Chapter 1: What Is Technical Writing?

LESSON PLAN

Summary

This chapter points out the importance of writing in the workplace and defines technical writing. The chapter orients students to technical writing by showing how it is similar to and different from other types of writing.

You Are a Technical Writer!
This section states how students already use technical writing. It defines technical writing and describes how technical writing is essential at work. In addition, it explains how technical writing is used in many different professions.

Characteristics of Technical Writing
This section differentiates specific characteristics of technical writing from other types of writing. Characteristics include subject, audience, organization, style, tone, and special features.

How Technical Writing Compares to Other Writing
This section orients students to technical writing by explaining how it is similar to and different from academic and imaginative writing.

Goals

- Define technical writing and its importance in the workplace
- Identify the characteristics of technical writing
- Compare and contrast technical writing to other types of writing

Introduction

- Goals, p. 2
- Terms, p. 2
- Write to Learn, p. 2
- Focus on Technical Writing, p. 2
- Sample Documents Written for a Specific Audience, p. 3
- Writing @ Work, p. 6
- Writing in Agriculture Food and & Natural Resources, p. 6

Chapter Outline

1. You Are a Technical Writer!
   1. Definition of Technical Writing
   2. Technical Writing Is Essential in the Workplace
2. Characteristics of Technical Writing
   1. Clear Purpose
   2. Accurate and Relevant Research
   3. Identified Audience
   4. Clear Organization
   5. Direct Style
   6. Objective Tone
   7. Design Elements
   8. Standard Conventions
3. How Technical Writing Compares to Other Writing
   1. Technical Writing and Academic Writing
   2. Technical Writing and Personal Writing
   3. Technical Writing and Imaginative Writing

Special Features

- Warm Up, pp. 7, 10, 17
- Stop and Think, pp. 9, 17, 21
- Communication Technologies, p. 11

- Focus on Ethics, p. 17
- Communication Dilemma, p. 13

Chapter 1 Review

- Summary, p. 22
- Checklist, p. 22
- Build Your Foundation, p. 23

- Your Turn, p. 24
- Community Connection, p. 25
- Explore the Net, p. 25

CHAPTER SOLUTIONS

Focus On Technical Writing

What Is Technical Writing?

Students should recognize characteristics of writing with which they are familiar. Then as students compare answers for each document, they should be able to compile a working definition of technical communication.

- Subject: technical, medical, and/or scientific
- Audience: adapted and targeted for a specific audience
- Research: fact-dense
- Organization: obvious
- Style: direct, straightforward, concise, precise
- Tone: objective
- Special features: enhance the message and highlight essential information

Build Your Foundation

1. All writing follows principles of unity, coherence, standard usage, and correct grammar and mechanics.
2. Technical: electric circuits and a computer screen; Academic: a sunset, homelessness, a first car, graduation, a wedding, a close friend, and flowers.
3. Technical: b. (pH range, 6.5 and 7.5)); c. (Mbps); f. (International Building Code, maximum and minimum height); Imaginative: a. (memory, music); d. (mist, peeked); e. (once upon a time, princess)
4. Encourage students to include not just writing but all forms of communication used in the role they have held. In deciding whether their communication was technical, students will review and use the definition of technical communication.
5. Use this activity to point out characteristics of effective and ineffective writing.
6. a. dental assistant; b. dental patient; c. parents; d. international travelers (who read English); e. elementary school-aged children
7. Answers will vary but should refer to the characteristics of technical communication discussed in the chapter.

Your Turn

1. Answers will vary but should relate to the characteristics of technical communication.
2. Answers will vary.
3. Explain that professional journals, typically holding high standards and communicating technical information, use headings and subheadings, visual aids, and other elements to communicate effectively.
4. Most pamphlets and brochures will likely be brief and well-written, with major ideas and concepts highlighted using headings and minor ideas and supporting details and examples highlighted using subheadings.
5. Through this activity, students should see how the special features used in technical communication, such as bulleted lists and headings, can be used to make any type of writing easy to read.
6. Use this activity to illustrate that all professions rely on technical writing in some way.
7. Answers will vary.
8. Reinforce the importance of audience analysis in this activity. Remind students that if a business does not successfully target its audience, it is likely to go out of business.

Community Connection
1–2. Students can share their findings and their writing samples.

Explore the Net
Use the Explore the Net activity to help students fully grasp the role and opportunities of the professional technical writer.

TEACHING TIPS BY CHAPTER SECTION

Write to Learn
Help students realize they are most comfortable with the kinds of writing that are most familiar to them, such as academic writing and writing for self-expression. Know that students already have experience with technical communication (e.g., computer manuals and directions for a science lab), but many students may not be able to verbalize an accurate definition of technical communication.

Focus on Technical Writing
Use the questions to encourage students to read the sample closely.

Writing @ Work
Use this feature as a more personal and inviting introduction to the technical communication profession. The field involves a wide range of jobs and people who write well and enjoy technology, science, medicine, and other technical specialties.

- As an interesting activity based on Mark's job, have students browse the website of Counter Culture Coffee. Can they find information about the organization and its partners? What suggestions do students have for improving the site?

Think Critically
1. Answers will vary. In seeking the writer's voice, remind students to examine word choice and sentence structure.
2. The term *white paper* originated as a name for a government report, one that is authoritative and informative. Today a white paper is any report or guide that addresses problems or issues and is a means of solving them. White papers educate readers and help them make decisions. White papers are often used in politics and business and as online marketing tools.

Communication Technologies
Students can practice using software programs to apply special features.

Think Critically
If a writer does not know how to insert a table, the writer must (1) learn how to create tables or (2) decide how to best present the information another way. Thus, knowledge or lack of knowledge may change a person's composition process.

Communication Dilemma
Point out that Isabel's dilemma is common in the workplace. Discuss Isabel's options and the pros and cons of each option. Students should look at the dilemma from different perspectives—for example, those of loyal corporate citizen, project manager, marketing writer, and general public.

Think Critically
Isabel could rely on experts or experienced professionals in her organization, perhaps her mentor, to provide advice. For example, if the organization's legal counsel outlined the liability of false advertising, Isabel's decision might be clear. She might find other resources in company records that tell her how similar situations were handled in the past.

Focus On Ethics

Use the Focus on Ethics to generate discussion about what is "right" and "good" and what is not.

Think Critically

The Think Critically question should help students see the difference between legality and morality. Sometimes actions and decisions that are legal are not ethical.

You Are a Technical Writer

Warm Up

Use the Warm Up to help students view themselves as writers on the job, to show how relevant technical writing is to their future, and to create enthusiasm for technical writing.

Use this section to reduce the apprehension some students may feel about technical writing. Technical writing can be fun and challenging because it covers a variety of subjects.

Technical Writing Is Essential in the Workplace

- Demonstrate the importance of technical writing in the workplace by having students think of professions that may not use writing. Then have students work in groups to brainstorm ways these professions do use technical writing. Use this activity to show that nearly all professions require communication skills, even if most of the writing involves forms or graphics.
- To identify how people use technical writing on the job, invite several people from business and industry to visit and describe the writing they do at work. Invite representatives from a variety of professions. Before your guests arrive, ask students to prepare questions specifically about communication that they can ask the guests.
- Bring in writing that students may not consider to be technical writing, such as a marketing brochure you have received in the mail or a note written to tell a person exactly what to buy at the store. Explain why these types of documents can be technical writing.
- To demonstrate that technical writing will be required in their careers, have students search for five or more job listings in professions in which they are interested. (This search may be conducted online, in newspapers, in professional journals, or in other locations.) Students can share their job descriptions with the class. Have students point out the jobs that require effective writing and communication skills.
- Have students review the types of technical communication that Sergeant Hardy uses. Then ask students to collaborate on additional items that could appear on the list or have them compile a list of their own uses of technical communication.

Stop and Think

Bring in examples of ineffective writing that you have saved from students in a previous class (delete names and identifying information) or that you find on the Internet. Ask students whether they would hire the person who wrote each document. Ask students whether they would like to work collaboratively on a project with these writers. Discuss students' reasons. Tell students that the quality of their writing affects their chances for advancement because when they write, they demonstrate their ability to analyze, solve problems, respond to an audience's needs, and understand technical processes. Have students talk about how the workplace has changed with the advancement of technology and how that has impacted the type of writing that takes place in the workplace.

Characteristics of Technical Writing

Warm Up

Use the Warm Up as a discovery learning activity to help students analyze the differences in various writing environments and to build on what they learned in the introductory section of this chapter.

- Have students bring in examples of their favorite type of writing to share with the class. Ask them how they use that type of writing and why the author chose to write it that particular way.
- Ask students to compare examples of technical writing with their examples, focusing specifically on subject and audience.

Have students attend a poetry or book reading or a literary discussion. Ask them to write a report analyzing the differences between the types of writing at the event and technical communication, focusing on audience, organization, style, tone, and special features.

Stop and Think
Encourage students to incorporate the concepts about technical writing from this chapter in their definition: subject, organization, audience, style, tone, and special features. Have them compare and contrast their definitions with those of other students.

How Technical Writing Compares to Other Writing
Warm Up
Discuss the characteristics of all good writing, such as unity, coherence, effective organization, use of standard English, and appropriate style. Tell students that technical writing also requires those characteristics.

- Remind students that technical writing is not new to them. It shares characteristics with all effective academic writing, and they can build on many writing skills they already use.
- Make sure students understand the differences between technical writing and other writing they know: differences in presentation, subject matter, and audience considerations.
- Ask students to bring in different recipes to see how they can vary.
- It might be fun to have students see how companies and organizations use Facebook and maybe vote on the most attractive or most useful site.
- Have students write four different short pieces on the same topic: One should represent technical writing, one personal writing, one academic writing, and one imaginative writing. This activity could be assigned to groups of four, with one person responsible for one kind of writing.

Stop and Think
Use students' responses to illustrate similarities and differences between technical writing and other types of writing.

CHAPTER REVIEW

Summary
Use the chapter summary to review key points of class discussion. Then ask students if they disagree with or are unclear about any of the summary items. Ask students to write a brief document summarizing the points they thought were most important. Have them use headings and special features.

Checklist
Use the checklist to continue the chapter review or to quiz for a chapter test.

- Divide the class into two groups. Ask each group to work together to answer the questions in the checklist. Give each group 5–10 minutes. When the time is up, designate two students from each group to write the answers on the board or to publish them online in a computerized classroom.

Chapter 2: Audience and Purpose

Summary

Chapter 2 discusses the importance of analyzing an audience and planning to write a document. The chapter distinguishes between a specific audience (a single person or a group whose point of view is the same) and a multiple audience (readers whose point of view differ). It discusses how knowledge level, role, interest, cultural background, and personality affect communication. It also gives suggestions for analyzing audiences and accommodating their needs. Finally, the chapter discusses how to plan for a document's purpose, scope, and medium.

Meeting the Audience's Needs
This section distinguishes between a specific audience and a multiple audience. It tells how knowledge level, role, interest, cultural background, and personality affect communication. It also suggests ways to accommodate the needs of an audience.

Planning Your Document's Purpose, Scope, and Medium
This section explains how purpose, scope, and medium affect writing.

Goals
- Determine how to meet the needs of a specific audience and a multiple audience
- Plan a document's purpose, scope, and medium

Introduction
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- Terms, p. 26
- Write to Learn, p. 26
- Focus on Audience and Purpose, p. 26
- Sample Document Written for a Specific Audience, p. 27
- Writing @ Work, p. 28
- Writing in Human Services, p. 28

Chapter Outline
1. Meeting the Audience's Needs
   1. Types of Audiences
   2. Meeting the Needs of a Specific Audience
   3. Analyze Your Target Audience
   4. Meeting the Needs of a Multiple Audience
2. Planning Your Document's Purpose, Scope, and Medium
   1. Purpose
   2. Scope
   3. Medium

Special Features
- Warm Up, pp. 29, 39
- Stop and Think, pp. 38, 44
- Communication Technologies, p. 30
- Typical Reader/Writer's Focus, p. 36
- Focus on Ethics, p. 38
- Communication Dilemma, p. 42

Chapter 2 Review
- Summary, p. 45
- Checklist, p. 45
- Build Your Foundation, p. 46
- Your Turn, p. 46
- Community Connection, p. 47
- Explore the Net, p. 47

CHAPTER SOLUTIONS

Focus On Audience and Purpose

Who is the audience for this webpage?
The audience is people who do not give blood or who are hesitant to give blood.

Who is the writer, and what does the writer want the reader to do?
The writer is a representative of the Red Cross. The organization wants people to give blood.

What has the writer done to show an understanding of this reader?
The Red Cross used *I* in the reasons and *you* in the rebuttals.

What kind of information has the writer provided to convince the reader to give blood? Do you think the writer has done a good job? Explain.
The Red Cross has given short, specific factual information. Answers to the second questions will vary.

What If?
The reader did not have access to the Internet?
The information could be published on a poster, a flyer, or a TV or radio advertisement.

The reader is a regular donor but does not have transportation to the Blood Mobile site?
The website could include a link to help the donor find transportation.

The reader is a willing first-time donor but wonders if it is all right to give blood on her way home after lifting weights at the gym?
The site could include a FAQ with a question addressing under what circumstances a person should not give blood.

The reader might be willing to donate but is legally blind?
The FAQ could include a question about special services available for the disabled.

Build Your Foundation

1. Encourage students to challenge assumptions about audience.
2. blitz—a football player or fan; goalie—a soccer player or fan; a cappella— a vocalist, musician, or choir director; QWERTY— clerical staff, a person who keys in data, a writer, an engineer; billabong—an Australian; compost—a gardener; curl—a surfer or surfing fan; dunk—a basketball player or fan; angioplasty—a doctor or nurse; sauté—people who like to cook; arabesque—a ballet dancer; starboard—a boater, sailor, or pilot
3. Specific cartoons appeal to families, couples, professionals, children, and business investors. The subject matter and sophistication level help identify audience.
4. Editors appeal to interests through advertising, cover design, and articles intended for the target audience. Pictures may be more colorful for a younger audience. Recipes may be illustrated in color for cooks. Sports magazines may show action shots.
5. Answers will vary. a. scuba divers—newsletter; b. young couples or retirees—TV ads; c. multiple audience— public service announcements, flyers, website
6. a. primary—young people under 16, secondary—anyone who uses a cell phone or rides with someone who uses a cell phone; b. primary—campers, secondary—Pickernel Camping

Your Turn

1. Use these communication dilemmas to point out each person's responsibilities and how each person's role affects how to communicate.
2. The e-mail to the employer would be carefully and tactfully worded. Explanation of why the employee should be given time off (the employee has worked hard, has not been late, deserves the time) along with the name of someone who could work during this time would be helpful. The e-mail to the employee should make the employee feel appreciated, include a reasonable explanation as to why the request is denied, and offer alternatives (perhaps a day off at a more convenient time).
3. A letter to the president would be respectful, formal in tone, and carefully thought out. A conversation with a friend would be casual and spontaneous.

Community Connection
1–2. Use these activities to apply audience and purpose analyses to real-world scenarios.

Explore the Net
Use the Explore the Net activity to give students a resource for learning about other cultures and to discuss the importance of factoring in knowledge of other cultures in the communication process.

TEACHING TIPS BY CHAPTER SECTION

Write to Learn
Help students see that they already accommodate their readers' needs in their conversations. Accommodating readers in written communication is similar.

Focus on Audience and Purpose
Use the questions to encourage students to read the sample closely.

Writing @ Work
Use this feature to show the importance of audience and purpose in all types of communication.

Think Critically
1. Christopher communicates orally to large and small groups. He uses humor and body language. He researches and writes. 2. Humor relaxes people.

Communication Technologies
Have students go to the BBC and/or VOA website to see news from different perspectives.

Think Critically
An event might carry less importance in India than in America or vice versa.

Focus on Ethics
Have students comment on stereotypes in TV shows, movies, magazines, and books. If they cannot think of anything, discuss the fact that stereotypes do exist. Have students view a TV show for a week to focus on stereotypes such as sex, race, sexual orientation, age, ethnicity, religion, and weight. Ask them to share their findings with the class. Share personal experiences of how unfair and inaccurate stereotypes are, showing that stereotypes create ill will, demean a person's individual worth, and ostracize people who would otherwise contribute to the group. In the extreme, stereotyping can lead to violence.

Think Critically
The possible consequences of stereotyping people include misjudging people, losing potential friends and colleagues, alienating people, being legally culpable, and holding an unethical and untenable point of view.

Communication Dilemma
Use the dilemma to point out the importance of adapting to the communication needs of others—whether the context is academic or social.

Think Critically
Uma does not understand the conversation about the lab research and may wonder why Marcus and Sophia do not acknowledge her and introduce themselves to Drew, the new employee. Advice: Socialize with the other employees. Sometimes it is easy to "talk shop" in a mixed group, but such conversation can alienate others. Also, it is important to form relationships with all coworkers.

Meeting the Audience's Needs

Warm Up

Use the Warm Up to illustrate how audience might affect language. Discussing a problem with a sibling does not require much prior thought. Talking to a coworker, however, requires some planning, tact, and consideration of the consequences.

- Invite a businessperson who creates marketing materials to speak to the class about planning for purpose and audience.
- Ask students to bring in a personal artifact and describe its importance and the situation (the rhetorical situation) that prompted the creation of the artifact.
- Pull up YouTube videos that solicit appeals for money for charities (e.g., animal, food, clothing, toys) or offer products for sale (health and beauty aids, furniture, cars, games). Examine the appeals for logos, ethos, pathos, and kairos.
- Make sure students know what it means for the writer to be transparent—focusing on the reader.
- Ask students if they recognize the types of readers. List some areas of expertise—football, geography, math, movies, gardening, weather. Ask students if they would be a lay reader, a technical reader, an expert reader, or a manager for each topic.
- Ask if anyone can translate the Morse code message. It says, "Know your audience."
- Ask students who have performed in front of a live audience to share what they had to do to accommodate the audience. They may mention, for example, rehearsing, applying makeup, and smiling. Try to get students to focus on feelings they had as a result of accommodating different audiences.
- Make sure students understand how knowledge level, roles, interests, culture, and personality can affect communication.
- Knowledge level affects how much information to provide. Role affects what kind of information to provide. Interests affect attitude. Cultural background affects attitude and perception. Personality can affect attitude.
- To show the extent of international business, offer extra credit to students who use the Internet to locate American companies with interests abroad or companies abroad with U.S. interests.
- Offer extra credit to students who interview a local person from another culture. What have these people learned about American communication customs that may be different from their own? How does culture affect communication at work?
- Table 2.1: Use the table to help students understand the complexities of analyzing an audience.
- Because most students are familiar with the story of Romeo and Juliet, you can discuss how scenes in that play appeal to different audiences. Remind students of how the groundlings (peasants who stood on the ground to view plays presented at The Globe) would have enjoyed the street brawls between the Capulets and the Montagues. The court would have enjoyed the Capulets' masquerade ball and the prince's declarations. Shakespeare even changed the language to appeal to his varied audience. He wrote some of his play in rhymed verse for the upper class and other parts in prose for the lower class.
- Point out that while the primary audience is the focus of attention, writers should not ignore their secondary audiences.
- Bring in several newspapers or old phone books, or pull up different websites. Ask students to work in groups to describe how the newspaper and/or phone book and/or website appeals to different needs. Students should notice use of headings, graphics, and sections.
- Ask a newspaper editor to visit the classroom to talk about audience analysis.
- Ask students to give examples of primary and secondary audiences. Ask them to suggest primary and secondary audiences in this example: The school board writes a policy for school uniforms. (Students and parents—primary audience. Stores that sell the uniforms—secondary audience).
- Review Magdalena's writing challenge. Students should see that appealing to different readers is not that difficult if they think about using different report sections for different readers.
- Table 2.2: Use the table to show how Magdalena accommodated the needs and wants of each member of her audience.

Stop and Think

Answers include explaining adjustments made to appeal to different interests, knowledge levels, and cultural backgrounds.

Planning Your Document's Purpose, Scope, and Medium

Warm Up

Use the Warm Up to show that the audience does affect what someone says and does not say. In other words, the audience and medium affect the scope of a person's remarks.

- Remind students that technical writing serves a useful purpose: to inform or persuade.
- Use the bulleted questions to brainstorm different purposes. Start with school clubs and their publications. What does the Drama Club want the student body to do? To buy? What does the Student Government Association want students to do? To make a decision about? Continue with other organizations or individuals. Remind students that sometimes a purpose can be twofold.
- Using newspapers, phone books, or websites again, ask students to generate purpose statements from different articles and sections.
- Point out that the purpose statement is important because it helps clarify the topic.
- Show the connection between audience, purpose, and scope. Students must know their audience and purpose before they can decide what to include and what not to include.
- Help students see that the medium is the vehicle for the message. You might compare it to an artist's medium—paint, charcoal, clay—and the way that affects the kind of art produced and the way the art is produced.
- Ask students whether they have seen a commercial that had so much action and moving scenes that it overwhelmed them to the point of switching channels. Relate their experiences to the concept of a medium overwhelming the audience.
- Emphasize the three things to consider when selecting a medium: (1) appropriateness for the audience, (2) time and cost versus possible outcome, and (3) availability of the media.
- Tell students that finding out what medium is typically used can help them decide what medium is appropriate.
- Remind students that formatting concerns are important to consider. Many organizations use formats that have been standardized over the years.
- Use Figure 2.2 to point out all the media available today. Ask students to speculate what new media developed over the next ten years might look like.
- Use Table 2.3 to show how purpose and audience affect scope and medium. Also point out the variety of options available.
- Assign the Purpose, Scope, and Medium worksheet available as a Chapter Activity on the MindTap and instructor companion site.

Stop and Think

Have students bring in assignments from other classes. Generally, the purpose will involve understanding and learning to do something; the scope will include the information in the assignment and the information that was left out; and the medium might be a handout, the board, or oral instructions.

CHAPTER REVIEW

Summary

Use the summary to review important concepts. Ask students to analyze Chapter 2 for audience, purpose, scope, and medium.

Checklist

Ask students to use the checklist when they plan documents in this class.

Chapter 3: Technical Research

LESSON PLAN

Summary
Chapter 3 explains the need for research in the workplace. The chapter discusses the process researchers use to collect information for solving problems and answering questions. After explaining secondary sources, the chapter describes how to locate, document, evaluate, and take notes from these sources. In addition, the chapter defines primary sources and gives guidelines for collecting primary data through surveys, interviews, observation, and experimentation.

Conducting Technical Research
This section gives a brief explanation of the process of conducting technical research.

Researching at Work
This section compares research required at school and at work and explores the reasons people use research at work to solve problems, make decisions, and answer questions.

Finding Secondary Data
This section discusses various sources of secondary information.

Documenting Secondary Sources
This section defines documentation, explains what must be cited, and explains the documentation process.

Evaluating Sources
This section describes why readers should be critical when choosing data sources. It also gives guidelines for determining the effectiveness of sources, including electronic sources.

Taking Notes from Sources
This section explains how to summarize, paraphrase, and use direct quotation from sources.

Collecting Primary Data
This section teaches students how to develop, use, and write about surveys, interviews, observation, and experimentation. In addition, it explains the importance of valid and reliable data.

Goals
- Distinguish the differences between researching at school and at work
- Identify and locate secondary sources
- Document secondary sources
- Evaluate sources
- Take notes from sources
- Collect primary data
- Write about primary data

Introduction
- Goals, p. 48
- Terms, p. 48
- Write to Learn, p. 48
- Focus on Technical Research, p. 48
- Sample Working Bibliography, p. 49
- Writing @ Work, p. 50
- Writing in Education and Training, p. 50

Chapter Outline

1. Conducting Technical Research
2. Researching at Work
3. Finding Secondary Data
   1. Correspondence and Report Archives
   2. Library Catalog
   3. Periodicals
   4. General Reference Materials
   5. Electronic Resources
   6. Finding Electronic Information
   7. Searching with Keywords
4. Documenting Secondary Sources
   1. Bibliography and Works Cited
   2. Internal Citations
5. Evaluating Sources
   1. Publication Date
   2. Author's Credentials
   3. Depth and Coverage
   4. Special Considerations for Electronic Sources
6. Taking Notes from Sources
   1. Summary
   2. Paraphrase
   3. Direct Quotation
7. Collecting Primary Data
   1. Surveys
   2. Interviews
   3. Observation
   4. Experimentation
   5. Validity and Reliability

Special Features

Chapter 3 Review

CHAPTER SOLUTIONS

Focus on Technical Research

- *In what order are the entries placed? Why?*

The entries are placed in alphabetical order so that users may easily locate a particular source.

- *Why do some entries include a date of access?*

Those entries are for online sources. Since online sources may change or be deleted, the date of access lets readers know at what point the material was viewed by the researcher. Of the sources listed, which ones did the researchers find online? In print?

The first, second, fourth, eighth, ninth, and tenth sources were found online. The third, fifth, sixth, and seventh sources were found in print items.

- *Which source is most recent?*

The second source (Dong et al) is most recent (Nov. 2015).

Summarize by reminding students that style guides such as the MLA Handbook allow users to interpret and locate materials that other people have used in research.

What If . . .?

The researchers were planning to publish their work newspaper or publication without a focus on science?
The researchers would use a style appropriate for the publication and its readers.
The journal or publication would probably dictate the use of a particular style guide.

The audience was interested only in the most recent findings on the topic?
The researchers would likely use the Web and periodicals because those sources provide the most current information.

CHAPTER SOLUTIONS

Build Your Foundation

1. a. left corner: Distance Legislation; right corner: Rademacher and Schwartz 14; body: "Hog Farmers and Homeowners: Zoning Solutions" states that governments, municipal and regional, are legislating distance between farms' waste lagoons and residential areas. b. left corner: Key to Disease Management; right corner: Nuez 259; body: Diseases can be managed with "[c]areful record keeping and close observation."
2. a. According to the Center of Marine Conservation, volunteers on the beaches and inland waterways picked up over 7 million pieces of trash, everything from cigarette butts to syringes. b. The Highway Department says that vehicles will soon be on an 8.5-mile stretch of road between Henderson and Mount Clemmons. One part of the new road will be used to test asphalt created to combat hydroplaning, and another part will test asphalt created from crumbled tire rubber. c. In an article for *Photography Solutions*, Dee Kay recommends that amateur and professional photographers establish "backup to be redundant and automatic. Store photos in at least three ways, with one of those being off premises" (209).
3. Have students work in teams to check bibliographic entries.
4. Discuss what the purpose of the interview is; whether it will be tape-recorded; and when, where, and how long to meet.
5.
   a. Avoid questions that suggest a Yes or No response.
   b. Avoid questions that reflect an opinion or bias.
   c. Avoid vague questions. In this question, respondents might be confused about whether to reply to the 10 percent market decline or the possibility of a strike.
6.
   a. Design questions that will collect facts rather than opinions.
   b. Write clear and nonleading questions. Respondents will answer this question based on each one's definition of "reasonable." Thus, the data collected may not be useful.
   c. Make the purpose of the question clear. This question invites too wide a range of responses.
7. Point out the need for information before being interviewed for a job.

Your Turn

1. Students will recognize that they used many methods: reading, experimenting, observing, interviewing, and surveying.
2. Students should understand the wealth of information handily available in reference sources.
3. Most professionally created questionnaires will be effective.
4. Discuss what not to do during an interview.
5. Demonstrate how different search engines produce different results; thus, students should use more than one when conducting research.
6. Students will better understand and can compare how search engines work.
7. Students will learn about databases.
8. Show students how relevant research is to their experience.

9. Students should learn how important gathering information is to solving problems in business.
10. Answers will vary according to the materials students are using.
11. How does a researcher cite a tweet?

Start the works cited entry with the writer's Twitter handle where the author's name would normally go. If the author's real name is known, it may be placed in parentheses after the pseudonym. The real name is not required. Next, place the tweet in its entirety in quotations, inserting a period after the tweet within the quotations. Then enter the date, time of posting (using the reader's time zone), and URL. Separate the date and time with a comma and end with a period following the URL. Include the date accessed, if you believe it will be helpful.

@realDonaldTrump (Donald Trump). "Keep hearing about 'tiny' amount of money spent on Facebook ads. What about the billions of dollars of Fake News on CNN, ABC, NBC & CBS?" *Twitter*, 21 October 2017, 1:06 p.m., twitter.com/djtrump/status/23295464976496.

How many spaces should follow a period or other ending mark of punctuation?
One space

Does the current MLA style guide use underlining or italics, for example, to indicate a book title or website?
Italics

12. Students use this activity to practice survey techniques.

Community Connection
Use the Community Connection worksheet to guide students through the questions. Students can share their findings and their writing samples.

Explore the Net
"Research Help" at Cornell University's library offers a section on "Citation Management." (1) Citation management programs used at Cornell include Zotero, Mendeley, and EndNote. (2) Abstracts are descriptive summaries, and annotations describe and critique the source. (3) UCLA Library offers a number of services, including access to research workshops, research guides, an online collaborative research writing tool, and more. Purdue Online Writing Lab (OWL) gives researchers aids in conducting primary and secondary research; help with APA, MLA, Chicago, and American Medical Association (AMA) style guides; sample papers; and more.

TEACHING TIPS BY CHAPTER SECTION

Write to Learn
Students can see that research is not an intimidating process and that they do research in their everyday lives. An example might be deciding on which brand of running shoes or mascara to buy.

Focus on Technical Research
Use the questions to encourage students to read the sample closely.

What If?
Use the questions to discuss how the model would be different if the situation or audience changed.

Writing @ Work
Use this feature to connect with students' awareness of research typically done in an academic occupation. Sonya's role in the academic world and her use of research will be familiar to students. Later in the chapter they will be exposed to research in many other contexts.

Note Sonya's comments about the importance of active reading and note taking.

In addition, students should appreciate her GPS metaphor for documentation.

Think Critically
1. Yes, she would. However, because both fields involve rapidly changing technology and science, more of her research might be done online. On the other hand, she is more likely to rely on print materials in any literary research, which is not as time-sensitive.
2. A primary source might be a magazine, newspaper, or televised interview with Maya Angelou or an essay or a letter written by Angelou. A secondary source could be a critique of Angelou's work or an interview with one of her colleagues or friends.

Communication Technologies
Give students a current topic, something that happened in the last two weeks. Ask them to find at least two sources on the topic. They should read the sources and create notes to use in giving an informal oral report to the class. The sources will most likely be periodicals or webpages.

Think Critically
Yes, so much information available in so many different media may overwhelm researchers with information overload. Also, filtering sources to determine those that are credible, current, and accurate from those that are not creates challenges.

Communication Dilemma
Explain to students that all writing is copyrighted as soon as it is drafted, even if the writer has not gone through the legal process of copyrighting and even if the document does not include a copyright notation or the copyright symbol. Explain public domain. Works created by or for the U.S. government and works with expired copyrights are examples of materials in the public domain.

Think Critically
Students could research copyright laws by asking an expert such as an attorney, or they could search for websites such as www.copyright.gov. Publishing the songs would be an infringement of copyright. Have students attend a poetry or book reading or a literary discussion. Ask them to write a report analyzing the differences between the types of writing at the event and technical communication, focusing on audience, organization, style, tone, and special features.

Focus on Ethics
When discussing this feature, generate a list of people in various work and academic situations whom students might consult.

Think Critically
If the use of the cartoon falls under the "one-time educational use" rule, it may be included without permission. However, if the report is to have widespread publication or is to be reproduced for profit, the writer needs permission.

Researching at Work
Warm Up
Use the Warm Up to help students realize that they have a great deal of experience with research, even if it is as simple as finding tips on how to win a favorite computer game or learning the latest exploits of a celebrity.

1. After finding comfort in their research experiences, students can compare situations in which they were self-motivated to conduct research for the more highly pressured situations of work, such as choosing the most nutritious snack food for children in a daycare center or finding a reasonably priced, effective, and pet-friendly herbicide to eliminate poison ivy.
2. Ask professionals involved in research to share their experiences and insights with students. The professionals may include people in R&D departments, public relations workers, grant writers, and personnel officers. Take students to the library and show them the almost limitless possibilities of electronic data collection.