–175
  plagiarism
    characteristics of, 151
    citation to avoid, 143
    definition of, 142
    reasons to avoid, 151–152
    term paper mills, 153
    plagiarism-detection software, 152, 153
    planning, 4, 19
    See also research preparation
  popular publications, 56
  popularity, appeal to, 134
  post hoc fallacy, 134
  predetermined topic, 61
  present tense, 163
  primary research, 8–9, 55, 123
  primary source, 8, 55
  print resources
    advantages/disadvantages of, 82
    information available only in, 3
    printed periodicals, shelving of, 117
    as search tools, 93
    See also books
  printing, 19
  problem/solution organizing pattern, 162
  process, research, 6–8
  pro/con organizing pattern, 161
  procrastination, 21
  professional credibility, 143
  proofreading, 159–160, 165
  protection of work, 167
  public library, 40
  publisher, of website, 136
  purpose statement
    function of, 68
    generation of for search, 169
    impact words, examining for, 101
    instructions for drafting, 68–69
    organization of content and, 161
    relevancy of source material for, 126
    weak, rewriting, 72
    in writing process, 160
    See also thesis statement

Q
  quality, 162–165
  quantity, of sources, 54
  questions, 43, 46
  quotation marks, 107, 179
  quoting
    example of, 146
    incorporating text with, 145
    reflections on, 154–155
    in term paper, instructions for, 164
INDEX
215

rank, search results, 118–119
readability, 125, 136
reading
  - article content, evaluation of level of, 122–125
  - challenges, 121–122
  - for comprehension, 26–27
  - critically, 26
  - disagreement among sources, 131–133
  - evaluation of what you read, 125–131
  - focus, maintaining during, 18
  - main ideas, grasping, 25–26
  - reflections on, 35, 139
  - for research, 121
  - skimming, 24–25
reasoning, errors in, 133–135
records, database, 76–77
red herring, 133
refereed publications, 57
reference desk, 41
reference librarian
  - at academic library, 41, 42
  - research help from, 43–44
  - research training of, 42–43
references, 11–12, 129
  - See also bibliography
reflections
  - on ethical/legal issues, 154–155
  - on information resources, 79
  - on information resources, accessing/acquiring, 92
  - on reading/evaluation, 139
  - on research, 14
  - on research preparation, 34–36
  - on search results, 119
  - on search strategies, 111–112
  - on topic, 71–72
  - on writing your paper, 168
relationship, with librarian, 44–45
relative value, 50
relevancy, 114, 126–127
reliability, 130–131
remote access, 19, 78
removable storage device, 19, 167
research
  - challenges of, xi
  - continued research after initial search, 192–194
  - defining, 1–2
  - doing too much/too little, 12–13
  - help from reference librarian, 43–44
  - Internet, reasons not to use exclusively, 3–4
  - letting topic guide research, 60
  - nonresearchable topics, 62–63
  - process, 6–8
  - process, delays in, 21–22
  - questions, 70
  - reading for, 121–122
  - reasons for doing research, 2–3
  - reflections on, 14
  - researchable topic, selection of, 61–62
  - research-as-foreign-language metaphor, xii
    - stages of, 4–5
  - term paper, completion of, 12
  - term paper, overview of, 8–12
  - topic, focusing around, 68–70
research articles, 122, 123–125
(Re)Search Cycle, 7–8
research paper, 8–9
research preparation
  - access issues, identifying/addressing, 19
  - computer fluency, 32–34
  - copy or print all sources, 31–32
  - focus, maintaining, 18–19
  - help, asking for, 16–18
  - need for, 15
  - notes, developing method for taking, 27–31
  - reading strategies, adopting new, 24–27
  - reflections on, 34–36
  - research time line, 22–24
  - skills for research, 15–16
  - stress, acknowledging/managing, 19–20
  - time management, 20–22
research time line, 22–24
research topic. See topic
research-as-foreign-language metaphor, xii
resources. See information resources
responsibility, 143
restricted access, 78
results/findings, 124
revision, of paper, 5
S

saving files, 33
scarcity, myth of, 114
scholarly articles, 123
scholarly publications, 56
school library, 40
search
for articles, 87–89
for articles, considerations before search, 86–87
information formats, 81–83
for websites, 91
search, sample
for articles, 175–188
for books, 171–175
continued research after initial search, 192–194
initial search terms, identification of, 170
next steps, 192
purpose statement, generation of, 169
search tools, identification of potential, 170–171
topic, selection of, 169
for websites, 188–192
search engines
advanced search options, use of, 109
advanced search options/Google Scholar, 91
for books/articles search, 77
description of, 76
learning how search engine works, 109
ranking results of, 190–191
for search for websites, 188–192
search results, 118–119
tips for, 110
trying different search engine, 191
search history, 108, 177, 182
search limits (filters), 105, 186, 191
search results
“Garbage In, Garbage Out” phrase, 113
locating articles, 117–118
locating books/monographs, 115–117
myths about results lists, 114
reflections on, 119
understanding, 113
web results, 118–119
search strategies
altering, 187
challenges of constructing effective, 93
interface challenges, 93–94
keyword vs. field searching, 94–98
librarian knowledge about, 44
nontextual information, locating, 110–111
outline of, 49
reflections on, 111–112
search history, 108
search syntax, 105–107
for searching Internet, 108–110
searching multiple resources simultaneously, 107–108
strategies for improving searches, 98–105
topic revision and, 111
search syntax, 99, 105–107
search terms
browsing source material for, 101
different terms search strategy, 99
identification of alternate spellings of, 102–103
identification of broader/narrower terms, 103–104
identification of initial, 170
identification of variables affecting, 104
list of related/alternate terms, 102
purpose statement, impact words in, 101
search for articles and, 187
search results, understanding, 118–119
starting with what you know, 100
tips for, 104
trying different search terms, 100–104
search tools
access issues, 77–78
anatomy of, 76–77
for articles, 87–89
for articles, considerations before search, 86–87
changing, 187
choice of, 81
generating effective searches with, 93
identification of potential, 170–171
interface challenges, 93–94
knowledge of, 3, 73
search for articles, 175–188
types of, 75–76
for websites, 91
secondary research, 8–9, 55
secondary sources, 8

216 INDEX

www.alastore.ala.org
INDEX 217

security, 167
self-recycling, 151
shelving, 115, 117
simultaneous searching, 107–108
skills
   for research, 15–16
   for writing your paper, 158–160
See also computing skills
skimming, 24, 25, 122
slippery slope argument, 134
sources
   acquiring information, 4–5
   audience for, 56–57
   browsing for search terms, 101
   citation information note, 28–29
   comparison of, 128–129
   considerations, overlooking, 53–54
   consulting multiple, 2
   continued research after initial search, 192–194
   copy or print all, 31–32
   depth of content, 83–84
   disagreement among, 131–133
   discrepancies among, addressing, 9–10
   discrepancies among, reasons for, 10
   evaluation of what you read, 125–131
   format of, for term paper, 54–55
   outline of, 49
   primary/secondary, 8–9
   quantity of, for term paper, 54
   reading/evaluating after initial search, 192
   record of each source of information, 141
   strengths/weaknesses of, 73–75
   text, incorporating, 144–147
   for topics, 63
   type of, 55
   use of number/variety of, 162
See also citations; information resources
special library, 40–41
spelling
   alternate spellings of search term, 102–103
   proofreading term paper, 159–160
   in search, 100
   on website, 138
   sponsored links, 191
   stages, of research, 4–5
straw man, 134
stress, 19–20, 158
students, library and, 38–39
subject searching
   overview of, 97–98
   in search for articles, 178–179
   in search for books, 173–174
   tips for, 98
subject specialist, 44
subject-specific resources, 84
summarizing
   example of, 146
   incorporating text with, 144
   paraphrasing vs., 146–147
   reflections on, 154–155
synonyms, 102
syntax, search, 99, 105–107
T
technology, 66–68
tense, present, 163
term paper
   assignment elements, 50–53
   assignments, reflections on, 57
   characteristics of, 9
   completion of, 12
   elements of, 10–12
   focus, maintaining, 18
   grading of, 49–50
   research paper vs., 8–9
   sources, reasons for discrepancies among, 10
   types of, 51–52
   what it is not, 9–10
See also assignment; research preparation; topic
term paper, writing
   activities of, 5
   asking for help/feedback, 167
   assignment, review of, 157
   knowledge of when you are done, 165–166
   protection of work, 167
   reflections on, 168
   revising your paper, 5
   skill set, examination of, 158–160
   writing anxiety, management of, 158
   writing process, 160–165
term paper mills, 153

www.alastore.ala.org
terms. See search terms
testimonial, 135
text, incorporating, 144–147
thesis statement
in body of term paper, 11
function of, 68
instructions for drafting, 68–69
keywords from, 111
in writing process, 160
See also purpose statement
time line, research, 4, 22–24, 35
time management, 20–22, 35
topic
articulation of, 4
brainstorming for ideas for, 64–68
changing, 71, 187
in context, 59
focusing research around, 68–70
identification of perspective on, 105
letting topic guide research, 60
methods for defining, 6
modification of, 193
new insights on after research, 192–193
nonresearchable topics, 62–63
picking your destination, 60
redefining, 7–8
reflections on, 71–72
relevancy of source material for, 126
revision of, 4–5, 111
search for additional information for, 193–194
selection of, for search, 169
selection of, methods for, 60–61
selection of researchable topic, 61–62
sources for, 63
uncertainty, accepting, 70
transitions, 163
truncation, 107
Turabian style, 148
typing, 100, 159

V
validity, 130–131, 143
variables, 104
verb variety, 163
video, search for, 110–111
virtual reference services, 41, 45–46
vocabulary
controlled vocabulary, 97–98, 109
reading problems from limited, 122
of research articles, 123
See also jargon

W
weaknesses, 15–16
Web (World Wide Web)
locating materials, 115
search results, 118–119
URLs, 137–138
web-based content, 82–83
web-based source, 75
See also Internet
web-based periodical, 87
websites
advanced search options, 91
advantages/disadvantages of
information from, 82–83
copying or printing, 32
evaluation of, 135–138
format of sources for term paper, 54–55
Google Scholar, 91
Google search engine for, 170
information resources, accessing/acquiring, 91
Library of Congress, 98
sample search for, 188–192
search engines for finding, 77
term paper mills, 153
URLs, 137–138
wildcard, 107
word-processing software, 160, 164–165, 168
works cited, 11–12
See also bibliography
writing. See term paper, writing
writing anxiety, 158

U
unavailable information resources, 78–79
uncertainty, 70
unified search tools, 107–108
Uniform Resource Locator (URL), 137–138
unintentional plagiarism, 151