SECTION 3: PRACTICING STUDENT SUCCESS SKILLS
CHAPTER 14
LEARNING TO THINK CRITICALLY

In college, your teachers will likely talk about thinking and reading critically. It’s not just in college that these skills are important; top companies seek them as well. For example, Laszlo Bock, former Senior Vice President of People Operations at Google, said that one of the top four traits the company seeks is “general cognitive ability . . . Not just raw [intelligence] but the ability to absorb information.”¹ This ability to absorb information, and respond to it with action, is part of critical thinking. In response to a national survey of business leaders, 93% said that “a demonstrated capacity to think critically, communicate clearly, and solve complex problems is more important than [a candidate’s] undergraduate major.”² Another survey of 371 global business leaders found that next to creativity (#1), critical thinking (#2) would be the most valued workforce skill by 2020. The following chapters cover critical thinking and critical reading skills.

Critical thinking is the practice of taking an analytical, deep look at material, whether that material is a passage in a novel, a mathematical theorem, or a science lab practice. To think critically is to wrestle with something’s meaning and implications—in a sense, to hold it under a microscope for closer inspection. Knowing what it means to think critically doesn’t make the process easy, but with practice the process does get easier over time.

Here’s an example: in class, a teacher might talk about their policy on absences and might express a preference for a student to communicate openly about the reason for the absence. This teacher has likely spent time thinking about the policy and its ramifications for students, and a good teacher

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¹ https://www.fastcompany.com/3061237/the-skills-it-takes-to-get-hired-at-google-facebook-amazon-and-more

As you read this chapter, you will:

- Learn the definition of critical thinking
- Find real-world examples about the importance of critical thinking
- Apply critical thinking to everyday use

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will explain their reasoning and justification. When the teacher explains the policy and its implications to students, they are thinking critically about their teaching practices. If the students hear the policy and the discussion ends, they might not themselves think critically about the policy. Rather, they might take it at face value.

However, let’s say a student in the class wants to engage in a discussion of whether it is right for students to have to communicate openly about their absences. This student points out that students have a right to privacy; if they do not care if their absences are “excused,” why should they have to tell the teacher why they are absent? Or, this student might point out that there are many reasons for being absent that one might not want to disclose, such as a death in the family, an illness, or a family vacation. This student, in providing these examples and illustrations, is thinking critically about this teacher’s policy on absences.

An important note on critical thinking is that the word “critical” can sound negative, because of the definition of critical: “given to judging; esp. given to adverse or unfavorable criticism; fault-finding; censorious.”[^3] And in one of the examples used above, critical thinking is associated with asking a teacher stimulating and perhaps even challenging questions about their absence policy. However, when teachers ask you to think critically, they are not asking you to think judgmentally, negatively, or in a disrespectful way. Rather, they are drawing on other meanings of the word “critical,” such as “important,” “decisive,” and “crucial.” To think critically is to think in careful, measured, important ways about class material or practices, and you can be kind, respectful, and thoughtful as you think critically.

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**REFLECTION ACTIVITY**

In this activity, you are going to get to practice your critical thinking skills! Select a song that you really enjoy listening to and listen to it a couple times. Reflect on the following questions as you listen:

1. What is the message of the song?
2. What might be an alternative interpretation of the message?
3. Choose one word you think is most significant in the song. Why is this word the most significant for the song you chose?
Now that you’ve read this chapter, you should be able to:

✓ Define critical thinking
✓ Acknowledge that critical thinking is important in college and beyond
✓ Apply critical thinking to your life
As with any skill, the more a person practices good reading habits, and the more a person reads, the easier it is to understand challenging texts. What might not be obvious at first is that the way you interact with a text can have a significant impact on how well you understand it. This chapter emphasizes concrete reading strategies that will help you improve your critical reading skills, or the ability to think critically about something you read.

In college, you will encounter a variety of texts: scholarly texts, textbooks, literary texts, non-fiction, syllabi, writing assignments, lab reports, and more. We’ll focus here on scientific and social science writing, since this type of reading is expected in many courses at K-State and can be the hardest to understand. However, the skills discussed in this chapter are applicable to any sort of reading you’ll do in college and beyond. Take note on how you can apply these strategies to whatever type of reading you do for your major or future career.

In order to understand how to read academic or scholarly texts, meaning articles, books, or other publications produced by those who teach and produce research at a university, it is important to know why they are produced. The majority of scholarly texts are written by professors who are on what is called the “tenure track.” Tenure is a system that provides some measure of job security after approximately six years, during which time professors publish significant research and writing in their fields. Tenure requirements vary by institution, and it is difficult for professors to achieve tenure.

The vast majority of the knowledge that you encounter when surfing on Facebook or reading the news on your favorite application is research that is re-published by news
outlets after academics publish it in major journals. Journalists learn about this research and distill it in simpler, more accessible language for the public.

Why is this information important for you to know as you read scholarly texts? Because as a university student, you are joining your professors in scholarly conversation. You are expected to dive right into academic conversations and to read difficult texts that help you to understand the knowledge shared by professors in your chosen major or discipline. It can be helpful to think of this scholarly conversation as a current, like an oceanic current or a wave tunnel a surfer rides. The ocean’s current was there before you entered it and will remain after you’re gone. If you jump into a strong current, you fight it and may get overwhelmed by it. But when you’re an experienced swimmer, you learn how to work with the current, as a surfer learns to ride a wave tunnel. Scholarly conversations similarly existed before you entered them and will continue after you graduate, but you become a part of them when you enter college.

**Critical reading strategies**

Below are some reading strategies that will help you to make sense of this scholarly conversation.

**Read difficult texts twice**

Think about a movie you are very familiar with or that you’re attached to. How many times have you watched it? If you’ve watched your chosen film several times, you’ve likely experienced how much deeper your knowledge is of the movie with each viewing. You can probably quote the film and notice new details each time you watch it.

Reading is no different. You cannot expect to completely understand an article or text the first pass through. Even if reading comprehension is easy for you, the first time you read a text, you discern its ‘plot’ as you would a movie. With a second reading you notice other details, such as language choice, style, the author’s argument, etc. Giving yourself time to read challenging texts more than once is important.

**Mark up your texts**

It is much harder to understand or remember the information you’ve read without marking up your texts.

What should you mark? Especially when you are reading scholarly articles, it is important to note the rhetorical moves, or the written moves related to argumentation and persuasion. Many rhetorical moves are common across academic texts, and some vary from discipline to discipline. It’s a good practice to use the margin of your texts to leave yourself notes and comments that will help you study, discuss the texts in class, and easily find information.

Here are some common rhetorical moves authors make:

- **Gap in the Research:** Close to the start of the article, authors state the gap in the research their article or text is attempting to fill. Often, the gap is expressed with statements such as “while other scholars have written about x, my research does y.” Scholars, then, are expected to show what in their research is new or important. They identify what other scholars have said about a topic, thereby demonstrating their understanding and familiarity with the research in their field.
(their position in the scholarly current, in other words), and at the same time, they demonstrate what their research is contributing to this conversation. Next to each of these instances, in the margins of your text, you could write “gap.”

• **Thesis Statement**: Scholars also generally tell you the main point or argument they’re making; sometimes, this is expressed in a thesis statement near the start of the article or up to a few pages in. When you find this statement of the article’s main idea, write “argument” or “thesis” in the margins. A good way to double-check your sense of the main argument is to look to the conclusion, where the author will generally re-state the argument. Often, the thesis is easy to discern, as a writer might state, “in this paper we argue that . . .” Sometimes, the statement of the argument is not as clear.

• **The So-What**: Scholars identify the so-what of their research, why it matters and why people should read it. For example, a scholar might say that a research project on the impact of differences in American and Italian processing of wheat on rates of Celiac disease in both countries is important because it could lead to changes in American wheat processing that could lower the incidence of Celiac. When you encounter the author’s stated so-what(s), write “so-what” in the margins.

• **Literature Review**: Scholars in many science fields will include a literature review. This is a fancy way of describing a section in which the writer reviews scholarly articles in the field related to the topic at hand. For example, given a paper on Celiac disease, the writer will summarize the research in the field related to Celiac. This is part of how a researcher proves that they have done their homework and that they can be trusted to research the topic at hand. At the start of the literature review, write “lit review” in the margins.

• **Theoretical Framework**: Sometimes, a scholar will identify one or two other scholars whose work they are using as a theoretical framework. They might say, for instance, “in this paper we use Latour’s actor-network theory (ANT) to inform our reading of our campus’ science labs.” In this case, they are using ANT as a lens through which to observe or analyze a certain phenomenon (how campus science labs are structured or operated). A theoretical framework provides a way of investigating or understanding data, and each theoretical framework will likely cause writers to analyze and comprehend phenomena in unique and different ways. It is important to note, in the margins, when writers call out specific theories or thinkers.

• **Key Terms**: Scholars define key terms, and when you encounter these terms and definitions, note the term and write “def” in the margins. In the paragraph above, for instance, you could write “Def. theoretical framework” in the margins.

It is important to note that taking notes in the margins isn’t enough; you must also take notes on the material. What is the best way to take notes? Research demonstrates that handwritten notes lead to greater retention than taking notes digitally, even though doing the latter often makes it easier to file and retrieve notes.
When you finish reading an academic article, text, or textbook, it’s an important practice to re-state the main idea or argument in your own words. Write this argument on the first page of the article or at the top of your notes. Next, go through the article and note the important features you wrote in the margins—the thesis, the gap, the so-what, etc.

What else should you write in the margins and take notes on? Each time the author makes a claim, or an argument, it’s a good idea to write “claim” (or a shorthand such as “c”) in the margins and to highlight this claim. This is the support that the author is providing for the thesis. Some people call these claims “sub-arguments” or “sub-theses,” and often are the first lines of paragraphs, or topic sentences. These claims or arguments are the way that writers prove that their main argument or thesis is true. Writing down major claims or arguments will not only help to you retain the material, but will assist you during class discussions and help you when you write papers on the material.

Beyond this, you can highlight, circle, or mark ideas that are important to you, that frustrate you, that are interesting, or that you think are important to your instructor. Let’s say you’re supposed to write a response to a literary text, and you’re not sure what you want to write about. On page three of the text you’re reading, you see that the author is writing about issues related to gender, and this interests you. You might highlight the material and write “gender” in the margins. At each new reference to issues of gender, you do the same; in this way, you build a visible index related to that topic. When you start writing your paper, you can quickly move through the article, noting each time gender came up. You can also include these references to gender in your notes; don’t forget to include a page number and some indication of where you found the quote (for example, page 4, third paragraph).

Often, because of financial reasons, you’ll want to check out a library book instead of purchasing it. Students often ask about strategies for marking up library books or rentals that they have to give back. Taking notes in a notebook or journal is one good method. Another is to buy large packs of sticky notes and cut them down to smaller sizes (it’s cheaper to do this than to purchase small sticky notes). You can place a note next to ideas you want to mark and then write notes on them. Then, if you want to keep important sections, you can photocopy the material and your sticky notes will be included. Don’t forget to remove the sticky notes when you return the book so that the library or next reader doesn’t have to do this work for you!

When reading an academic text, it’s always a good idea to note the author’s name, the year the article was published, and the journal it was published in. Why does year matter? The sciences value currency—ideas that were published recently, typically in the past five years. Sometimes, your professors will assign older, foundational works. These could include articles that have historically been important to the field or that perform some groundwork that current research builds on. You won’t be able to place an article in the scholarly current without knowing when it was published.

Why does it matter which journal published the research? Sometimes it doesn’t; good research is published in a field’s top journals and also in journals that are not the most prominent in a field. But when an article is published in a field’s top journal, say Nature if you’re a biologist or The Journal of the American Medical Association if you’re a doctor, you know that the top experts in the field have consulted on the quality of that research.
You’ll likely have other questions about reading and marking up strategies as you proceed through your K-State First course or other classes. Ask your instructor and classmates, as they likely have developed their own strategies that will help you to become a strong reader and processor of complex texts.

**REFLECTION ACTIVITY**

After learning strategies for engaging with your reading assignments, now think about your process for reading this chapter, using the following questions:

1. What did you do to engage with the chapter? Did you take notes? Write down key phrases? Conduct research on topics you didn’t understand?

2. Based upon what you did or did not do, how might you improve your ability to read critically?

Now that you’ve read this chapter, you should be able to:

- Identify and understand what makes a text scholarly
- Utilize several strategies for reading critically
Writing for college-level courses is a common cause of nervousness. When we write, we often share our innermost thoughts, feelings, and opinions with others. And when we write for professors, there’s an added dimension—evaluation—which can make us even more hesitant to share, even when it’s requested or even demanded. This chapter explores ideas to help make writing less scary, or at least to give you some foundational tools to help you more confidently navigate the writing that’s requested of you at the university.

There is a discipline called Writing Studies (also known as Composition and Rhetoric) that studies all aspects of the writing process: what writing is, the different processes and materials writers use to write, how writing should be taught, how literacy (reading/writing) skills are developed in college, how socioeconomics impact adolescent and adult literacy development, how people persuade each other through writing, and basically any other topic you can think of that relates to writing. Writing Studies, as a field, has come to some agreement on best practices in writing that we’ll share with you in this chapter. Many of these ideas are based on two recently published books that gather scholarship on this topic from the field’s most prominent or emergent scholars: Naming What We Know: Threshold Concepts of Writing Studies and Bad Ideas about Writing.

As you read this chapter, you will:

- Consider your current writing practices and how they affect your writing
- Learn about linear versus recursive forms of writing
- Understand how audience and context shape your writing
Writing is a practice you develop over time

Whether you consider yourself a writer or not, you become one when you write for class. Whether you’re a developing writer or a seasoned one, it’s important to cultivate an effective writing practice, one that assists rather than thwarts your productivity. Many students have the misconception that they are either a writer or they’re not; there’s no in-between. What Writing Studies knows through more than a century of research is that this idea is simply not true. Writing is a skill that is practiced over time, and even those who think they are terrible can develop a positive practice by dedicating time and attention to writing. Malcolm Gladwell says that it takes 10,000 hours to become an expert at something (being an athlete, a musician, or an accountant, for example). A professional musician spends ten thousand hours plus practicing at their instrument. For some reason, people find it difficult to apply this principle to writing, but frankly, it’s the same: if you put in the hours, your writing will improve, and there is no professional writer who has not honed their practice over time.

Throughout this semester, think about your writing practice while you produce every piece of writing (even emails!). When you get a satisfying grade, think about what habits contributed to your success. When you get an unsatisfying grade, think about what habits you might change to increase your success on the next project. Sometimes, we do well when our practices are bad, but one thing is certainly true: as writing projects and tasks get more complicated, you will be less and less able to produce successful, meaningful writing if your practices and habits are bad.
Writing is a process
A common myth about the writing process is that it looks like this:

BRAINSTORMING/PREWRITING ► DRAFTING ► REVISING ► PUBLISHING

What’s wrong with this linear depiction of writing? Through research, scholars have come to understand that writing is not linear, but recursive. This means that writing doesn’t happen in neat stages as suggested above. Rather, writers revise while they draft, brainstorm while they revise, and revise at the beginning. “Publishing” may seem like the natural end of a process, but as writers know, when they submit writing to publishers, revisions are requested, often sending them back to brainstorming and other stages.

Writing processes look different for all writers. Some writers talk about their process as vomiting onto the page. They don’t censor themselves much in the drafting process. Other writers talk about reading an assignment sheet and composing in their head for weeks before they sit down to write; when they write, their ideas spill out at once, and they spend a lot of time later organizing, adding, deleting, and revising. These examples illustrate that there are many processes writers follow, and that different “stages” of the writing process are recursive, in that they overlap and press in on each other throughout a writing project.

Writing is social and collaborative
It’s easy to understand why many people have the idea that writing is solitary, the product of one individual mind. The image of a genius man (think Hemingway) pounding away at a typewriter in a garret is so pervasive in our culture that it is hard to escape this idea. In reality, writing is both social, in that our ideas are based on the world and culture around us, and collaborative, in that along the way to a piece of writing, we share ideas, talk with friends, read texts that influence our thinking, and are affected in ways we aren’t even conscious of by many other sources.

To share a related example, think about how you communicate when talking with friends. The words you use are likely different in significant ways to the one you use with your family or with faculty members. Your writing style develops a distinct communication style, too, that can vary based on the context in which you are writing.

Before class, find a classmate, friend, roommate, family member, etc.. Together, discuss the features of your communication and writing styles that are unique to the geographic location in which you grew up, to your family, to your friends, to your school, and so on. If you’re not sure what to talk about, consider:

1. Are there any unique words or expressions that you and your friend group use? What about you and your family members?
2. Do you hide certain expressions or words when around family?
3. How would you describe the difference between how you speak and how you write?
Recognizing that writing is social and collaborative is important to your writing practice. It’s critical for you to share your ideas with others in the early stages, to ask questions when you don’t understand an assignment or material, and to get feedback on your writing (from the Writing Center at K-State, from instructors, and from friends).

The social and collaborative nature of writing can have some friction with another important concept: academic honesty. We have discussed academic honesty earlier in this textbook, but we’d like to remind you of a good policy: “When in doubt, ask.” If you aren’t sure what constitutes unauthorized aid, talk with your instructor about it. They likely do not want you to take a midterm exam to the Writing Center, for example, as you’re supposed to be the sole author of that document, but some faculty make exceptions!

**Understand your audience**

If you are taking expository writing, there’s a good chance you’ve learned about the rhetorical triangle. Rhetoric is the art of persuasion; rhetorical in this case means involving the persuasive act. The rhetorical triangle helps us visualize that every time you communicate, in writing or verbally, you (one corner of the triangle) are sending a message (another corner) to an audience (the third corner). In the chart we’ve included below, you’ll see that this triangle is embedded in a context. This means that when you write, there are several factors that play into how you shape your message.

Let’s break this down through the example of an email, since you’ll be writing a lot of those both at K-State and in your future career. When you send an email, you follow certain rules (that’s the genre part of the image). For example, as you’ve learned in Chapter 3, each email should include a greeting, a body, and a closing. But the language or style you use to construct emails shifts depending on whether you’re sending to a friend, your family, or an instructor. You will tailor your writing to the person receiving your message.
One last consideration about audience: When you are writing for class, it is tempting to imagine that your only reader is your professor and that there’s no broader audience for your work. After all, you are generally submitting your work for a grade. However, imagining this sole audience is a problem for your writing. Yes, it’s true that it’s important to read an assignment sheet and tailor your writing to the assignment you’ve been given. Through your writing assignments, whether they are lab reports or literary analyses, your instructors are communicating important customs of your field of study and the associated writing type. By practicing, you are becoming knowledgeable in those genres as well.

However, writing should also 1) be meaningful to you and 2) be pursued as if there is an audience beyond your instructor who might read it. Regarding the latter, this is more possible than you think. Instructors often submit their students’ work for department, university, national, and international awards and scholarships (or encourage students to submit their work). In addition, undergraduate and graduate programs, campus organizations, internships and externships, fellowships, and jobs often request to see writing you’ve produced for a course as part of the application process. For these reasons, all of your projects should be written imagining this future audience.

Writing should also be important to you. Class writing assignments can sometimes feel contrived, silly, designed to meet a class outcome, and even irrelevant. If you feel this way about a writing assignment, you may consider respectfully talking with your professor. Ask questions in class about the assignment’s goals or purpose so that you can better understand why you’re writing the assignment. Professors may also be open to negotiating the terms of an assignment so that you can write on an alternative topic that is meaningful and relevant to you.

In the case of the lab report, it’s likely not possible to provide an alternative assignment. However, asking the professor why lab reports are critical and how relevant they are in the professor’s life or in the workplace will help you to understand the importance in the classroom. In the case of the literary analysis or history paper, your professor wants to read exciting, passionate, well-crafted work and will likely be thrilled that you took the time to come to their office and find a way to make the assignment meet both your goals and the class expectations.

The most important skill to be gained in talking with your professor is advocating for yourself in college (and beyond). It can feel scary, but the ability to explain your needs and thoughts to an instructor in order to be more productive and make assignments or projects meaningful is a critical skill to learn. Self-advocacy, as discussed in Chapter 8, will help you navigate your college writing assignments and negotiate the many difficult situations life will throw your way. Advocating for yourself respectfully can help you refute a wrong fee charged by your phone or utility company, approach a boss who promised you a raise and didn’t deliver, leave a great impression with the Dean of Admissions who makes scholarship recommendations or when you’re having a conflict with a roommate and you need to achieve a desired outcome—fast.
Now that you’ve read this chapter, you should be able to:

- Assess your current writing practices and identify potential obstacles
- See recursive writing emerge in your writing process
- Shape your writing for the intended audience within a given context
CHAPTER 17
REVISING YOUR WRITING

As you read this chapter, you will:

✓ Discover the difference between lower-order and higher-order concerns
✓ Find helpful hints for when to prioritize lower- and higher-order concerns
✓ Explore the recursive nature of revisions and how to use them to make you an experienced writer

HOCs and LOCs
Some of your professors, in their instruction, on their assignment sheets, and in their grading are going to focus on lower-order concerns, or LOCs. LOCs include typos, minor grammatical mistakes, and other surface-level errors that generally do not interfere with understanding a writer’s meaning. Higher-order concerns (HOCs), such as meeting the assignment or genre requirements, organization, paragraphing, voice, argumentation, and overall writing effectiveness often suffer because of the focus on LOCs.

We have all been conditioned by the grammatical drills that were likely impressed upon us in grade school. Because of this practice, many of us have the impression that LOCs are the most important part of writing. Yet over 100 years of research has demonstrated that humans, as long as they are around other speaking humans, will naturally acquire both language and the grammar of the language they’re immersed in by early adolescence, around the age of 12 or 13.

One example of this phenomenon is from a well-known author on this topic, Patrick Hartwell. Hartwell asserts that most seven-year-olds, without the benefit of grammar drills and without knowing the accompanying rule (there is a rule!), can put the following words in their expected order according to English grammar: Four girls the French young.

As you were just able to do in your head, the expected order is: The Four Young French Girls.

Without looking up the rule, can you state it? Most of us are not able to. This is because children learn grammar through trial and error.
at a very young age, and they don’t need drills or rules to do it.

The point here is that some professors and employers will read typos and other surface-level errors as signs of lack of attention or care. However, the research shows that such error-production is not only natural, and typical of faculty writing too, but is also common when writing tasks are hard and when working memory is challenged by a stressful, new, or challenging assignment.

While surface-level errors are distracting or noticeable, it’s far more important that your writing is well-articulated, well-argued, and well-organized. The rule in Writing Studies is that instructors should focus on LOCs over HOCs only when meaning is impaired or when they cannot understand the intentions or ideas in a piece of work.

Many students may feel the frustration of having projects returned with an emphasis on LOCs when what they want is to know how to better revise according to HOCs. This situation can be particularly frustrating for international students, who are eloquent in their native languages and often come to the university speaking three or more languages. These students struggle to learn some principles of English (such as article use) that are known to be some of the hardest of any language. Experts say it takes about seven years, with intensive study and fastidious reading and interacting with texts, for language learners to acquire a new language, and rules such as article use will continue to frustrate language learners beyond those seven years.

For that reason, emphasizing those rules through grammar drills or focusing on such rules at the expense of HOCs is detrimental to your writing practice. These techniques have been widely shown to be ineffective for learning.

What does this all mean for you? Typos and other grammatical errors are important. However, we need to determine when to prioritize the attention to this part of the writing and revision process (we will cover revision in the next section).

In order to make the most of your writing process, avoid getting bogged down in the LOCs early in the process. Try as hard as you can to stay focused on HOCs. Here’s why: let’s say you give a friend a paper to give you feedback, and they give you HOCs to work on and also correct all of your typos. A good writer will then revise the paper, attending to the LOCs. Then, one or two drafts later, they’ll write many of those typos or errors back into the paper. This makes your friend’s focus on LOCs less helpful.

The best thing to do is to take your work to the Writing Center, read it out loud to yourself, and get feedback on HOCs from friends. Every writer needs a reader who’s willing to assist with the very final draft. When you think the content is ready to turn in, ask a friend to help with LOCs and revise accordingly.

**Revision**

Research in the field of Writing Studies has demonstrated that revision is more difficult for inexperienced writers. This difficulty is multi-faceted: instructors and inexperienced writers often do not share the same terminology regarding writing (What is “grammar” or “flow,” for instance?). What’s natural about revision to instructors is often not for inexperienced writers, and therefore it’s hard for
instructors to communicate expectations about writing in ways that are understandable to students; and because experience with writing is what makes experienced writers able to understand how to develop a text effectively. The research demonstrates that inexperienced writers will often focus on LOCs, such as fixing typos and word choice, while experienced writers are able to focus on HOCs such as developing their ideas or argumentation in order to answer reader questions, or re-organizing a paper so that readers’ needs are met better.

Inexperienced writers may also be confused about how to prioritize different instructor feedback and to know which comments are more or less important. For example, if an instructor highlights 30 typos and leaves 2 comments about paragraph organization, the student might get the message that fixing the typos takes priority and is more significant, since the instructor spent the most time highlighting those and they take up more visual space. In reality, the organization is likely the more important concern (unless the 30 typos interfere with the instructor’s ability to understand the student’s meaning).

As mentioned earlier, it is important to prioritize when revisions should take place. The linear model (brainstorm/pre-write, draft, revise, publish) makes it seem like revision should take place only after drafting and that it only happens once. As the research shows and as we explored last chapter, the writing process is recursive, not linear. After you brainstorm, you might take your project to the Writing Center or to your instructor’s office to talk through your ideas, and then you might revise after those meetings. After you write a first draft, that’s a good time to revise again!

**Concluding thoughts on writing**

As K-State English professor Abby Knoblauch says, “There’s no one way to write well.” This is a conclusion shared by most Writing Studies scholars. Through this chapter, we hope we’ve emphasized this idea, as well as debunked some common myths about writing. Instead, you should now know:

- Writing is a practice that can be developed over time;
- The writing process is recursive;
- Writing is a collaborative process;
- Your instructor isn’t your only audience;
- You should emphasize HOCs over LOCs in the revision process and
- Revision is recursive and often difficult (but you can do it!).

In the Additional Resources section of this textbook, you will find Additional Resources for K-State Writers. There, you can find some information about writing resources that will help you throughout your K-State studies.
REFLECTION ACTIVITY

Now that you’ve read two chapters on writing, think back to your initial reflection on writing advice.

1. What advice was most helpful to your development as a writer?
2. What advice would you give to a friend about writing?

Now that you’ve read this chapter, you should be able to:

- Define the difference between LOCs and HOCs
- Decide when to focus on each category of order of concern
- Develop your writing through a recursive, rather than linear, form of revision
College research assignments may differ from what you have done before. In college, just googling information won’t be adequate for research assignments, because Google does not always provide the most accurate or relevant information. As a college student, you will need to develop research skills to help you navigate research assignments and the vast amount of information in the world. As such, this chapter will guide you through research strategies to help you be successful.

**The research process**

The research process, just like the writing process, is recursive, as we learned in Chapter 16. This process means that you won’t move smoothly from one step to the next. Instead, you will likely return to earlier steps as you progress before moving on to the next step. Additionally, different research projects will require different types of research. This chapter focuses on library research, rather than experimental research. However, there are many online resources that you can use when engaging in experimental research, many of which can be found on university websites. K-State’s Research page, for example, provides information about undergraduate research opportunities, campus resources available, the importance of research compliance, and much more.

**Select topic and research background information**

The first step in research is to pick a general topic. To do this, think about a topic that affects you personally, that interests you, or that you have heard about in the news. It is helpful to choose a topic that interests you, as you will enjoy the research project more and are more likely to be successful. Additionally, it is important to remember that your topic

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will be tied to the objectives of the assignment, so try to balance your interests with the assignment requirements.

Once you have chosen a general topic, you will want to conduct some background information searches to help you narrow your topic. If you are already well-informed on your general topic, you might skip to the next step. However, if you need to do some research to find background information, try browsing your textbook, online searches, or read recent newspaper articles.  

**Develop and narrow topic**

To narrow your topic, think about issues surrounding your general topic or consider a consequence-based question, such as “What are the effects of the HIV/AIDS epidemic on minority populations in the United States?” Another way to narrow your topic would be to create a concept map, like the one below. You can also ask a librarian for help or visit the Writing Center on campus.

One way to see if your topic is narrow enough is to fill in the blanks of the following statement:  

I am researching ______________________ (topic) because I want to find out __________________ (issue/question) in order to __________________ (application: this is the “so what” question—or why does this information matter?)

Using the HIV/AIDS topic above as an example, your topic statement might look as follows:

I am researching the impact of the HIV/AIDS epidemic on minority populations in the United States because I want to find out how minority populations are impacted differently from white, upper-class populations in order to propose ways to combat the additional challenges minority populations face.

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6 “Step-by-Step.”; “The 7 Steps.”
Once you have narrowed your topic, you will likely begin researching. Here are three common problems you might encounter while researching:

- Too much information: If there is too much information for you to sift through, your topic is likely too broad and you may need to narrow it even further.
- Not enough information: If you can’t find any information on your topic, or you can’t find enough, your topic is likely too narrow and you might need to broaden the scope of your project.
- Many results, but nothing in library databases: If this happens, then your topic is likely too new and there hasn’t been time for people to develop scholarly sources on the topic. In this case, you may want to find a new focus for your research or explore alternative methods of presenting your information.

Find research materials
Finding sources can be easy when you know where and how to look. The first thing to keep in mind is the type of research you’re conducting. Some research projects will require less scholarly sources, in which case newspaper articles may be appropriate. Some research projects will require online web pages, personal interviews, company mission statements, or a variety of other sources. Other projects will require you to utilize only scholarly sources. If you aren’t sure which type of sources you need, ask your professor.

For scholarly research, you can conduct searches in a variety of ways. Google Scholar may provide sources you won’t find in other databases. Additionally, the library’s website has a catalogue search function and access to numerous databases. If you select your subject area, the library’s website will provide the different databases that will likely be useful to you.

For example, if you are conducting research for a biology course, and you select the subject “biology,” the library’s website will provide sixteen different databases that you may find useful. Each database will have a brief description, so that you can consider which databases will be most useful for your needs. Try a number of different databases, as you will find different results with each one.

If you find an article or a book that you would like to use that the library does not have access to, you can request it through interlibrary loan. When you request an article or book through interlibrary loan, the K-State Library will reach out to other libraries to find a copy of the item you request. That item will be delivered to you either electronically or via mail. Any texts delivered via mail will be available for pick up at Hale Library’s Help Desk. An electronic article or book chapter is usually sent within 2-5 days, but often sooner. Any print sources that need to be shipped usually arrive in 3-10 days.

To search, come up with a list of keywords. Take your topic and break it into different concepts. What are the main ideas of your topic? Then, for each concept, create a list of synonyms. On the next page is an example of a keyword chart that you could use for searching.

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7 “The 7 Steps.”
8 Ibid.
**Research Question:** What is the impact of the HIV/AIDS epidemic on minority populations?

<table>
<thead>
<tr>
<th>Keyword One</th>
<th>Keyword Two</th>
<th>Keyword Three</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HIV/AIDS</strong></td>
<td><strong>Impact</strong></td>
<td><strong>Minority Populations</strong></td>
</tr>
<tr>
<td>• HIV</td>
<td>• Impact</td>
<td>• Minority Populations</td>
</tr>
<tr>
<td>• AIDS</td>
<td>• Effects</td>
<td>• African Americans</td>
</tr>
<tr>
<td>• Sexually transmitted diseases</td>
<td>• Results</td>
<td>• Hispanics</td>
</tr>
<tr>
<td>• Sexually transmitted infections</td>
<td>• Consequences</td>
<td>• Asian Americans</td>
</tr>
<tr>
<td>• STDs</td>
<td></td>
<td>• Native Americans</td>
</tr>
<tr>
<td>• STIs</td>
<td></td>
<td>• Minorities</td>
</tr>
</tbody>
</table>

Use quotation marks around words to get results with the same exact phrasing. Use an asterisk (*) to utilize truncation. Truncation means “to shorten by cutting off a part of” or “to cut short” and allows you to search for multiple words that start with the same letters, but end differently, rather than having to search the words separately. For example, a search of child* would provide results for childhood, children, and any other words that begin with child.

Boolean phrase searches “allow you to combine words and phrases using the words AND, OR, or NOT (known as Boolean operators) to limit, broaden, or define your search.” Using “AND” only presents results that have both terms. Using “OR” will provide results with either of the terms. Using “NOT” will remove results that include the second term.

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9 Dictionary.com
11 Ibid.
In addition to online sources, print sources can provide diversity and depth to your research. Books can provide more detailed information on a topic than an article can. Additionally, books have extensive bibliographies that can provide more sources for your research. Changing your Boolean operators can provide a wide variety of results. Try some out to see how they can vary. Using your research question, create a short list of key words. Combine these key words in various ways using Boolean operators, to see how the results may vary. For example, some key words for the research question “What is the impact of violent television on teenagers?” include “violence” and “television.” For this activity, you might try searching “violence” AND “television.” Then you might try “violence” OR “television.” Finally, you could search “violence on television.” Once you’ve explored the usage of Boolean operators, answer the following questions:

1. How did the Boolean operators affect your search?
2. How might they limit, or broaden, your research?

In addition to online sources, print sources can provide diversity and depth to your research. Books can provide more detailed information on a topic than an article can. Additionally, books have extensive bibliographies that can provide more sources for your research. The orange “cited by” button on the Library’s search engine will show you where the source has been previously cited, which may help you find more recent information on the topic. Some sources will also have an orange “citations” button, which will show you what sources that article has cited. The screen shot below illustrates where to find these buttons.

12 “Step-by-Step.”
Additionally, the library allows you to put books on hold, so you don’t have to search the stacks yourself. To place a hold, click on the “Find it at the Library” tab. Under the tab, there should be an option to click “Request Retrieval,” as noted in the screenshot below.

Evaluate credibility
Once you have found sources, evaluate their credibility to make sure that the source will work for your research. Evaluating source credibility not only helps to ensure that your sources will meet the requirements of the assignment, but also that your source material is accurate and relevant to your topic. Below are the Big 5 criteria\(^\text{13}\) to help you evaluate your sources.

- **Authority:** What are the author’s credentials? Someone who has a Ph.D. in the topic will have more authority than someone who wrote an opinion piece in the newspaper and does not have a degree in the subject area.
- **Accuracy:** Does the author cite their sources? If they don’t cite their sources, the article may not be credible. If they do cite their sources, where are they getting their information? Is it from other credible sources?
- **Objectivity:** What is the author’s purpose in writing? If the author is writing to persuade, the piece may be biased. While all sources have some sort of bias attached, those that are attempting to persuade will likely have a more distinct bias.Depending on your research goals, a source that is more informative rather than persuasive might be more useful.
- **Coverage:** Is the source information thorough? Are there topics that the source seems to neglect? It is also important to establish whether or not the source information is supported by evidence. If the author makes claims with no evidence, the information may not be accurate.
- **Currency:** How recent is this information? A source that is over twenty years old may not be relevant anymore. Unless told otherwise, it is generally good practice to only use sources that were published within the last ten years. However, there are some exceptions to this rule. A pivotal research study, for example, despite having been published more than ten years prior, may be necessary for your work.

Organizing and managing your sources
There are a number of different types of sources that are useful for different types of research. The following links provide some useful summaries on the different types of sources you might encounter: Purdue Owl, SUNY Empire State College, and New Mexico State University.

It is a good idea to keep all your sources in one place using a citation manager. A citation manager can help you to keep track of your sources and can make it easier to cite them when you begin writing. K-State has access to RefWorks, where you can create an account for free and continue to use it after you graduate. While there are other citation managers available, they have many of the same functions. Other citation managers you might consider using are Endnote, Zotero, and Mendeley.

If you don’t use a citation manager, it can be useful to create all of your citations before writing. For citation guidelines for APA, MLA, and Chicago, you can look at the Purdue Owl website. The K-State Library also has links to various style guides.

Group research
When conducting group research, there are things you can do to help your group be successful, such as delegating roles and communicating effectively. For example, if your topic has multiple sub-points, you could assign each group member a sub-point to research. Try to let each member offer what talents, interests, and knowledge they can bring to the group. People are more likely to follow through if they have a role they choose. In Chapter 7, you learned about your top five Strengths. You can use these Strengths to help each member realize where they may be most effective, to help maximize your group’s productivity.

Also, avoid assigning roles that are based off of timelines. Assigning all the research to one group member and all of the writing to another isn’t an effective distribution of work. The purpose of group projects is to help you manage the work more effectively, and simply breaking the work up chronologically will not effectively solve this problem.

In addition to assigning roles, your group may want to have weekly meetings. At these meetings, discuss what has been accomplished and what still needs to be done. This can help keep group members accountable while also keeping the project on track. Encourage your group to set your next...
meeting at the conclusion of the current one, with each member leaving with a specific set of goals to accomplish in the meantime.

Most importantly, make sure that you communicate. Lack of communication is one of the biggest reasons group projects fail. You may want to exchange phone numbers or set up a GroupMe, so you can communicate more easily than with email. In addition to these suggestions, the general research strategies listed below can be utilized or adapted for the group work setting.

Now that you’ve read this chapter, you should be able to:

- Develop research topics and find appropriate sources
- Coordinate group projects effectively
You will likely have to present your research many times throughout college. To help you become more comfortable with presenting, this chapter will provide strategies for creating an effective presentation and for the presentation itself. With these strategies and suggestions, you will have the tools necessary to create a successful presentation and to fight potential presentation nerves.

**Creating effective PowerPoint presentations**

How many times have you almost fallen asleep during a PowerPoint presentation? It is important to carefully construct the PowerPoint to engage your audience. While the following guidelines are merely suggestions, they should help you prepare a PowerPoint that keeps your audience engaged, effectively delivers the information, and is easy for viewers to understand.

**Determine objectives**

Before creating your PowerPoint, have some objectives in mind. What do you want the audience to take away from your presentation? Consider what information the audience may already have, so you don’t waste time explaining topics they already know. Key points that were introduced during the presentation and reviewed in a summary statement can help your audience remember your main ideas.

Avoid stock templates and use few colors

Avoid using the stock templates that PowerPoint provides as they are overused. Instead, think about what kind of color scheme or design would enhance your

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presentation’s main point. Create the first slide and save it as a template that you can use throughout. Using lots of colors can be distracting, so consider choosing 2-3 colors.\(^{17}\) If the template looks like it might be distracting, try using fewer colors.

Researchers have even explored which colors work best for different types of presentations. For example, the color blue is calming and conveys a sense of trust. Blue backgrounds are often used in professional or business settings. You can find more information about how to use colors in your PowerPoints from [Presentation Process](https://www.usnews.com/education/blogs/professors-guide/2010/02/24/15-strategies-for-giving-oral-presentations) and [Think Outside the Slide](https://venngage.com/blog/presentation-ideas/).

**Text, size, and color**
The text that you use should be easy to read for all audience members. Use a sans serif font, such as Arial or Helvetica, as they are easier to read.\(^{18}\) Make sure that the font is large enough so that people at the back of the room can read the text. At a minimum, use 18pt. font for text and 34pt. font for the title.\(^{19}\) There needs to be enough color contrast between the text and the background.\(^{20}\) If you find that the text is hard to read from a distance, then you may need to change the color of the text. These strategies for text will ensure that your audience, even those sitting in the back, can easily read your slides.

**Content**
When preparing the content for your PowerPoint, lead with ideas. Tell your audience what matters and give supporting information to back it up. Following are some suggestions for how to organize the content of your PowerPoint so that the audience can easily digest your information.

Reading directly from your slides prevents audience members from engaging with you and your presentation.\(^{21}\) Having too many words on a slide causes audience to focus on reading, instead of what you are saying. Try to focus on 2-3 main points overall, which will make it easier for audiences to remember your message.\(^{22}\) These main points can then be broken down into subpoints. If you are having a hard time narrowing your focus to a few main points, talk it out with a friend or visit the [Writing Center](https://www.usnews.com/education/blogs/professors-guide/2010/02/24/15-strategies-for-giving-oral-presentations).

Put only one main idea on each slide.\(^{23}\) This will make the information more easily digestible. Try to avoid using bullet points, as bullet points can make it easy to put too many ideas onto one slide.\(^{24}\) If you want to use bullet points, try to keep them to a minimum. Recommendations for text length vary, from 6-10 words per slide\(^ {25}\) to no more than six lines of text\(^ {26}\) to no more than thirty words. Regardless of this variation, check that your slides are not overwhelmed with information and that you are sticking to the main point. Asking a friend what they think can help you decide how much is too much to include on a slide.

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18 French, “11 Design Tips.”; “Presentation Design 101.”
20 French, “11 Design Tips.”
21 Jacobs and Hyman, “15 Strategies.”
22 Ibid.
25 “Presentation Design 101.”
26 French, “11 Design Tips.”
It is best practice to have notes with you as a reminder of what you want to say. You can use notecards or the PowerPoint speaker note function. During the presentation, the speaker note function will let you, but not the audience, see the notes that you created. This can be a nice way to have notes for the presentation while keeping your hands free.

Photos, graphs, and images
Instead of using stock photography, which is overused and often looks staged, try finding photos from Creative Commons. Use high-resolution images when possible, as they will look much better when enlarged on the screen for the presentation. No matter what kind of image or photo you use, make sure that it directly relates to your topic, so that it enhances your message.

Keep any charts or graphs simple, as they will be easier for viewers to read and understand. Avoid overwhelming people with too many numbers or charts. A multitude of numbers can be hard to visualize. If you have a lot of data, put a story with the numbers to make the information more digestible. Finally, only use one image, chart, or photo per slide, so your slides are easy to follow.

Use handouts
While PowerPoint is an incredibly useful tool for presentations, it does not guarantee that people will remember what they learned from your presentation. Whenever you present information, it is always useful to create a handout that summarizes your points to give to audience members after the presentation, especially since graphs and charts can sometimes be hard to read from a screen.

Presentation strategies
Creating a PowerPoint is only half of a successful presentation. You can be an effective presenter when using the following strategies.

Practice your presentation
To be most effective in delivering your presentation, you will want to practice—and practice again and again. The more you practice, the easier it will be to fight through any nerves when presenting, and it will likely make you feel more comfortable about presenting in general. Practicing your presentation gives you a chance to plan what you want to say without reading directly from the PowerPoint and will help you move smoothly from one point to the next. Practicing is also helpful if you have time constraints in which to work because it can help you figure out the necessary pacing for your presentation.

To practice, you might consider presenting to some friends or family members and ask them to provide constructive feedback. You might also consider recording yourself and then watching the recording to see how you present and improve your presentation skills. This will also provide you an opportunity

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27 Jacobs and Hyman, “15 Strategies.”
28 Parr, “12 Proven Strategies.”
29 “Presentation Design 101.”
30 “Presentation Strategies.”
31 McCready, “108 Best Presentation Ideas.”
32 Jacobs and Hyman, “15 Strategies.”
36 Parr, “12 Proven Strategies.”
to count your “ums.” People often say “um” or other filler sounds when they are thinking of what to say next, but this leaves you sounding unprepared. Instead, try replacing any “ums” with silence. Practicing your presentation can help you to feel comfortable with silence.

**Effective presentation persona**

An important aspect of your presentation persona is dressing appropriately for your presentation. This does not mean that you need to wear a business suit for every presentation, though in some instances it is the appropriate choice. Instead, go for slightly more formal than what your audience will be wearing. Consider wearing something neutral, such as subtle patterns or solid colors. If you are in need of business professional clothing, K-State has Cat’s Closet in the Career Center, where you can go to borrow the clothes you need.

Always arrive early for your presentation. While it can be tempting to start a presentation with an excuse, such as “I didn’t get much sleep last night” or “I am fighting off a cold” in case the presentation doesn’t go as planned, avoid making any excuses. Providing excuses just gives the audience license to distrust what you are about to say. Remain confident and don’t let the audience know if you only got two hours of sleep. If you have practiced your presentation, it should be easy to remain confident, because you know the material well.

While it is important to be professional, it is also important to be yourself. Let your personality come out. It can help the audience get to know you better and to engage more in your presentation. Being yourself, rather than trying to suppress your personality, can also help you to feel more comfortable with the presentation. Enthusiasm will also help the audience to engage with your presentation.

**Fighting nerves**

Public speaking can be stressful for many people. One of the best strategies you can use to fight nerves is to breathe. Take ten deep breaths, breathing in and out slowly. Breathing deeply and slowly helps to slow your heart rate and can help to reduce nervousness. Feeling confident in your presentation can also help you to feel more relaxed. If you have practiced your presentation numerous times, you are less likely to feel nervous. No matter how nervous you feel, try to appear relaxed, so your audience sees only your confidence.

**Speak slowly**

Speak slowly and clearly when you present. Presenters often speak so quickly that people cannot understand them. Feeling nervous often causes people to speak quickly, so taking deep breaths can help you to slow down during the presentation. It’s okay to take a moment and pause, especially if it will help you from speaking too quickly. If you are approaching your time limit, try dropping a point or briefly summarize the remaining information rather than speeding up. You can always address questions about the points you summarized after the presentation is complete.

**Interact with the audience**

Interacting directly with the audience can

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37 Ibid.
38 “Strategies for Successful Presentations.”
39 Ibid.
40 Parr, “12 Proven Strategies.”
41 “Strategies for Successful Presentations.”; Jacobs and Hyman, “15 Strategies.”
42 “Strategies for Successful Presentations.”
43 Ibid.
44 Parr, “12 Proven Strategies.”
45 Jacobs and Hyman, “15 Strategies.”
46 Ibid.
47 Ibid.
help to keep them engaged. On a basic level, this means making eye contact with members of the audience. You don’t have to make eye contact with every person; just pick a few people. Making eye contact helps you to keep the audience’s attention and allows you to watch the audience for their reactions. Watching for reactions can help you gauge how the audience feels about what you are saying, allowing you to adjust if necessary.

In addition, you might engage your audience by asking them questions, facilitating an activity, or finding other ways to get the audience directly active in the presentation. If you decide to engage your audience members by asking them questions, try using open ended questions instead of closed or “yes” or “no” questions. For example, instead of asking “Did you have a good break?,” you might ask “What did you do over break?” If you aren’t able to have the audience actively participate in the presentation, it is important to make them feel like you are actively speaking to them. This means speaking to your audience and not turning your back to them.

If you don’t have to read from your slides, but instead have notes to work from (and have practiced your presentation) then you will be able to remain facing your audience. Try stepping out from behind the podium and walking among the audience, or at least around the front of the room. This will help to keep the audience engaged as you are directly interacting with them.

Most importantly, remember how hard you have worked and how well you have prepared for this presentation. You know the material, so just take a few deep breaths and be confident. You’ve got this!

48 Jacobs and Hyman, “15 Strategies.”; “Strategies for Successful Presentations.”
49 “Strategies for Successful Presentations.”
50 Ibid.