the STUDENT'S SURVIVAL GUIDE to research

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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 shortcut, 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 comfort 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-language 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 working 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 practice 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.

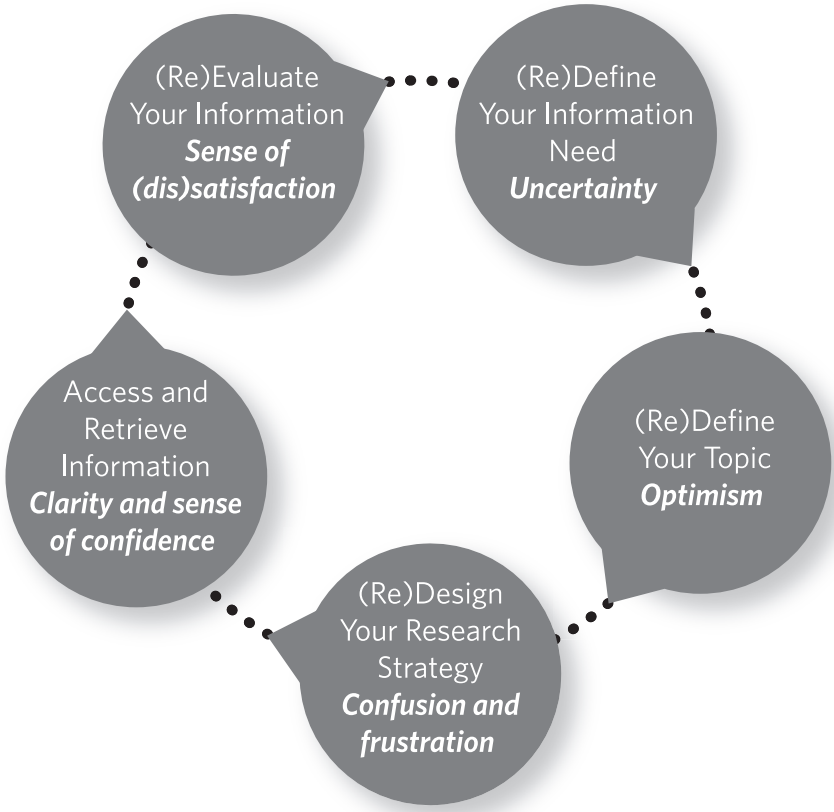
With that in mind, it is important to note that every researcher goes through similar stages and engages in similar activities throughout the research process. However, there is no perfect blueprint or single, right way to proceed through these stages and activities to ensure success. For example, some 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.

FIGURE 1.2

The (Re)Search Cycle



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 "*re*search" 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

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Information is outdated.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

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?

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