

chapter *one*

Technical Communication and Your Career

*A*s you begin reading this book, you may wonder, *Why do I need a technical communication course? I came to college to learn about my major, not writing.* Indeed, many of you reading this book probably came to college to study engineering, computer science, biology, chemistry, business, or other technical and professional fields. You probably didn't come to college solely to learn to write. However, in any field, you will demonstrate your competence, in part, through your writing.



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Let's consider a mechanical engineer, Ernie Chavez, who works as a piping specialist for an energy company. Ernie spends an average of 40 percent of his time writing. He begins most of his piping analysis projects with a written proposal to a plant manager. If the manager approves the project, Ernie will report his progress and possible changes in written progress reports to the plant manager. Ernie usually closes a project with a final report of his work, his conclusions, and the cost of the completed project. Like you, Ernie went to college not

to learn to write but to learn his profession; yet writing, he now realizes, is vital to succeeding as a professional engineer.

Let's also consider Jennifer Nowakowski, a computer programmer in the research and development division of a company specializing in software applications for the hotel and restaurant industries. Jennifer and her team have developed a prototype of a software application for inventorying restaurant food and supplies. Before they can test the prototype, they must write a proposal for company executives, introducing the prototype and asking for the funds they need to test it. If they write persuasively, the proposal may convince the executives to fund the test.

In this chapter, you will learn that writing is important to your career and how your workplace will affect your writing. You will also learn the characteristics of effective technical communication.



HOW WILL WRITING IMPACT YOUR CAREER?

When you effectively communicate ideas in writing, you have a greater opportunity to ensure that your coworkers and managers understand the value of your work.

Like Ernie and Jennifer, you will have to communicate your ideas effectively to perform your job and succeed in your career. You can't assume that your managers and your coworkers will value and approve your work simply because you did it. Instead, you must effectively communicate your work, ideas, and progress to those with the authority to implement your ideas or to those who supervise you (Barabas, 1990). You may also need to persuade others that your work has value. When you effectively communicate ideas in writing, you will have a greater opportunity to ensure that your coworkers and managers understand the value of your work. Your managers may even evaluate you indirectly or directly on how well you communicate in writing.

In many workplaces, "it is not the performance of an employee that counts, but rather managers' perceptions of that performance" (Couture & Rymer, 1993, p. 7). Managers often develop this perception through an employee's written and oral communication skills; supervisory evaluations of communication skills correlate well with employees' overall competence within the organization and "effective writing" is a typical measure of a professional's performance (Couture & Rymer, 1993). Your managers will develop a perception of your skills, your knowledge, and your value to the organization, in part, through your writing.

If you are like the typical college graduate, technical communication—specifically, writing—will fill about 20–60 percent of your time as a professional. For professionals in technical fields, writing will fill at least 40 percent of your time at work (University of Maryland, 2001).

As a professional, you not only will spend much of your time writing, but you also will need to write effectively to succeed in your career. In a survey of 120 major U.S. corporations employing almost 8 million people, employers reported writing as a “threshold skill” for hiring and promotion; 70 percent of the respondents reported that two thirds or more of their employees had writing responsibilities (College Board, 2004). Although communicating well does not automatically lead to success in the workplace, it is an important factor. You may find that you can enhance your reputation with your managers, your peers, and your organization through your written and oral communication. In a labor force filled with mediocre writers, a professional who communicates effectively stands out and succeeds (Hansen & Hansen, 2001).

Whether you are proposing a new idea to your manager or recording a project’s history for the permanent files, clear communication gives you visibility and credibility with your managers, your peers, and ultimately, your organization. Poor communication gives you visibility, too—but without credibility. If you communicate poorly, others may have difficulty understanding your ideas; and your ideas and your work may ultimately fail to receive the recognition they deserve.



HOW DOES THE WORKPLACE AFFECT WHAT AND HOW YOU WRITE?

Several workplace factors will affect you and your writing tasks. These factors include

- your organization’s and your manager’s expectations
- your readers’ needs and expectations
- collaborative work
- time and budget limitations
- ethical considerations

What Do My Organization and Manager Expect?

When you become a professional, your organization and your manager will have certain expectations about your documents. They may state or write these expectations explicitly, or they may imply their expectations. Your organization or manager expect the format, organization, or style of a document to meet certain criteria or established guidelines, or your manager will have certain preferences about format and style. For example, many



Visiting with a Professional in Your Field

You can best learn how communication will impact your career by talking with professionals. To learn more about communication in your field, locate a professional working in your major field. For example, if your major is computer science, find a computer programmer or systems analyst. If your field is construction management or building construction, find a project manager for a construction project. You could contact these professionals in person, by telephone, or by email.

Assignment

Once you have located a professional, set up an interview to discuss how communication, specifically writing, impacts his or her career. If you cannot interview the professional in person, suggest a telephone or email interview. At the interview, ask the professional the following questions:

- What types of writing do you do at work?
- What steps do you take when creating a document?
- How do time and budget affect your writing?
- What percentage of your week do you spend on communication tasks?
- Do you collaborate with others when you write? If yes, describe the collaboration.
- How has communication impacted your career?

You may also develop some questions of your own. You may want to ask the professional to show you some documents that he or she has written. After the interview

1. Write a memo to your classmates about what you learned.
2. Email your memo to your instructor and to your classmates.



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organizations have a standard format or established template for progress reports or for meeting minutes. Some organizations have a standard cover page and a formatted layout for letters and memos. Many organizations also have a style sheet that dictates style and design elements (font, color, and graphics guidelines) that the organization expects you to follow when creating documents for internal and external readers. Find out whether your organization or manager has specific expectations about style and design and meet those expectations to the best of your ability.

This book suggests formats as well as style and design guidelines for many workplace documents. If your organization or manager does not have explicit written guidelines, use the sample documents and style guidelines presented in this book. These documents and guidelines will help you become familiar with conventions that you may encounter in the workplace. Once you are in the workplace, supplement these sample documents and guidelines by gathering examples of effective documents written by your coworkers to use as models. Your organization and your manager will appreciate that you are creating documents that align with other company documents and that you are working to be part of the organization's corporate culture.

What Do My Readers Need and Expect?

As a student, you generally know your reader—your instructor—and what he or she expects. However, in the workplace, you may or may not know your readers. They may be your managers or your coworkers. They may be company executives whom you've never met. They may be clients, users, or even potential customers. You may never meet your readers.

The readers for many of your documents may be more than one person or group, and each individual or group may have different expectations of your documents. Your readers may include people who live and work in countries and cultures other than your own and whose expectations of you and your documents differ from readers in your own country. As a professional, you must account for these differences to create effective documents.

This book will help you learn how to determine what your readers expect and how to meet those expectations. It also will help you consider what international readers will expect from your documents and how to write for them.

How Will a Collaborative Environment Affect My Communication?

When communicating in the workplace, you frequently will work with others to produce a document: 87 percent of college graduates surveyed by Lisa Ede and Andrea Lunsford, authors of *Singular Texts/Plural Authors: Perspectives on Collaborative Writing* (1990), said

they sometimes collaborated with others to produce documents. Technical professionals and technical communicators collaborate on most documents except correspondence, progress reports, and meeting minutes. They collaborate by:

- planning a document with others, either within or outside of their organization
- coauthoring or writing as part of a team
- reviewing and revising documents

Planning Documents with Others

Before a large document project, many organizations create a team to determine the purpose, readers, schedule, and format. The team may comprise only writers; however, in most cases, the team consists of members from different areas of the organization. An organization might select team members according to the function they will perform in the document production; the team might have a subject-matter expert, a writer, a graphics expert, and an editor.

When team members plan documents together, they can identify and answer important questions about global issues early in the document cycle—before writing begins—issues such as budget limitations, deadlines, document design, and readers’ expectations and needs. In early planning sessions, team members can establish a schedule for producing the document and agree about areas of responsibility. Once the team has planned the document, set the schedule, and assigned areas of responsibility, one or more persons may actually produce the document. In some collaborative situations, the team plans the document, but only one person actually does the writing.

Coauthoring or Writing as Part of a Team

In some organizations and writing situations, several people write a document. These people collaborate in one of three ways:

- Each person is responsible for writing a particular section of the document while one team member does the final edit.
- Each person is responsible for writing a particular section, and the team edits the document collectively. Team members send the draft of their sections to the entire team for comments and edits.
- Team members write the document together.

Most teams find the first and second methods of collaboration more efficient. Regardless of the method, successful teams decide on the document’s style, design, and schedule early in the writing process.

Reviewing and Revising Documents Collaboratively

Even if you don't work as part of a team, you probably will collaborate with others when reviewing and revising most documents. You may even collaborate with others by reviewing their documents—documents that you didn't help plan or write. The review can be a formal process by which the writers and other interested parties meet to review the document and suggest revisions. These people may meet more than once before formally approving the document. Even if you are not writing as part of a team, you may take part in a formal review of your documents. William Sims, a licensed professional engineer, reports that newly hired and unlicensed engineers write under the signature of a licensed engineer; so a senior or licensed engineer must review and approve many documents (personal communication, June 14, 2015). Collaboration of this type does not involve teamwork; instead, collaboration takes place at the reviewing or revising stage.

The review process may be informal. When it is, coauthors and interested parties receive a copy of a document to review. Often, these reviewers make comments and suggestions through email or in a shared file accessible to all reviewers. The authors then use this file to make revisions. This book will help you develop techniques for successfully collaborating with others to create effective documents.

What Do My Time and Budget Allow?

The workplace will probably limit the amount of time you can spend on creating documents. Your manager and your organization will expect you to write quickly and efficiently. You will be expected to finish documents on time and within budget. Every professional must contend with time and budget limitations; but like successful professionals in your field, you can learn to write effective documents despite these constraints.

Your budget and schedule may force you to spend extra hours at work or to submit a document before you are ready. For example, your manager may ask you to write the documentation for a new software application that your company is marketing. He or she may require you to have the document ready for user testing within a month, even though you normally would need two months. You may have to adapt an idea or a document to meet budget requirements. This book suggests ways to streamline your writing process, to prioritize layout and design decisions, and to use online resources to help you submit documents on time and within budget.

What Ethical Issues Should I Consider?

As a professional, you may face ethical considerations about the language, graphics, or information that you or your coworkers use in workplace documents. For example, how

will you report the test results of a new airbag design when the testing shows serious design flaws and redesigning the airbag would delay the production of a new car model? The language you use could affect how your readers perceive the design problem and, ultimately, how they decide to act. The language you choose could force the company to spend thousands or millions of dollars to correct the design flaws. Your decision could also cause the company to lose sales to a competitor or to install the flawed airbag in automobiles—possibly endangering lives.

As a professional, you may face similar ethical issues. This book will help you analyze the ethical implications of the language, graphics, and information you select for your writing and to understand how language affects readers' perceptions or endangers lives. It will also give you four moral standards to apply when facing ethical challenges in the workplace.



WHAT MAKES TECHNICAL COMMUNICATION EXCELLENT?

You read and use technical documents every day; although few of these documents are excellent. As a professional, you want your technical documents to be excellent. Technical communication is excellent when it successfully conveys your intended message and meets the needs and expectations of your readers. You best convey your message and meet the needs of your readers when your technical communication

- includes honest, ethical information
- addresses specific readers
- uses clear, concise language
- uses a professional, accessible design
- includes complete, accurate information
- follows the conventions of grammar, punctuation, spelling, and usage

Figure 1.1 presents an example of excellence in technical communication.

Technical communication is excellent when it successfully conveys your intended message and meets the needs and expectations of your readers.

Includes Honest, Ethical Information

Excellent technical communication is honest, ethical, and complete. Honesty is at the heart of ethical information. When you communicate ethically, you have “done the right thing.” You have communicated out of the “intrinsic rightness of the behavior,” not only to keep your job or to receive personal or monetary gain (Dombrowski, 2000, p. 42). You have communicated ethically if you have given readers honest, complete information and if you have not misled them.

Technical communication is dishonest when you misinform readers or intentionally omit important information—perhaps information that could kill or injure someone. If you are dishonest, you and your organization may face legal charges.

Addresses Specific Readers

Your technical documents can accomplish their purpose only when they

- meet the needs and expectations of your intended readers
- convey your intended message in terms the readers will understand

Before you can create documents that will succeed, you must identify your readers. This task is easy when you know them. For example, if you are writing instructions to help your coworkers create a website, you will know (or can easily find out) what they know about the task. You can find out if they are familiar with the software they will be using or if they have created websites using other software or with HTML. You can then determine how much detail to include and how to best structure the instructions. However, if you are writing the same instructions for consumers, you will not know them. You may not know if they have previously created a website using different software; you may not even know how familiar they are with using the computer. In this situation, you should create a reader profile. With this profile, you can determine the appropriate level of language and detail to include in your instructions.

Uses Clear, Concise Language

To convey your intended message, your technical documents must be clear. For readers to use your technical documents, the writing must also be concise. Let's look at an example from some instructions to contractors working with electrical transformers:

The transformers are configured such that operating personnel are exposed to live 12.47kv when any of the enclosure doors are opened.

This instruction is not clear or concise, possibly endangering the users. The instruction would be clearer if written like this:

Danger: To avoid being exposed to live 12.47kv, close all enclosure doors.

When technical communication isn't clear and concise

- **It can be dangerous.** The original instruction to the contractors does not tell them to keep the doors closed. If one of the operating personnel opened the doors, he or she could be severely burned or, worse, killed.
- **It can be unethical.** When technical communication is unethical, readers can get hurt; and you and your organization may face serious legal charges.
- **It can be expensive.** When technical communication isn't clear and concise, either the writer or the reader wastes time, and in the workplace, time is money. For example, Melissa Brown, a documentation manager for a marketing company, reports that by including a tips supplement in software documentation, her company was able to reduce the number of calls to technical support (Blain & Lincoln, 1990). Her company saved substantial money simply by including this tips section (Redish, 1995).

Uses a Professional, Accessible Design

You can use design to create more effective documents and to achieve your intended purpose. An effective design

- **Helps readers locate information and understand how you have organized the document.** Most readers of technical documents do not read the entire document; instead, they look for specific information within it. When a document is effectively designed, readers can efficiently locate information and navigate through a document.
- **Creates a positive, professional impression of your document and your organization.** When a technical document has an attractive, professional design, readers are more likely to read it, and you are more likely to achieve the intended purpose: a professional design that conveys information and creates a positive impression of you, your information, and your organization. A sloppy, unprofessional design, likewise, creates a negative impression of you and your organization, and it makes your information suspect.
- **Gives your documents an attractive, inviting appearance.** When faced with a page or screen filled with only words, your readers may not read it. Readers are more likely to read and use your document when it incorporates design features that create an attractive, inviting appearance.

Includes Complete, Accurate Information

Even when the design is effective and the language is clear and concise, a technical document can only succeed if the information is complete and accurate. A successful technical document gives readers all the information they need to understand the problem, to perform the required task, to understand an unfamiliar topic, or to make a decision. You will best know what information to include and not to include when you identify and create

a reader profile. Successful technical communicators don't *assume* what the readers know; they *find out* what the readers know. Then, the writer can include complete information to help the readers accomplish their goals.

Effective technical documents also give readers accurate information. If your technical document gives readers inaccurate information, you confuse or annoy them. Documents with inaccurate information can be expensive for the organization or dangerous to the reader. For example, a U.S. construction company executive didn't proofread a contract before it was signed. In the contract, the company agreed to complete a project for \$200,000 instead of \$2,000,000. The contract writer simply left out a zero. Although the company was able to amend the contract, it unnecessarily spent thousands of dollars in legal fees and lost much goodwill with its client.

Follows the Conventions of Grammar, Punctuation, Spelling, and Usage

Effective technical communication follows the conventions of grammar, punctuation, spelling, and usage. When your technical documents and your correspondence don't follow these conventions, readers may misread your communications. When you don't follow these conventions, you send negative, unprofessional signals to your readers. For example, if you send an email filled with spelling and punctuation errors to a potential client, he or she may assume that you and your organization do sloppy work and may question the accuracy of your technical information. These errors may also cause readers to focus on your writing rather than on the information you are trying to convey. These same errors may cost you a promotion as your managers may evaluate your ability to communicate. Executives have identified "writing is a ticket to professional opportunity" for employees; some executives identified writing as the most valued skill in an employee (College Board, 2004, p. 3; Hansen & Hansen, 2001). While following the conventions of correctness isn't all that makes up good writing, employers may use these conventions (or lack of them) to create an impression of you and your writing. If you don't follow these writing conventions, you may risk receiving a job offer, keeping a job, or earning a promotion.



WHAT'S AHEAD IN THIS BOOK?

Technical Communication will help you to write effectively as a professional. Part I explains your role as a writer in the workplace and introduces some issues that you may face as a technical professional. The chapters in Part I focus on

- understanding how to analyze and write for readers
- understanding how to collaborate effectively
- facing ethical challenges

Part II discusses the “tools” that a writer needs to create effective technical documents. You may have learned how to use some of these tools in other writing courses; others, however, will be new to you. In Part II, you will learn about tools for

- researching information using primary and secondary sources
- organizing information for your readers
- writing easy-to-read documents
- using reader-focused language
- building persuasive arguments
- designing reader-focused documents
- creating effective visual information

Once you understand the writer’s role and you have the tools to write effectively, you can begin to correspond with your readers and to create effective documents and presentations. In Part III, you will learn specific guidelines for writing effective letters, memos, and emails. You will also learn how to write effective job correspondence.

In Part IV, you will learn about the types of work-related documents you are likely to write; you will also learn how to prepare and deliver memorable presentations. You will learn about writing

- informal reports
- formal reports
- proposals
- definitions and descriptions
- instructions and manuals
- websites

Throughout the book, you will see tip boxes that summarize critical information to help you apply principles presented in the chapters and Taking It into the Workplace boxes that present up-to-date research in technical communication from the vantage point of the workplace professional. Each box includes an assignment where you will learn about communicating and writing in the workplace.

Along with these features, the book includes examples of student and professional writing. It also includes exercises and case studies to give you practice and will improve your writing skills, including some teamwork exercises.



CASE STUDY ANALYSIS

Embarrassing Typo Costs County \$40,000¹

Background

In 2006, county officials in Ottawa County, Michigan were preparing for the November 7 elections. Citizens would be voting on a proposed state constitutional amendment to ban affirmative action programs that give preferential treatment to individuals or groups based on race, gender, and other characteristics. The county printed 180,000 ballots, at a cost of approximately \$0.30 each. The county mailed about 10,000 of these ballots to absentee voters. On October 3, Ottawa County Clerk Daniel Krueger noticed a typo—a very embarrassing typo. The “r” was missing in the word public.

“My first thought was, ‘Oh, crap,’” Krueger said, as reported in the *Holland Sentinel*. “We had about five or six people proofread it. It’s just one of those words. Even after we told people it was there, they still read over it. It happens occasionally.”

Because the error occurred on a statewide proposed amendment, Krueger decided to reprint the ballots. The cost to the county general fund was \$40,000. Krueger said, “It needed to be reprinted” as the proposal was statewide and controversial. In other cases of misprints, the county had decided to use the ballots with errors, but those typos typically consisted of misspelled names, omissions, or incorrect numbers.

The Michigan Secretary of State Bureau of Elections representative Kelly Chesney told the *Holland Sentinel*, “The county made the right decision. It happens every election. There are 1,500 local election officers running our elections. They check and double check, but mistakes happen. Unfortunately, sometimes there is human error involved.”

Assignment

Pretend you are Ottawa County Clerk Daniel Krueger. Write a letter to the county commissioners explaining what went wrong in the ballot printing process and how you plan to ensure it doesn’t happen again. Turn in your letter to your instructor. (For information on writing letters, see Chapter 12.)

¹Compiled from hollandsentinel.com/stories/101006/local_20061010013.shtml.

EXERCISES

1. Locate a website that demonstrates some or all of the characteristics of excellent technical communication. In a memo to your instructor, discuss the following
 - Who will read or use the website?
 - How is the site an example of technical communication?
 - Does the site demonstrate any or all of the characteristics of excellent technical communication?

Include the URL of the website in your memo.

2. **Collaborative Exercise:** Form a team with two or three class members. Locate a manual for a consumer product. You might select a manual for a microwave, a bicycle, or a cell phone. In a memo to your instructor, answer these questions.
 - Who will use the manual?
 - Does the manual demonstrate the characteristics of excellent technical communication? If so, which characteristics does it demonstrate? If not, why?
 - How would you improve the manual to make it excellent?

Include a copy of the manual with your memo. If you found the manual online, include the URL.

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