Technical Writing

Technical Writing

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OPEN OREGON EDUCATIONAL RESOURCES

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Acknowledgements

About this free online technical writing textbook

Much of this text, published under a Creative Commons license, was originally developed by Dr. David McMurrey, who is both a technical writer and a college instructor. For more about him and his original work, please visit his biography page at: https://www.prismnet.com/~hcexres/index.html. He kindly gave his text a CC-BY license at our request so that we could adapt our text from it. We extend our sincere appreciation to Dr. McMurrey, the team of consultants at Saylor University whose work shared via open educational resources is also featured in this text, and the host of educators, librarians, and professionals who have shared their creations with a Creative Commons license. Our thanks as well to our colleague, Dr. Eleanor Sumpter-Latham, whose work we consulted and adapted into this text.

Additional materials have been adapted or created by Annemarie Hamlin, Chris Rubio, and Michele DeSilva of Central Oregon Community College, and Megan Savage, Jodi Naas, Allison Gross, and Billy Merck of Portland Community College.

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Introduction

Technical writing courses introduce you to some of the most important aspects of writing in the worlds of science, technology, and business—in other words, the kind of writing that scientists, nurses, doctors, computer specialists, government officials, engineers, and other such people do as a part of their regular work. The skills learned in technical writing courses can be useful in other fields as well, including education and social sciences.

To learn how to write effectively for the professional world, you will study common types of reports, special format items such as lists and headings, simple techniques for creating and using graphics in reports, and some techniques for producing professional-looking final copy.

Technical writing courses build on what you have learned in other writing courses. But there is plenty new to learn! If you currently have a job in which you do some writing, you will discover that you can put what you learn in your technical writing course to immediate use.

About technical writing

While technical communication is essential in a wide range of fields and occupations, technical writing is also a fully professional field of its own with degree programs, certifications, and—yes!—even theory. It is a good field with a lot of growth and income potential, and an introductory technical writing course is a good way to start if you are interested in a career in this field or will work in a career in which writing is a component.

Workplace writing

However, many students of technical writing courses are not necessarily planning for a career as a technical writer. That is why this course provides you with an introduction to the kinds of writing skills you need in practically any technically oriented professional job. No matter what sort of professional work you do, you are likely to do some writing—and much of it may be technical in nature. The more you know about some basic technical writing skills, the better job of writing you're likely to do. And that will be good for the projects you work on, for the organizations you work in, and—most of all—good for you and your career.

The meaning of "technical"

Technical communication—or technical writing, as the course is often called—is not writing about a specific technical topic such as computers, but about any technical topic. The term "technical" refers to knowledge that is not widespread, that is more the territory of experts and specialists. Whatever your major is, you are developing an expertise—you are becoming a specialist in a particular technical area. And whenever you try to write or say anything about your field, you are engaged in technical communication.

Importance of audience

Another key part of the definition of technical communication is the receiver of the information—the audience. Technical communication is the delivery of technical information to readers (or listeners or viewers) in a manner that is adapted to their needs, level of understanding, and background. In fact, this audience element is so important that it is one of the cornerstones of this course: you are challenged to write about technical subjects but in a way that a beginner—a nonspecialist—could understand. This ability to “translate” technical information to nonspecialists is a key skill to any technical communicator. In a world of rapid technological development, many people are constantly falling behind. Technology companies are constantly struggling to find effective ways to help customers or potential customers understand the advantages or the operation of their new products.

So relax! You don’t have to write about computers or rocket science—write about the area of technical specialization you know or are learning about. And plan to write about it in such a way that even Grandad can understand!

Really technical writing

Keep relaxing, but you should know that professional technical writers do in fact write about very technical stuff—information that they cannot begin to master unless they go back for a Ph.D. But wait a minute! The technical documents have to ship with the product in less than nine months! How do they manage? Professional technical writers rely on these strategies to ensure the technical accuracy of their work:

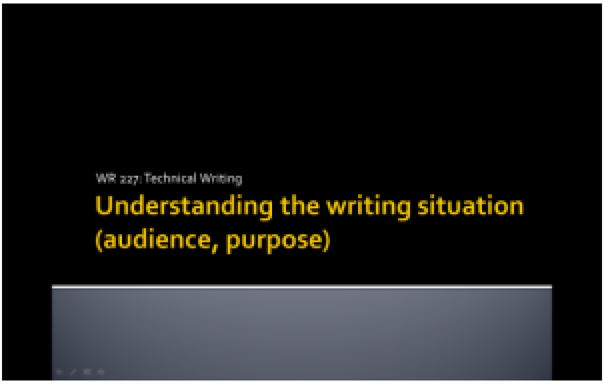
- Study of books, articles, reports, websites related to the product
- Product specifications: what the product is supposed to do, how it is designed
- Interviews with subject matter experts: the product specialists, developers, engineers
- Product meetings during the development cycle
- Live demonstrations of the product

- Familiarization with similar, competing products
- Experimenting with working models of the product
- Subject matter experts' review of technical writers' work for technical accuracy and completeness

Of course, experienced technical writers will tell you that product development moves so fast that specifications are not always possible and that working models of the product are rarely available. That's why the subject matter experts' review is often the most important.

Technical-writing and academic writing courses

You have probably taken at least one academic writing course before this one, so you will be familiar with some of the practices of writing for your college classes. The video below will introduce you to some of the differences between academic and technical writing.



In technical-writing courses, the main focus is typically the technical report, due toward the end of the term. Just about everything you do in the course is aimed at developing skills needed to produce that report. Of course, some technical-writing courses begin with a resume and application letter (often known as the cover letter), but after that you plan the technical report, then write a proposal in which you propose to write that report. Then you write short documents (memos, emails, outlines, drafts) where you get accustomed to using things like headings, lists, graphics, and special notices—not to mention writing about technical subject matter in a clear, concise, understandable way that is appropriate for a specific audience.

Caution: You should be aware that technical-writing courses are writing-intensive. You will probably write more in your technical-writing course than in any other course you have ever taken. If you are taking a full load of classes, working full time, and juggling unique family obligations, please consider whether this is the right time for you to take technical writing. Consult with your professor about the workload for this class in order to make your decision.

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1. PROFESSIONAL COMMUNICATIONS

Professional communication in written form requires skill and expertise. From text messages to reports, how you represent yourself with the written word counts. Writing in an online environment requires tact, skill, and an awareness that what you write may be there forever. From memos to letters, from business proposals to press releases, your written business communication represents you and your company: your goal is to make it clear, concise, and professional.

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1.1 Texting

Text messages and e-mails are part of our communication landscape, and skilled business communicators consider them a valuable tool to connect.

Whatever digital device you use, written communication in the form of brief messages, or texting, has become a common way to connect. It is useful for short exchanges, and is a convenient way to stay connected with others when talking on the phone would be cumbersome. Texting is not useful for long or complicated messages, and careful consideration should be given to the audience. Although texting will not be used in this class as a form of professional communication, you should be aware of several of the principles that should guide your writing in this context.

When texting, always consider your audience and your company, and choose words, terms, or abbreviations that will deliver your message appropriately and effectively.

Tips for effective business texting

- Know your recipient. "? % dsct" may be an understandable way to ask a close associate what the proper discount is to offer a certain customer, but if you are writing a text to your boss, it might be wiser to write, "what % discount does Murray get on $1K order?"
- Anticipate unintentional misinterpretation. Texting often uses symbols and codes to represent thoughts, ideas, and emotions. Given the complexity of communication, and the useful but limited tool of texting, be aware of its limitation and prevent misinterpretation with brief messages.
- Contacting someone too frequently can border on harassment.

Texting is a tool. Use it when appropriate but don't abuse it.

- Don't text and drive. Research shows that the likelihood of an accident increases dramatically if the driver is texting behind the wheel. [1] Being in an accident while conducting company business would reflect poorly on your judgment as well as on your employer.

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1. Houston Chronicle. (2009, September 23). Deadly distraction: Texting while driving, twice as risky as drunk driving, should be banned. Houston Chronicle (3 STAR R.O. ed.), p. B8. Retrieved from http://www.chron.com/opinion/editorials/article/Deadly-distraction-Texting-while-driving-should-1592397.php

1.2 E-mail

E-mail is familiar to most students and workers. It may be used like text, or synchronous chat, and it can be delivered to a cell phone. In business, email has largely replaced print hard copy letters for external (outside the company) correspondence, and in many cases, it has taken the place of memos for internal (within the company) communication.[1] E-mail can be very useful for messages that have slightly more content than a text message, but it is still best used for fairly brief messages. Many businesses use automated e-mails to acknowledge communications from the public, or to remind associates that periodic reports or payments are due. You may also be assigned to "populate" a form e-mail in which standard paragraphs are used, but you choose from a menu of sentences to make the wording suitable for a particular transaction.

E-mails may be informal in personal contexts, but business communication requires attention to detail, awareness that your e-mail reflects you and your company, and a professional tone so that it may be forwarded to any third party if needed. E-mail often serves to exchange information within organizations. Although e-mail may have an informal feel, remember that when used for business, it needs to convey professionalism and respect. Never write or send anything that you wouldn't want read in public or in front of your company president.

1. Guffey, M. (2008). Essentials of business communication (7th ed.). Mason, OH: Thomson/Wadsworth.

Tips for effective business e-mails

As with all writing, professional communications require attention to the specific writing context, and it may surprise you that even elements of form can indicate a writer's strong understanding of audience and purpose. The principles explained here apply to the educational context as well; use them when communicating with your instructors and classroom peers.

- **Open with a proper salutation**. Proper salutations demonstrate respect and avoid mix-ups in case a message is accidentally sent to the wrong recipient. For example, use a salutation like "Dear Ms. X" (external) or "Hi Barry" (internal). Never use the title Mrs. as you cannot assume a woman is married. If the gender of a person is not evident, use their entire name, like this: "Dear Sam Jones"
- **Include a clear, brief, and specific subject line**. This helps the recipient understand the essence of the message. For example, "Proposal attached" or "Your question of 10/25."
- **Close with a signature**. Identify yourself by creating a signature block that automatically contains your name and business contact information.
- **Avoid abbreviations**. An e-mail is not a text message, and the audience may not find your wit cause to ROTFLOL (roll on the floor laughing out loud).
- **Be brief**. Omit unnecessary words.
- **Use a good format**. Divide your message into brief paragraphs for ease of reading. A good e-mail should get to the point and conclude in three small paragraphs or less.
- **Reread, revise, and review**. Catch and correct spelling and grammar mistakes before you press "send." It will take more time and effort to undo the problems caused by a hasty, poorly written e-mail than to get it right the first time.
- **Reply promptly**. Watch out for an emotional response—never

reply in anger—but make a habit of replying to all e-mails within twenty-four hours, even if only to say that you will provide the requested information in forty-eight or seventy-two hours.

- **Use "Reply All" sparingly**. Do not send your reply to everyone who received the initial e-mail unless your message absolutely needs to be read by the entire group.
- **Avoid using all caps**. Capital letters are used on the Internet to communicate emphatic emotion or yelling and are considered rude.
- **Test links**. If you include a link, test it to make sure it is working.
- **E-mail ahead of time if you are going to attach large files** (audio and visual files are often quite large) to prevent exceeding the recipient's mailbox limit or triggering the spam filter.
- **Give feedback or follow up**. If you don't get a response in twenty-four hours, e-mail or call. Spam filters may have intercepted your message, so your recipient may never have received it.

Figure 1 shows a sample email that demonstrates the principles listed above.

Figure 1. Sample email

```
From:                  Steve Jobs <sjobs@apple.com>
To:                    Human Resources Division <hr@apple.com>
Date:                  September 12, 2015
Subject:               Safe Zone Training
```

Dear Colleagues:

Please consider signing up for the next available Safe Zone workshop offered by the College. As you know, our department is working toward increasing the number of Safe Zone volunteers in our area, and I hope several of you may be available for the next workshop scheduled for Friday, October 9.

For more information on the Safe Zone program, please visit http://www.cocc.edu/multicultural/safe-zone-training/

Please let me know if you will attend.

Steve Jobs
CEO Apple Computing
sjobs@apple.com

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1.3 Netiquette

Netiquette refers to etiquette, or protocols and norms for communication, on the Internet. We create personal pages, post messages, and interact via online technologies as a normal part of our careers, but how we conduct ourselves can leave a lasting image, literally. The photograph you posted on your Facebook page or Twitter feed may have been seen by your potential employer, or that nasty remark in a post may come back to haunt you later.

Following several guidelines for online postings, as detailed below, can help you avoid embarrassment later.

Know your context

- Introduce yourself.
- Avoid assumptions about your readers. Remember that culture influences communication style and practices.
- Familiarize yourself with policies on Acceptable Use of IT Resources at your organization. (One example of a college's acceptable use policy can be found here: https://www.cocc.edu/departments/its/network-administration/files/cocc_acceptable_use_of_information_technology_resources_12.pdf/)

Remember the human

- Remember there is a person behind the words. Ask for

clarification before making judgement.
- Check your tone before you publish.
- Respond to people using their names.
- Remember that culture and even gender can play a part in how people communicate.
- Remain authentic and expect the same of others.
- Remember that people may not reply immediately. People participate in different ways, some just by reading the communication rather than jumping into it.
- Avoid jokes and sarcasm; they often don't translate well to the online environment.

Recognize that text is permanent

- Be judicious. What you say online is difficult to retract later.
- Consider your responsibility to the group and to the working environment.
- Agree on ground rules for text communication (formal or informal; seek clarification whenever needed, etc) if you are working collaboratively.

Avoid flaming: research before you react

- Accept and forgive mistakes.
- Consider your responsibility to the group and to the working environment.
- Seek clarification before reacting.
- Ask your supervisor for guidance.*

Respect privacy and original ideas

- Quote the original author if you are responding to a specific point made by someone else.
- Ask the author of an email for permission before forwarding the communication.

*** Sometimes, online behavior can appear so disrespectful and even hostile that it requires attention and follow up. In this case, let your supervisor know right away so that the right resources can be called upon to help.**

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1.4 Memorandums

A memo (or memorandum, meaning "reminder") is normally used for communicating policies, procedures, or related official business within an organization. It is often written from a one-to-all perspective (like mass communication), broadcasting a message to an audience, rather than a one-on-one, interpersonal communication. It may also be used to update a team on activities for a given project, or to inform a specific group within a company of an event, action, or observance.

Memo purpose

A memo's purpose is often to inform, but it occasionally includes an element of persuasion or a call to action. All organizations have informal and formal communication networks. The unofficial, informal communication network within an organization is often called the grapevine, and it is often characterized by rumor, gossip, and innuendo. On the grapevine, one person may hear that someone else is going to be laid off and start passing the news around. Rumors change and transform as they are passed from person to person, and before you know it, the word is that they are shutting down your entire department.

One effective way to address informal, unofficial speculation is to spell out clearly for all employees what is going on with a particular issue. If budget cuts are a concern, then it may be wise to send a memo explaining the changes that are imminent. If a company wants employees to take action, they may also issue a memorandum. For example, on February 13, 2009, upper management at the Panasonic Corporation issued a declaration that all employees should buy at least $1,600 worth of Panasonic products. The company president noted that if everyone supported the company with purchases, it would benefit all.[1]

While memos do not normally include a call to action that requires personal spending, they often represent the business or organization's interests. They may also include statements that align business and employee interest, and underscore common ground and benefit.

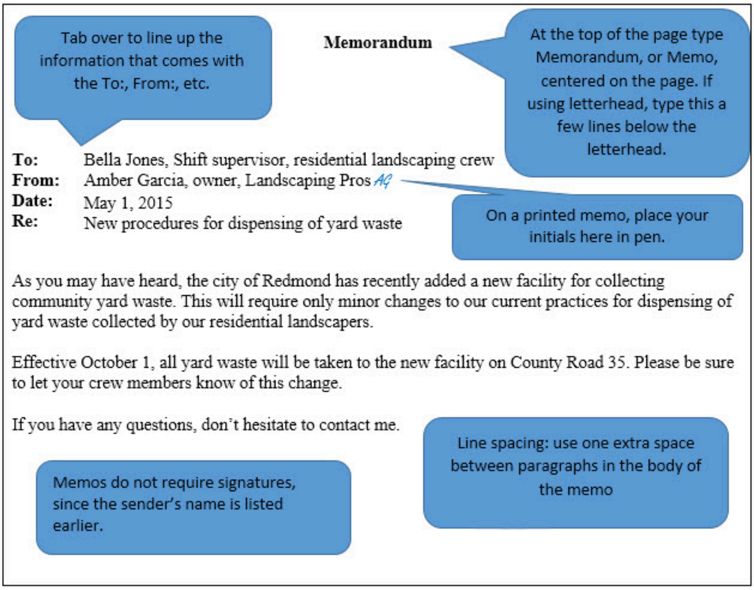
Memo format

A memo has a header that clearly indicates who sent it and who the intended recipients are. Pay particular attention to the title of the individual(s) in this section. Date and subject lines are also present, followed by a message that contains a declaration, a discussion, and a summary.

In a standard writing format, we might expect to see an introduction, a body, and a conclusion. All these are present in a memo, and each part has a clear purpose. The declaration in the opening uses a declarative sentence to announce the main topic. The discussion elaborates or lists major points associated with the topic, and the conclusion serves as a summary. Figure 2 provides a sample memo using the format explained above.

Figure 2. Sample memo (click image for an accessible PDF)

1. Lewis, L. (2009, February 13). Panasonic orders staff to buy £1,000 in products. Retrieved from http://business.timesonline.co.uk/tol/business/markets/japan/article5723942.ece



Five tips for effective business memos

Audience orientation

Always consider the audience and their needs when preparing a memo. An acronym or abbreviation that is known to management may not be known by all the employees of the organization, and if the memo is to be posted and distributed within the organization, the goal is clear and concise communication at all levels with no ambiguity.

Professional, formal tone

Memos are often announcements, and the person sending the memo speaks for a part or all of the organization. While it may contain a request for feedback, the announcement itself is linear, from the organization to the employees. The memo may have legal standing as it often reflects policies or procedures, and may reference an existing or new policy in the employee manual, for example.

Subject emphasis

The subject is normally declared in the subject line and should be clear and concise. If the memo is announcing the observance of a holiday, for example, the specific holiday should be named in the subject line—for example, use "Thanksgiving weekend schedule" rather than "holiday observance."

Direct format

Some written business communication allows for a choice between direct and indirect formats, but memorandums are always direct. The purpose is clearly announced.

Objectivity

Memos are a place for just the facts, and should have an objective tone without personal bias, preference, or interest on display. Avoid subjectivity.

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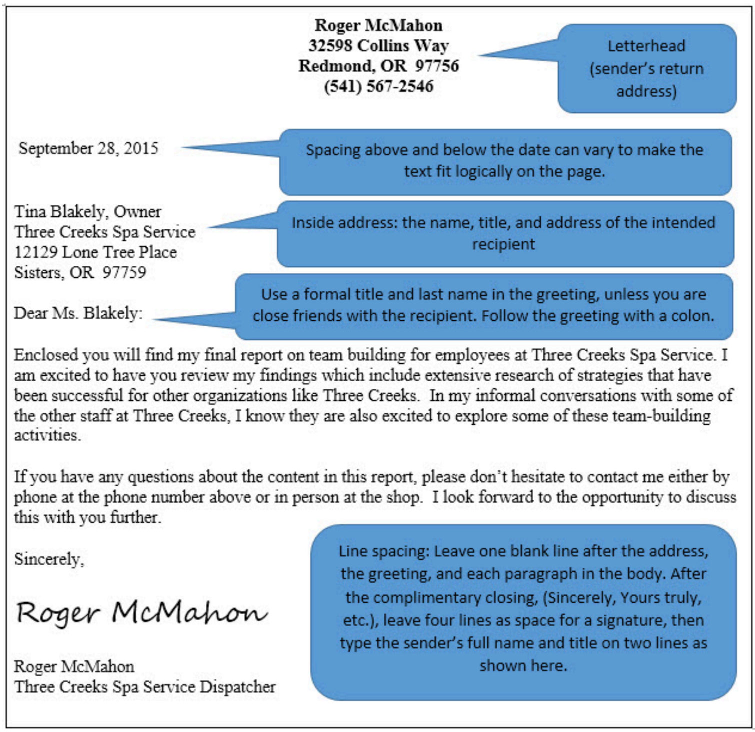
1.5 Letters

Letters are usually brief messages (one to two pages) sent to recipients that are often outside the organization. They are often printed on letterhead paper and represent the business or organization. While e-mail and text messages may be used more frequently today, the effective business letter remains a common form of written communication. It can serve to introduce you to a potential employer, announce a product or service, or even serve to communicate feelings and emotions. We'll examine the basic outline of a letter and then focus on specific products or, if for a college course, writing assignments.

All letters have expectations in terms of language and format. The audience or readers may have their own ideas of what constitutes a specific type of letter, and your organization may have its own format and requirements. This chapter outlines common elements across letters, and attention should be directed to the expectations associated with your particular writing assignment. There are many types of letters, and many adaptations in terms of form and content, but in this chapter, we discuss the fifteen elements of a traditional block-style letter. Letters may serve to introduce your skills and qualifications to prospective employers, deliver important or specific information, or serve as documentation of an event or decision. Figure 3 demonstrates a cover letter that might introduce a technical report to its recipient.

Figure 3. Sample cover letter (click image for an accessible PDF)



Roger McMahon
32598 Collins Way
Redmond, OR 97756
(541) 567-2546

September 28, 2015

Tina Blakely, Owner
Three Creeks Spa Service
12129 Lone Tree Place
Sisters, OR 97759

Dear Ms. Blakely:

Enclosed you will find my final report on team building for employees at Three Creeks Spa Service. I am excited to have you review my findings which include extensive research of strategies that have been successful for other organizations like Three Creeks. In my informal conversations with some of the other staff at Three Creeks, I know they are also excited to explore some of these team-building activities.

If you have any questions about the content in this report, please don't hesitate to contact me either by phone at the phone number above or in person at the shop. I look forward to the opportunity to discuss this with you further.

Sincerely,

Roger McMahon

Roger McMahon
Three Creeks Spa Service Dispatcher

Strategies for effective letters

Remember that a letter has five main areas:

1. The heading, which names the recipient, often including address and date
2. The introduction, which establishes the purpose
3. The body, which articulates the message
4. The conclusion, which restates the main point and may include a call to action
5. The signature line, which sometimes includes the contact information

Always remember that letters represent you and your company in your absence. In order to communicate effectively and project a positive image, remember that

- your language should be clear, concise, specific, and respectful;
- each word should contribute to your purpose;
- each paragraph should focus on one idea;
- the parts of the letter should form a complete message;
- the letter should be free of errors.

Letters with specific purposes

Cover letters. When you send a report or some other document to your supervisor, send it with a cover letter that briefly explains the purpose of the report and your major findings. Although your supervisor may have authorized the project and received periodic updates from you, s/he probably has many other employees and projects going and would benefit from a reminder about your work.

Letters of inquiry. You may want to request information about a company or organization such as whether they anticipate job openings in the near future or whether they fund grant proposals from non-profit groups. In this case, you would send a letter of inquiry, asking for additional information. As with most business letters, keep your request brief, introducing yourself in the opening paragraph and then clearly stating your purpose and/or request in the second paragraph. If you need very specific information, consider placing your requests in list form for clarity. Conclude in a friendly way that shows appreciation for the help you will receive.

Job application letters. Whether responding to job announcements online or on paper, you are likely to write a job application letter introducing yourself and your skills to a potential employer. This letter often sets a first impression of you, so demonstrate professionalism in your format, language use, and proofreading of your work. Depending on the type of job you are seeking, application letters will vary in length and content. In business, letters are typically no more than one page and simply highlight skills and qualifications that appear in an accompanying resume. In education, letters are typically more fully developed and contain a more detailed discussion of the applicant's experience and how that experience can benefit the institution. These letters provide information that is not necessarily evident in an enclosed resume or curriculum vitae.

Follow-up letters. Any time you have made a request of someone, write a follow-up letter expressing your appreciation for the time your letter-recipient has taken to respond to your needs or consider your job application. If you have had a job interview, the follow-up letter thanking the interviewer for his/her time is especially important for demonstrating your professionalism and attention to detail.

Letters within the professional context may take on many other purposes, but these four types of letters are some of the most common that you will encounter. For additional examples of professional letters, take a look at the sample letters provided by David McMurrey in his online textbook on technical writing: https://www.prismnet.com/~hcexres/textbook/models.html

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2. AUDIENCE ANALYSIS

The audience of a technical writing—or any piece of writing for that matter—is the intended or potential reader or readers. For most technical writers, this is *the most important* consideration in planning, writing, and reviewing a document. You "adapt" your writing to meet the needs, interests, and background of the readers who will be reading your writing. In reality, the lack of audience analysis and adaptation is one of the root causes of most of the problems you find in professional, technical documents—particularly instructions where it surfaces most glaringly.

Note: Once you've read this chapter on audiences, try using the audience planner. You fill in blanks with answers to questions about your audience and then e-mail it to yourself and, optionally, to your instructor. Use the audience planner for any writing project as a way of getting yourself to think about your audience in detail.

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2.1 Types of audiences

One of the first things to do when you analyze an audience is to identify its type (or types—it's rarely just one type). The common division of audiences into categories is as follows:

- **Experts:** These are the people who know the business or organization (and possibly the theory and the product) inside and out. They designed it, they tested it, they know everything about it. Often, they have advanced degrees and operate in academic settings or in research and development areas of the government and technology worlds.
- **Technicians:** These are the people who build, operate, maintain, and repair the items that the experts design and theorize about. Theirs is a highly technical knowledge as well, but of a more practical nature.
- **Executives:** These are the people who make business, economic, administrative, legal, governmental, political decisions about the products of the experts and technicians. Executives are likely to have as little technical knowledge about the subject as nonspecialists. For many of you, this will be the primary audience.
- **Nonspecialists:** These readers have the least technical knowledge of all. They want to use the new product to accomplish their tasks; they want to understand the new power technology enough to know whether to vote for or against it in the upcoming bond election. Or, they may just be curious about a specific technical matter and want to learn about it—but for no specific, practical reason. Chances are, these readers will represent your secondary audience.

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2.2 Audience analysis

It's important to determine which of the four categories just discussed represent your potential audience(s), but that's not the end of it. Audiences, regardless of category, must also be analyzed in terms of characteristics such as the following:

- **Background—knowledge, experience, training:** One of your most important concerns is just how much knowledge, experience, or training you can expect in your readers. If you expect some of your readers to lack certain background, do you automatically supply it in your document? Consider an example: imagine you are writing a guide to using a software product that runs under Microsoft Windows. How much can you expect your readers to know about Windows? If some are likely to know little about Windows, should you provide that information? If you say no, then you run the risk of customers getting frustrated with your product. If you say yes to adding background information on Windows, you increase your work effort and add to the page count of the document (and thus to the cost). Obviously, there's no easy answer to this question—part of the answer may involve just how small a segment of the audience needs that background information.
- **Needs and interests:** To plan your document, you need to know what your audience is going to expect from that document. Imagine how readers will want to use your document; what they will demand from it. For example, imagine you are writing a manual on how to use a new smartphone—what are your readers going to expect to find in it? Imagine you are under contract to write a background report on global warming for a national real estate association—what do readers want to read about; and, equally important, what do they *not* want to read about?

- **Other demographic characteristics:** And of course there are many other characteristics about your readers that *might* have an influence on how you should design and write your document—for example, age groups, type of residence, area of residence, gender, political preferences, and so on.

Audience analysis can get complicated by at least two other factors: mixed audience types for one document, wide variability within audience, and unknown audiences.

- **More than one audience:** You are likely to find that your report is for more than one audience. For example, it may be seen by technical people (experts and technicians) and administrative people (executives). What should you do in this case? You can either write all the sections so that all the audiences of your document can understand them. Or you can write each section strictly for the audience that would be interested in it, then use headings and section introductions to alert your audience about where to find relevant information in your report.
- **Wide variability in an audience:** You may realize that, although you have an audience that fits into only one category, its background varies widely. This is a tough one—if you write to the lowest common denominator of reader, you are likely to end up with a cumbersome, tedious book-like report that will turn off the majority of readers. However, if you don't write to that lowest level, you lose that segment of your readers. What should you do? Most writers go for the majority of readers and sacrifice that minority that needs more help. Others put the supplemental information in appendixes or insert cross-references to beginners' books.

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2.3 Adapting your writing to meet your audience's needs

Once you've analyzed your audience, how do you use this information? How do you keep from writing something that may potentially still be incomprehensible or useless to your readers? Draft your document with your audience's needs in mind, but remember that writing can be refined over many drafts. With each subsequent draft, think more carefully about your readers, and revise and edit your document so that you make technical information more understandable for nonspecialist audiences. The lists below are some of the ways you can adapt your writing to your audience's needs.

The following "controls" have mostly to do with making technical information more understandable for nonspecialist audiences, and they refer to information you will refine as you begin to put your final report together. However, it is a good idea to be aware of your audience's needs even in the early stages of your report drafting.

Provide the right information

Add information readers need to understand your document. Check to see whether certain key information is missing—for example, a critical series of steps from a set of instructions; important background that helps beginners understand the main discussion; definition of key terms.

Omit information your readers do not need. Unnecessary information can also confuse and frustrate readers—after all, it's there so they feel obligated to read it. For example, you can probably chop theoretical discussion from basic instructions.

Change the level of the information you currently have. You may have the right information but it may be "pitched" at too high or too low a technical level. It may be pitched at the wrong kind of audience—for example, at an expert audience rather than a technician audience. This happens most often when product-design notes are passed off as instructions.

Add examples to help readers understand. Examples are one of the most powerful ways to connect with audiences, particularly in instructions. Even in a non-instructional text, for example, when you are trying to explain a technical concept, examples are a major help—analogies in particular.

Change the level of your examples. You may be using examples but the technical content or level may not be appropriate to your readers. Homespun examples may not be useful to experts; highly technical ones may totally miss your nonspecialist readers.

Guide your reader through your writing

Change the organization of your information. Sometimes, you can have all the right information but arrange it in the wrong way. For example, there can be too much background information up front (or too little) such that certain readers get lost. Sometimes, background information needs to be consolidated into the main information—for example, in instructions it's sometimes better to feed in chunks of background at the points where they are immediately needed.

Strengthen transitions. It may be difficult for readers, particularly nonspecialists, to see the connections between the main sections of your report, between individual paragraphs, and sometimes even between individual sentences. You can make these connections much clearer by adding *transition words* and by echoing *key words* more accurately. Words like "therefore," "for example," "however" are transition words—they indicate the logic connecting the previous thought to the upcoming thought. You can also strengthen transitions by carefully echoing the same key words. A report describing new software for architects might use the word software several times on the same page or even in the same paragraph. In technical prose, it's *not* a good idea to vary word choice—use the same words so that people don't get any more confused than they may already be.

Write stronger introductions—both for the whole document and for major sections. People seem to read with more confidence and understanding when they have the "big picture"—a view of what's coming, and how it relates to what they've just read. Therefore, write a strong introduction to the entire document—one that makes clear the topic, purpose, audience, and contents of that document. And for each major section within your document, use mini-introductions that indicate at least the topic of the section and give an overview of the subtopics to be covered in that section.

Create topic sentences for paragraphs and paragraph groups. It can help readers immensely to give them an idea of the topic and purpose of a section (a group of paragraphs) and in particular to give them an overview of the subtopics about to be covered. Road maps help when you're in a different state!

Craft effective sentences

Change sentence style and length. How you write—down at the individual sentence level—can make a big difference too. In instructions, for example, using imperative voice and "you" phrasing is vastly more understandable than the passive voice or third-personal phrasing. For some reason, personalizing your writing style and making it more relaxed and informal can make it more accessible and understandable. Passive, person-less writing is harder to read—put people and action in your writing. Similarly, go for active verbs as opposed to *be* verb phrasing. All of this makes your writing more direct and immediate—readers don't have to dig for it. And obviously, sentence length matters as well. An average of somewhere between 15 and 25 words per sentence is about right; sentences over 30 words are to be mistrusted.

Edit for sentence clarity and economy. This is closely related to the previous "control" but deserves its own spot. Often, writing style can be so wordy that it is hard or frustrating to read. When you revise your rough drafts, put them on a diet—go through a draft line by line trying to reduce the overall word, page, or line count by 20 percent. Try it as an experiment and see how you do. You'll find a lot of fussy, unnecessary detail and inflated phrasing you can chop out.

Make your document visually appealing

Add and vary graphics. For nonspecialist audiences, you may want to use more graphics—and simpler ones at that. Graphics for specialists are more detailed, more technical. In technical documents for nonspecialists, there also tend to be more "decorative" graphics—ones that are attractive but serve no strict informative or persuasive purpose at all.

Break text up or consolidate text into meaningful, usable chunks. For nonspecialist readers, you may need to have shorter paragraphs. Maybe a 6- to 8-line paragraph is the usual maximum. Notice how much longer paragraphs are in technical documents written for specialists.

Add cross-references to important information. In technical information, you can help nonspecialist readers by pointing them to background sources. If you can't fully explain a topic on the spot, point to a section or chapter where it is.

Use headings and lists. Readers can be intimidated by big dense paragraphs of writing, uncut by anything other than a blank line now and then. Search your rough drafts for ways to incorporate headings—look for changes in topic or subtopic. Search your writing for listings of things—these can be made into vertical lists. Look for paired listings such as terms and their definitions—these can be made into two-column lists. Of course, be careful not to force this special formatting, and don't overdo it.

Use special typography, and work with margins, line length, line spacing, type size, and type style. For nonspecialist readers, you can do things like making the lines shorter (bringing in the margins), using larger type sizes, and other such tactics. Typically, sans-serif fonts, such as Ariel, are useful for online readers. Serif fonts, such as Time New Roman, are useful for print texts.

By now you should be able to see that many of the decisions you make as a technical writer depend on who will read your report. From content, to language, to layout, every aspect of your communication must keep your readers' needs in mind.

We will spend time later in this book expanding our discussion of audience as well as document design–an important consideration that can help tremendously in making your document professional and easy to read.

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3. PROPOSALS

This chapter focuses on the proposal–the kind of document that gets you or your organization approved or hired to complete a project. It is your opportunity to pitch your idea for change (often times an improvement) within an organization. Proposals often demonstrate that a problem exists that needs attention and address a very specific audience with the authority to move your suggestions forward.

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3.1 Some preliminaries

In a technical writing course, the proposal assignment is an opportunity for you to present an idea to a specific, named audience about an idea you have to improve a certain aspect of that company, organization, center, or other business. Whatever topic you choose, you must be able to conduct thorough research that you will integrate into your final report.

To begin planning a proposal, remember the basic definition: a proposal is an offer or bid to complete a project for someone. Proposals may contain other elements—technical background, recommendations, results of surveys, information about feasibility, and so on. But what makes a proposal a proposal is that it asks the audience to approve, fund, or grant permission to do the proposed project.

A proposal should contain information that would enable the audience of that proposal to decide whether to approve the project, to approve or hire you to do the work, or both. To write a successful proposal, put yourself in the place of your audience—the recipient of the proposal—and think about what sorts of information that person would need in order to feel confident having you complete the project.

It is easy to confuse proposals with other kinds of documents in technical writing. Imagine that you have a terrific idea for installing some new technology where you work, and you write up a document explaining how it work, showing the benefits, and then urging management to install it. Is that a proposal? All by itself, this would not be a complete proposal. It would be more like a feasibility report, which studies the merits of a project and then recommends for or against it. However, all it would take to make this document a proposal would be to add elements that ask management for approval for you to go ahead with the project. Additionally, for some technical writing classes offered in college, one of those elements may be scholarly research. Check with your instructor to see if this is the case. Certainly, some writers of proposals must sell the projects they propose, but in all cases, proposals must sell the writer (or the writer's organization) as the one to complete the project.

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3.2 Types of proposals

Consider the situations in which proposals occur. A company may send out a public announcement requesting proposals for a specific project. This public announcement—called a request for proposals (RFP)—could be issued through websites, emails, social media, newspapers, or trade journals. Firms or individuals interested in the project would then write proposals in which they summarize their qualifications, project schedules and costs, and discuss their approach to the project. The recipient of all these proposals would then evaluate them, select the best candidate, and then work up a contract.

But proposals also come about much less formally. Imagine that you are interested in doing a project at work (for example, investigating the merits of bringing in some new technology to increase productivity). Imagine that you met with your supervisor and tried to convince her of this. She might respond by saying, "Write me a proposal and I'll present it to upper management." This is more like the kind of proposal you will write in a technical writing course.

Most proposals can be divided into several categories:

- Internal, external: A proposal to someone within your organization (a business, a government agency, etc.) is an internal proposal. With internal proposals, you may not have to include certain sections (such as qualifications) or as much information in them. An external proposal is one written from one separate, independent organization or individual to another such entity. The typical example is the independent consultant proposing to do a project for another firm. This kind of proposal may be solicited or unsolicited, as explained below.
- Solicited, unsolicited: A solicited proposal is one in which the recipient has requested the proposal. Typically, a company will

send out requests for proposals (RFPs) through the mail or publish them in some news source. But proposals can be solicited on a very local level: for example, you could be explaining to your boss what a great thing it would be to install a new technology in the office; your boss might get interested and ask you to write up a proposal that offered to do a formal study of the idea. Unsolicited proposals are those in which the recipient has not requested proposals. With unsolicited proposals, you sometimes must convince the recipient that a problem or need exists before you can begin the main part of the proposal.

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3.3 Typical scenarios for the proposal

Many of you may have never given much thought to producing a technical report based on a viable proposal. Here are some sample proposal ideas to ponder:

- Imagine that a company has a problem or wants to make some sort of improvement. The company sends out a request for proposals; you receive one and respond with a proposal. You offer to come in, investigate, interview, make recommendations—and present it all in the form of a report.
- An organization wants a seminar in your expertise. You write a proposal to give the seminar—included in the package deal is a guide or handbook that the people attending the seminar will receive.
- An agency has just started using a new online data system, but the user's manual is technically complex and difficult to read. You receive a request for proposals from this agency to write a simplified guide or startup guide.
- Imagine that a nonprofit organization focused on a particular issue wants an consultant to write a handbook or guide for its membership. This document will present information on the issue in a way that the members can understand.

Not all research topics are appropriate for technical writing. Topics that are based on values and beliefs do not fall into the category of technical. Historical and literary topics do not qualify.

If your technical writing course requires that you integrate scholarly research into your final report, choose a topic for which you can readily find such material. While interviews and other first-hand sources are often valuable to a report, one that relies heavily on these sources may not meet the outcomes of your particular course.

Always check with your instructor about any topic ideas you have before starting on your project.

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3.4 Common sections in proposals

The following provides a review of the sections you will commonly find in proposals. Do not assume that each one of them has to be in the actual proposal you write, nor that they have to be in the order they are presented here. Refer to the assignment sheet provided by your instructor and consider other kinds of information unique to your topic that should be included in your particular proposal.

Introduction. Plan the introduction to your proposal carefully. Make sure it does all of the following things (but not necessarily in this order) that apply to your particular proposal:

- Indicate that the content of the memo is a proposal for a specific project.
- Develop at least one brief motivating statement that will encourage the recipient to read on and to consider approving the project (especially if it is an unsolicited or competitive proposal).
- Give an overview of the contents of the proposal.

Background on the problem, opportunity, or situation. Often occurring just after the introduction, the background section discusses what has brought about the need for the project—what problem, what opportunity exists for improving things, what the basic situation is. For example, management of a chain of day care centers may need to ensure that all employees know CPR because of new state mandates requiring it, or an owner of pine timber land in eastern Oregon may want to get the land producing saleable timber without destroying the environment.

While the named audience of the proposal may know the problem very well, writing the background section is useful in demonstrating your particular view of the problem. Also, if the the proposal is unsolicited, a background section is almost a requirement—you will probably need to convince the audience that the problem or opportunity exists and that it should be addressed.

Benefits and feasibility of the proposed project. Most proposals briefly discuss the advantages or benefits of completing the proposed project. This acts as a type of argument in favor of approving the project. Also, some proposals discuss the likelihood of the project's success. In an unsolicited proposal, this section is especially important—you are trying to "sell" the audience on the project.

Description of the proposed work (results of the project). Most proposals must describe the finished product of the proposed project. In a technical writing course, that means describing the written document you propose to write, its audience and purpose; providing an outline; and discussing such things as its length, graphics, binding, and so forth. In the scenario you define, there may be other work such as conducting training seminars or providing an ongoing service. At this early stage, you might not know all that it will take to complete your project, but you should at least have an idea of some of the steps required.

Method, procedure, theory. In some proposals, you will need to explain how you will go about completing the proposed work. This acts as an additional persuasive element; it shows the audience you have a sound, thoughtful approach to the project. Also, it serves to demonstrate that you have the knowledge of the field to complete the project.

Schedule. Most proposals contain a section that shows not only the projected completion date but also key milestones for the project. If you are doing a large project spreading over many months, the timeline would also show dates on which you would deliver progress reports. If you cannot cite specific dates, cite amounts of time for each phase of the project.

Costs, resources required. Most proposals also contain a section detailing the costs of the project, whether internal or external. With external projects, you may need to list your hourly rates, projected hours, costs of equipment and supplies, and so forth, and then calculate the total cost of the complete project. Internal projects, of course, are not free, so you should still list the project costs: hours you will need to complete the project, equipment and supplies you will be using, assistance from other people in the organization, and so on.

Conclusions. The final paragraph or section of the proposal should bring readers back to a focus on the positive aspects of the project. In the final section, you can urge them to contact you to work out the details of the project, remind them of the benefits of doing the project, and maybe make one last argument for you or your organization as the right choice for the project.

Special project-specific sections. Remember that the preceding sections are typical or common in written proposals, not absolute requirements. Always ask yourself what else might your audience need to understand the project, the need for it, the benefits arising from it, your role in it, and your qualifications to do it. What else do they need to see in order to approve the project and to approve you to do it?

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3.5 Special assignment requirements

Depending on the writing situation, your proposal may need to include other specialized elements as well. Your supervisor might ask you to include in your proposal any of the following:

Audience: Describe the audience of the final report (which may be different than the audience for the proposal). You may need to discuss for whom the report is designed, their titles and jobs, their technical background, and their ability to understand the report.

Information sources: List information sources; make sure you know that there is adequate information for your topic; list citations for specific books, articles, reference works, other kinds of sources that you think will contribute to your report.

Graphics: List the graphics you think your report will need according to their type and their content. (If you cannot think of any your report would need, you may not have a good topic—do some brainstorming with your instructor.)

Outline: Include an outline of the topics and subtopics you think you will cover in your report.

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3.6 Proposals and audience

Remember that, in a technical writing course, the proposal assignment serves several purposes: (1) it gives you some experience in writing a proposal; (2) it gets you started planning your major assignment; (3) it gives your instructor a chance to work with you on your project, to make sure you have a viable topic. For the second and third reasons, you need to include specific elements in your proposal (as noted in your assignment sheet) some of which may not seem appropriate in a real-world proposal.

The proposal is often the beginning of a weeks-long research and writing process that goes through many stages until it gets to the end point: the technical report. In this case, you only submit the proposal once during this process. After that, you may write and submit different types of documents: a progress report, an outline, an annotated bibliography, a graphics draft, a report draft, and a final report. Be careful to use the term "proposal" only if you are specifically referring to the proposal stage of your project.

Another point to keep in mind relates to the audience for different kinds of documents that may be produced for the same project. Consider the example of a proposal written to a supervisor at a solar power company suggesting the creation of a policy manual for residential solar panel installers. The proposal's audience may be an executive, whose knowledge of the technicalities may be very broad. Let's imagine the executive approves the proposal and requests completion of the manual, which will be produced well after the proposal. The manual's audience is the technicians, who may have more specialized knowledge than the executive. The content and language used for these two different audiences will need to be adjusted to fit the writing situation. (For more on this, review the chapter on Audience Analysis.)

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3.7 Revision checklist for proposals

As you review and revise your proposal, keep the following in mind:

- Use the right format. Check with your instructor to insure you are using the format requested and look at any samples provided.
- Write a clear summary of (or introduction to) your proposal topic.
- Identify exactly what you are proposing to do.
- Ensure that a report—a written document—is somehow involved in the project you are proposing to do if that is what your instructor has assigned.
- Ensure that the sections of your proposal are in a logical, natural order and that you use sub-headers and bullets (and any other formatting styles) correctly.
- Address the proposal to your named audience—not your instructor.

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4. INFORMATION LITERACY

What does it mean to be information literate? Simply stated, information literate individuals "know how to find, evaluate and use information effectively."[1]

In college, you typically find, evaluate, and use information to satisfy the requirements of an assignment. Assignments often specify what kind of information you need and what tools you should use – or avoid – in your research. For example, your professor may specify that you need three peer-reviewed resources from academic articles and that you should not cite Wikipedia in your final paper. However, in life beyond college – especially the work world – you may not have that kind of specific guidance. You need to be information literate in order to plan and perform your own research efficiently, effectively, and with the needs of your audience in mind.

You might be thinking, "Research? I've got that covered. That's what the Internet is for, right?" In fact, it is much more than doing a simple search engine query and reviewing the first ten results it returns. A 2012 study by Project Information Literacy (PIL) interviewed 33 employers and found that they were dissatisfied with the research skills of recently graduated hires. Employers cited recent graduates' over-reliance on online search tools and the first page of results as reasons for their dissatisfaction. Research performed by recent graduates was too superficial and lacked

1. American Library Association. (1989). Presidential Committee on Information Literacy: Final Report. Retrieved from http://www.ala.org/acrl/publications/whitepapers/presidential.

analysis and synthesis of multiple types of information from a variety of sources.[2]

In this chapter, you will learn

- how to identify different information formats;
- where to conduct your research;
- how to search effectively;
- how to evaluate sources you find

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2. Head, A.J. (2012). Learning Curve: How College Graduates Solve Problems Once They Join the Workforce. (Project Information Literacy Research Report: The Passage Series). Retrieved from http://projectinfolit.org/images/pdfs/pil_fall2012_workplacestudy_fullreport_revised.pdf.

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- Search Strategies: Advanced Search Techniques derived from Database Search Tips: Boolean Operators by MIT Libraries, CC: BY-NC 2.0
- Evaluate Sources derived from Evaluating Information by Virginia Tech Libraries, CC: BY-NC-SA 4.0

4.1 Information formats

Traditionally, information has been organized in different formats, usually because of the time it takes to gather and publish the information. For example, the purpose of news reporting is to inform the public about the basic facts of an event. This information needs to be disseminated quickly, so it is published daily in print, online, on broadcast television, and radio media.

Today, publication of information in traditional formats continues as well as in constantly evolving formats on the Internet. These new information formats can include electronic journals, e-books, news websites, blogs, Twitter, Facebook, and other social media sites. The coexistence of all of these information formats is messy and chaotic, and the process for finding relevant information is not always clear.

One way to make some sense out of the current information universe is to understand thoroughly traditional information formats. You can then understand the concepts inherent in the information formats found online. There are some direct correlations such as books and journal articles, but there are also some newer formats like tweets that didn't exist until recently.

Primary and secondary information sources

Primary sources allow researchers to get as close as possible to original ideas, events, and empirical research as possible. Such sources may include creative works, first hand or contemporary accounts of events, and the publication of the results of empirical observations or research.

Examples of primary sources are interviews, letters, emails, Tweets, Facebook posts, photographs, speeches, newspaper or magazine articles written at the time of an event, works of literature, lab notes, field research, and published scientific research.

Secondary sources analyze, review, or summarize information in primary resources or other secondary resources. Even sources presenting facts or descriptions about events are secondary unless they are based on direct participation or observation. Secondary sources analyze the primary sources.

Examples of secondary sources are journal articles, books, literature reviews, literary criticism, meta-analyses of scientific studies, documentaries, biographies, and textbooks.

Sometimes the line between primary and secondary sources blurs. For example, although newspapers and news websites contain primary source material, they also contain secondary source material. For example, an article published on November 6, 2012 about the results of the US presidential election would be a primary source, because it was written on the day of the event. However, an article published in the same paper two weeks later analyzing how the successful candidate raised money for his campaign would be a secondary source.

Table 1. Examples of primary and secondary sources for technical writing

Primary	**Secondary**
Interview with subject matter expert	Documentary on an issue or problem
Survey data	News article about scientific study
Published scientific study	Literature review on a research topic

Popular, professional, and scholarly information

At some point in your college career, you will be asked to find peer-reviewed resources on your research topic. Your professor may explain that these appear in scholarly journals. You may wonder what makes a scholarly journal article different from an article in a magazine, like *National Geographic* or *Sports Illustrated*.

Popular magazines like *People*, *Sports Illustrated*, and *Rolling Stone* can be good sources for articles on recent events or pop-culture topics, while magazines like *Harper's*, *Scientific American*, and *The New Republic* will offer more in-depth articles on a wider range of subjects. The audience for these publications are readers who, although not experts, are knowledgeable about the issues presented.

Professional journals, also called trade journals, address an audience of professionals in a specific discipline or field. They report news and trends in a field, but not original research. They may also provide product or service reviews, job listings, and advertisements.

Scholarly journals provide articles of interest to experts or researchers in a discipline. An editorial board of respected scholars in a discipline (peers of the authors) reviews all articles submitted to a journal. They decide if the article provides a noteworthy contribution to the field and should be published. Scholarly journals contain few or no advertisements. Scholarly journal articles will include references of works cited and may also have footnotes or endnotes, all of which rarely appear in popular or professional publications.

Peer review is a widely accepted indicator of quality scholarship in a given discipline or field. Peer-reviewed (or refereed) journals are scholarly journals that only publish articles that have passed through this review process.

You can better understand peer-review by watching the video "Peer Review in 3 Minutes."

Video credit: Peer Review in 3 Minutes by NCSU Libraries, CC: BY-NC-SA 3.0 US

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Table 2. Differences among magazines, professional journals, and scholarly journals

Example	[National Geographic magazine cover] Magazine	[Food Technology professional publication cover] Professional journal	[Journal of Morphology cover] Academic journal
Audience	General public	People employed in a field	Researchers, scholars, experts
Bibliography	No	Sometimes	Yes
Article length/ depth Structure	• Overview • Current events • General interest articles	• Articles will be of interest to those working in that field • Purpose will be to offer advice and tips to those in the trade	• Long and narrowly focused • Specialized vocabulary • Article structure will usually contain abstract, literature review, methodology, results, conclusion, references
Review policy	Magazine editor	Magazine editor and possibly a board	Editorial board/ scholars in the field Peer-reviewed
Author	Journalist or specialist	Someone working in the field	Researcher/ expert in the field
Appearance	• Glossy • Many graphics • Many advertisements	• Glossy • Advertising specific to that trade	• Lengthy articles • Often includes charts, graphs, statistics • Little or no advertising

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4.2 The information timeline

Another difference in popular, professional, and scholarly sources lies in when information appears in these types of sources. Information about an event or issue appears in publications according to a predictable pattern known as the information timeline. Familiarity with the information timeline can help you best plan your research topics and where to search for information. For example, it typically takes several months to years for information about an event or issue to appear in scholarly publications. If you choose a topic that is very recent, you may have to rely more heavily on news media, popular magazines, and primary sources (such as interviews you conduct) for your research.

Table 3. The information timeline and typical sources.

Time:	Day of event	Days later	Weeks later	Months later	Year(s) later
Sources	Television, radio, web	Newspapers, TV, radio, web	Popular and mass market magazines	Professional and scholarly journals	Scholarly journals, books conference proceedings Reference sources such as encyclopedias
Type of information	General: who, what, where (usually not why)	Varies, some articles include analysis, statistics, photographs, editorials, opinions	Still in reporting stage, general, editorial, opinions, statistics, photographs Usually no bibliography at this stage	Research results, detailed and theoretical discussion Bibliography available at this stage	In-depth coverage of a topic, edited compilations of scholarly articles relating to a topic General overview giving factual information Bibliography available
Locating tools	Web search tools, social networks	Web search tools, newspaper and periodical databases	Web search tools, newspaper and periodical databases	General and subject-specific databases	Library catalog general and subject-specific databases Library reference collection

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The Information Timeline derived by Annemarie Hamlin, Chris Rubio, and Michele DeSilva, Central Oregon Community College, from Information Timeline by Virginia Tech Libraries, CC: BY-NC-SA 4.0

4.3 The research cycle

Although information publication follows a linear timeline, the research process itself is not linear. For example, you might start by trying to read scholarly articles, only to discover that you lack the necessary background knowledge to use a scholarly article effectively. To increase your background information, you might consult an encyclopedia or a book on your topic. Or, you may encounter a statement in a newspaper editorial that inspires you to consult the scholarly literature to see if research supports the statement.

The important thing to remember is that you will probably start your research at different points and move around among resource types depending on the type of information you need.

Figure 1. The research cycle

Image Credit: [A Cycle of Revolving Research] *by UC Libraries,* [CC: BY-NC-SA 3.0]

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The Research Cycle derived by Annemarie Hamlin, Chris Rubio, and Michele DeSilva, Central Oregon Community College, from A Cycle of Revolving Research by UC Libraries, CC: BY-NC-SA 3.0

4.4 Research tools

Databases

Very often, you will want articles on your topic, and the easiest way to find articles is to use a research database – a specialized search engine for finding articles and other types of content. For example, if your topic is residential solar power, you can use a research database to look in thousands of journal titles at once and find the latest scientific and technical research articles – articles that don't always show up in your Google searches. Depending on the database you are using, you might also find videos, images, diagrams, or e-books on your topic, too. Most databases require subscriptions for access; check with your college, public, or corporate library to see what databases they subscribe to for you to use. Whether they are subscription-based or free, research databases contain records of journal articles, documents, book chapters, and other resources and are not tied to the physical items available at any one library. Many databases provide the full-text of articles and can be searched by keyword, subject, author, or title. A few databases provide just the citations for articles, but they usually also provide tools for you to find the full text in another database or request it through interlibrary loan. Databases are made up of records, and records contain fields, as explained below:

- Records: A record describes one information item (e.g., journal article, book chapter, image, etc.).
- Fields: These are part of the record, and they contain descriptions of specific elements of the information item such as the title, author, publication date, and subject.

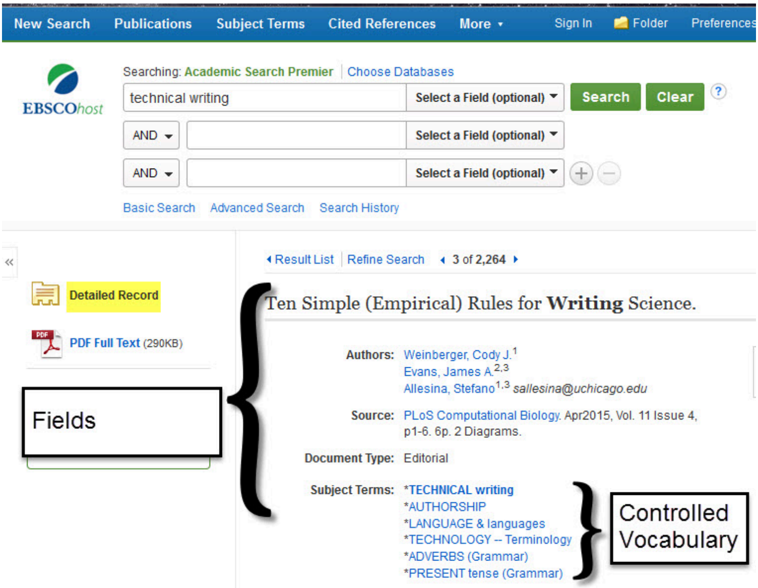
Another aspect of databases to know about is controlled vocabulary.

Look for the label subject term, subject heading or descriptor. Regardless of label, this field contains controlled vocabulary, which are designated terms or phrases for describing concepts. It's important because it pulls together all of the items in that database about one topic. For example, imagine you are searching for information on community colleges. Different authors may call community colleges by different names: junior colleges, two-year colleges, or technical colleges. If the controlled vocabulary term in the database you are searching is "community colleges," then your one search will pull up all results, regardless of what term the author uses.

Databases may seem intimidating at first, but you likely use databases in everyday life. For example, do you store contact information in your phone? If so, you create a record for everyone for whom you want to store information. In each of those records, you enter descriptions into fields: first and last name, phone number, email address, and physical address. If you wanted to organize your contacts, you might put them into groups of "work," "family," and "friends." That would be your controlled vocabulary for your own database of contacts.

The image below shows a detailed record for a journal article from a common research database, Academic Search Premier. The fields and controlled vocabulary are labeled.

Figure 2. Fields and controlled vocabulary



General

Databases that contain resources for many subject areas are referred to as general or multidisciplinary databases. This means that they are good starting points for research because they allow you to search a large number of sources from a wide variety of disciplines. Content types in general databases often include a mix of professional publications, scholarly journals, newspapers, magazines, books, and multimedia.

Common general databases in academic settings include

- Academic Search Premier
- Academic OneFile
- JSTOR

Specialized

Databases devoted to a single subject are known as subject-specific or specialized databases. Often, they search a smaller number of journals or a specific type of content. Specialized databases can be very powerful search tools after you have selected a narrow research topic or if you already have a great deal of expertise in a particular area. They will help you find information you would not find in a general database. If you are not sure which specialized databases are available for your topic, check your library's website for subject guides, or ask a librarian.

Specialized databases may also focus on offering one specific content type like streaming films, music, images, statistics, or data sets.

Table 4. Examples of specialized databases and their subject focus

Database	**Subject Focus**
PsycInfo	Psychology
BioOne	Life Sciences
MEDLINE	Medicine/health
ARTstor	Fine arts images

Library catalogs

A library catalog is a database that contains all of the items located in a library as well as all of the items to which the library offers access, either in physical or online format. It allows you to search for items by title, author, subject, and keyword. Like research databases, library catalogs use controlled vocabulary to allow for powerful searching using specific terms or phrases.

If you locate a physical item in a catalog, you will need the call number to find the item in the library. A call number is like a street address for a book; it tells you exactly where the book is on the shelf. Most academic libraries will use the Library of Congress classification system, and the call numbers start with letters, followed by a mix of numbers and letters. In addition to helping you find a book, call numbers group items about a given topic together in a physical place. The image below shows an example of the location of a call number in a library catalog.

Figure 3. A call number in an online library catalog display

Along with physical items, most libraries also provide access to scholarly e-books, streaming films, and e-journals via their catalogs. For students and faculty, these resources are usually available from any computer, meaning you do not have to go to the library and retrieve items from the shelf.

Consortia and interlibrary loan

In the course of your research you will almost certainly find yourself in a situation where you have a citation for a journal article or book that your institution's library doesn't have. There is a wealth of knowledge contained in the resources of academic and public libraries throughout the United States. Single libraries cannot hope to collect all of the resources available on a topic. Fortunately, libraries are happy to share their resources and they do this through consortia membership and interlibrary loan (ILL). Library consortia are groups of libraries that have special agreements with one another to loan materials to one another's users. Both academic and public libraries belong to consortia.

Central Oregon Community College (COCC) belongs to a consortium of 37 academic libraries in the Pacific Northwest called the Orbis Cascade Alliance, which sponsors a shared lending program called Summit. When you search the COCC Library Catalog, your results will include items from other Summit institutions, which you can request and have delivered to the COCC campus of your choice.

Interlibrary loan (ILL) allows you to borrow books, articles and other information resources regardless of where they are located. If you find an article when searching a database that COCC doesn't have full text access to, you can request it through the interlibrary loan program. If you cannot get a book or DVD from COCC or another Summit library, you could also request it through interlibrary loan. Interlibrary loan services are available at both academic and public libraries.

Government information

Another important source of information is the government. Official United States government websites end in .gov and provide a wealth of credible information, including statistics, technical reports, economic data, scientific and medical research, and, of course, legislative information. Unlike research databases, government information is typically freely available without a subscription.

USA.gov is a search engine for government information and is a good place to begin your search, though specialized search tools are also available for many topics. State governments also have their own websites and search tools that you might find helpful if your topic has a state-specific angle. If you get lost in searching government information, ask a librarian for help. They usually have special training and knowledge in navigating government information.

Table 5. Examples of specialized government sources and their subject focus

Specialized Government Source	**Subject Focus**
PubMed Central	Medicine/health
ERIC	Education
Congress.gov	Legislation and the legislative process

Experts

People are a valuable, though often overlooked, source. This might be particularly appropriate if you are working on an emerging topic or a topic with local connections.

For personal interviews, there are specific steps you can take to obtain better results. Do some background work on the topic before contacting the person you hope to interview. The more familiarity you have with your topic and its terminology, the easier it will be to ask focused questions. Focused questions are important for effective research. Asking general questions because you think the specifics might be too detailed rarely leads to the best information. Acknowledge the time and effort someone is taking to answer your questions, but also realize that people who are passionate about subjects enjoy sharing what they know. Take the opportunity to ask experts about additional resources they would recommend.

For a successful, productive interview, review this list of Interview Tips before conducting your interview.

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Research Tools derived by Annemarie Hamlin, Chris Rubio, and Michele DeSilva, Central Oregon Community College, from The Information Literacy User's Guide edited by Greg Bobish and Trudi Jacobson, CC: BY-NC-SA 3.0 US

4.5 Search strategies

Now that you know more about the research tools available to you, it's time to consider how to construct searches that will allow you to find the most relevant, useful results as efficiently as possible.

Develop effective keywords

The single most important search strategy is to choose effective search terms. This may seem obvious, but it is too often overlooked, with deleterious consequences. When deciding what terms to use in a search, break down your topic into its main concepts. Do not enter an entire sentence or a full question. The best thing to do is to use the key concepts involved with your topic. In addition, think of synonyms or related terms for each concept. If you do this, you will have more flexibility when searching in case your first search term does not produce any or enough results. This may sound strange, since if you are looking for information using a Web search engine, you usually get too many results. Databases, however, contain fewer items than the entire web, and having alternative search terms may lead you to useful sources. Even in a search engine like Google, having terms you can combine thoughtfully will yield better results.

Figure 4. Keyword brainstorming for the topic of violence in high schools

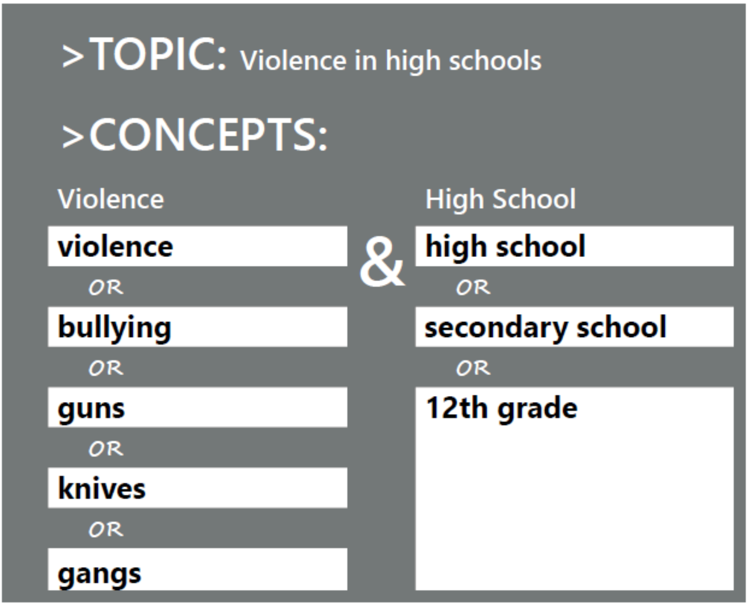


Image credit: The Information Literacy User's Guide edited by Greg Bobish and Trudi Jacobson, CC: BY-NC-SA 3.0 US

Advanced search techniques

Once you have identified the concepts you want to search and have carefully chosen your keywords, think about how you will enter them into the search box of your selected search tool. Try the techniques below in both research databases and web search engines.

Boolean operators

Boolean operators are a search technique that will help you

- focus your search, particularly when your topic contains multiple search terms
- connect various pieces of information to find exactly what you are looking for

There are three Boolean operators: AND, OR, and NOT. You capitalize Boolean operators to distinguish them from the words and, or, and not (words which most search engines ignore). It is also important to note that you should spell out AND rather than substituting commas, ampersands, or plus signs. Usually you should spell out NOT as well, except in Google, where you must use the minus sign (-).

AND

Use AND in a search to

- narrow your results
- tell the database that ALL search terms must be present in the resulting records

Example: cloning AND humans AND ethics

The purple triangle where all circles intersect in the middle of the Venn diagram below represents the result set for this search. It is a small set created by a combination of all three search words.

Figure 5. Example of search terms connected by AND

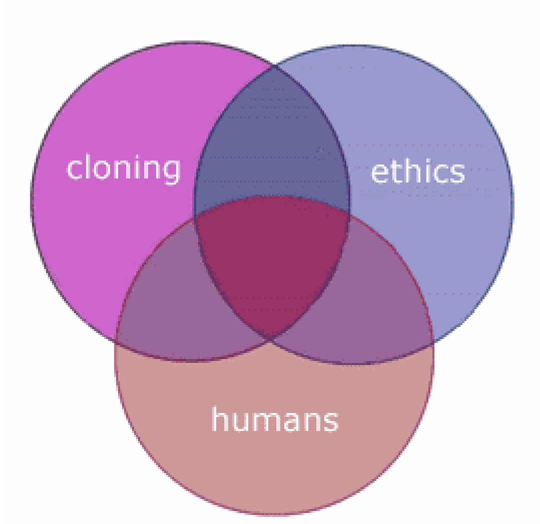


Image credit: Database Search Tips: Boolean Operators by MIT Libraries, CC: BY-NC 2.0

OR

Use OR in a search to accomplish the following:

- connect two or more similar concepts (synonyms)
- broaden your results, telling the database that any one of your search terms can be present in the resulting records

Example: (cloning OR genetics OR reproduction)

All three circles represent the result set for this search. It is a big set because the OR operator includes all of those search terms.

Figure 6. Example of search terms connected by OR

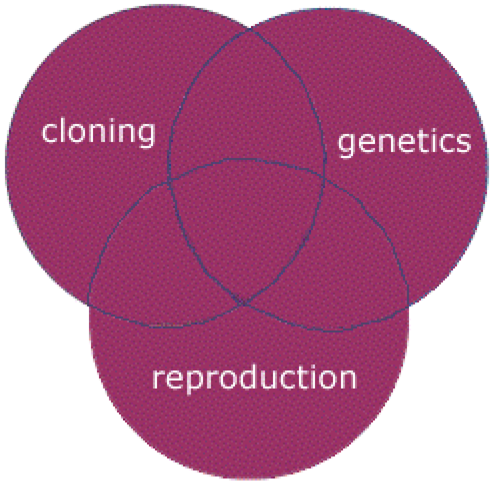


Image credit: Database Search Tips: Boolean Operators by MIT Libraries, CC: BY-NC 2.0

NOT

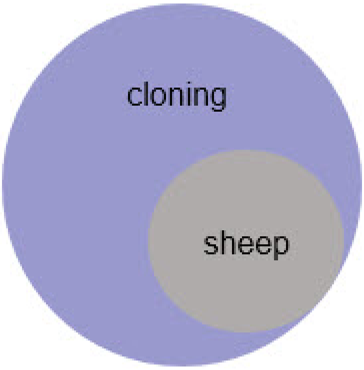
Use NOT in a search to

- exclude words from your search
- narrow your search, telling the database to ignore concepts that may be implied by your search terms

Example: cloning NOT sheep

The purple part of the circle below represents your results for this search, because you've used NOT to exclude a subset of results that are about sheep (represented by the gray circle).

Figure 7. Example of search using NOT



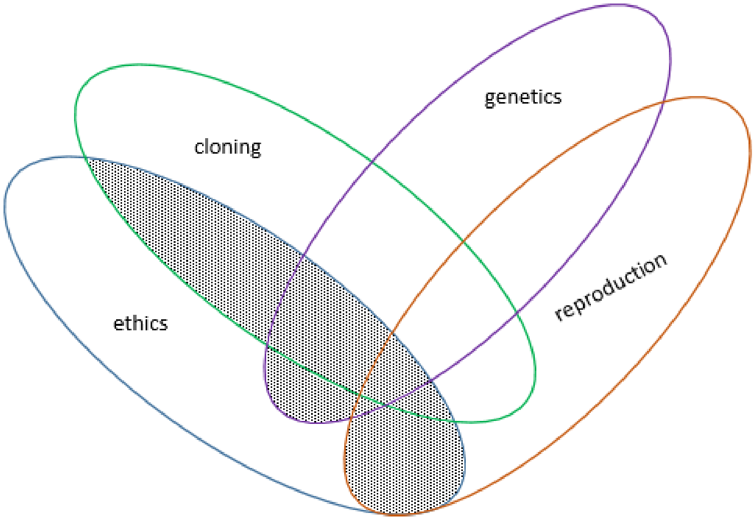
Combining operators

You can combine the different Boolean operators into one search. The important thing to know when combining operators is to use parentheses around the terms connected with OR. This ensures that the database interprets your search query correctly.

Example: ethics AND (cloning OR genetics OR reproduction)

The shaded area of the diagram below represents the results set for the above search.

Figure 8. Example of complex Boolean search that connects terms with AND and OR



Phrases

Web and research databases usually treat your search terms as separate words, meaning they look for each word appearing in a document, regardless of its location around the other words in your search term. Sometimes you may want to system to instead search for a specific phrase (a set of words that collectively describe your topic).

To do this, put the phrase in quotation marks, as in “community college.”

With phrase searches, you will typically get fewer results than searching for the words individually, which makes it an effective way to focus your search.

Truncation

Truncation, also called stemming, is a technique that allows you to search for multiple variations of a root word at once.

Most databases have a truncation symbol. The * is the most commonly used symbol, but !, ?, and # are also used. If you are not sure, check the help files.

To use truncation, enter the root of your word and end it with the truncation symbol.

Example: genetic* searches for genetic, genetics, genetically

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- Search Strategies: Develop Effective Keywords derived from The Information Literacy User's Guide edited by Greg Bobish and Trudi Jacobson, CC: BY-NC-SA 3.0 US
- Search Strategies: Advanced Search Techniques derived from Database Search Tips: Boolean Operators by MIT Libraries, CC: BY-NC 2.0

4.6 Evaluate sources

Information sources vary in quality, and before you use a source in your academic assignments or work projects, you must evaluate them for quality. You want your own work to be of high quality, credible, and accurate, and you can only achieve that by having sources possess those same qualities.

Watch this video on evaluating sources for an overview of what credibility is, why it's important, and some of the criteria to look for when evaluating a source.

Evaluating Sources Video Image Link

Video credit: Evaluating Sources for Credibility by NCSU *Libraries,* CC: BY-NC-SA 3.0 US

There are five basic criteria for evaluating information. While it may seem like a lot to think about at first, after a little practice, you will find that you can evaluate sources quickly.

Here are the five basic criteria, with key questions and indicators to help you evaluate your source:

- Authority
    - **Key Question:** Is the person, organization, or institution responsible for the intellectual content of the information knowledgeable in that subject?
    - **Indicators of authority:** formal academic degrees, years of professional experience, active and substantial involvement in a particular area
- Accuracy
    - **Key Question:** How free from error is this piece of information?
    - **Indicators of accuracy:** correct and verifiable citations,

information is verifiable in other sources from different authors/organizations, author is authority on subject
- Objectivity
    - **Key Question:** How objective is this piece of information?
    - **Indicators of objectivity:** multiple points of view are acknowledged and discussed logically and clearly, statements are supported with documentation from a variety of reliable sources, purpose is clearly stated
- Currency
    - **Key Question:** When was the item of information published or produced?
    - **Indicators of currency:** publication date, assignment restrictions (e.g., you can only use articles from the last 5 years), your topic and how quickly information changes in your field (e.g., technology or health topics will require very recent information to reflect rapidly changing areas of expertise)
- Audience
    - **Key Question:** Who is this information written for or this product developed for?
    - **Indicators of audience:** language, style, tone, bibliographies

When evaluating and selecting sources for an assignment or work project, compare your sources to one another in light of your topic. Imagine, for example, you are writing a paper about bicycle commuting. You have three sources about bicycle safety. One is written for children; one is for adult recreational bicyclers; and one is for traffic engineers. Your topic is specifically about building urban and suburban infrastructure to encourage bicycling, so the source written for traffic engineers is clearly more appropriate for your topic than the other two. Even if the other two are high-quality sources, they are not the most relevant sources for your specific topic.

Until you have practiced evaluating many sources, it can be a little difficult to find the indicators, especially in web sources.

Table 6. Locations where you might find indicators of quality in different types of sources

If you are looking for indications of…	In books see the…	In journals see the…	In websites see the…
Authority	Title page, Forward, Preface, Afterward, Dust Jackets, Bibliography	Periodical covers, Editorial Staff, Letters to the Editor, Abstract, Bibliography	URL, About Us, Publications, Appearance
Accuracy	Title page, Forward, Preface, Afterward, Periodical covers, Dust Jackets, Text, Bibliography	Periodical covers, Text, Bibliography	URL, About Us, Home page, Awards, Text
Objectivity	Forward, Preface, Afterward, Text, Bibliorgraphy	Abstracts, Text, Bibliography, Editorials, Letters to the Editor	About Us, Site Map, Text, Disclaimers, Membership/ Registration
Currency	Title page, copyright page, Bibliography	Title page, Bibliorgraphy, Abstracts	Home page, Copyright, What's New
Audience	Forward, Preface, Afterward	Letters to the editor, Editorial, Appearance	Home page, About, Mission, Disclaimer, Members only

When you have located and evaluated information for your paper, report, or project, you will use it to complete your work. A later chapter of this text will cover how to use it correctly and ethically.

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5. CITATIONS AND PLAGIARISM

Like most writers, technical writers need to demonstrate their credibility, objectivity, and thoroughness by referencing quality source material. Technical writers reveal and share source information both to give credit to the writers of that material and also to demonstrate they have done thorough research. Because this text was designed for an academic course in technical writing, this chapter describes conventions of academic citations you will use in producing a report. That said, the information will easily transfer to other professional and academic writing tasks.

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5.1 Citations

Citations are the way in which you give credit to others for their work and avoid committing plagiarism. They are also the way in which you join the professional or scholarly conversation on a given topic.

Watch this short video to learn more about why citations are important.

Citation Video from NCSU

Video credit: Citation: A (Very) Brief Introduction by NCSU Libraries, CC: BY-NC-SA 3.0 US

Citations come in two forms: in-text citations and full citations.

There are many different citation styles. Two of the most common academic styles are American Psychological Association (APA) and Modern Language Association (MLA). For academic assignments, your instructor will usually specify which style you should use. Generally speaking, MLA is used more frequently in the humanities, while APA is used more commonly in the social sciences and sciences. However, some subjects may have their own discipline-specific citation types, such as the American Society of Mechanical Engineers (ASME) style for the mechanical engineering field. Whatever style you choose or are asked to use, remember to stick with it consistently throughout your report.

In-text citations

In-text citations are used within the text of your paper and indicate to your readers from which source listed in your works cited or bibliography you are extracting information or quotations. That way, even if you have multiple sources, it is always clear which source you are using at any given time. As with full citations, discussed below, format of in-text citations differs depending on which citation style you are using. APA uses the author-year format, while MLA uses the author-page number format. Other styles of in-text citation include footnotes or endnotes, in which continuously sequenced numbers refer the reader to a list of citations elsewhere in the document. Some examples are below.

APA

Students should choose their study locations carefully for best results (Lei, 2015).

MLA

Students should choose their study locations carefully for best results (Lei 197).

In-text citations should always have a corresponding full citation on the Works Cited or References page at the end of a paper.

Full citations

Full citations generally have three major parts, though the order and formatting of these parts depends on the citation style you use.

Major parts

- Information about the person or body that created it – the author(s), editor(s), speaker(s), etc.
- Information that distinguishes the content of the specific work being cited – the title of an article, chapter, book, or presentation
- Information about the location or creation of the work – usually, where and when it was published or presented. This can include whether or not the work is part of a larger publication or series (volume and issue numbers), the number

of printed pages it contains, or the web address (URL), and date it was accessed.

Below is an example of an article citation – the full citation for the in-text citation above – using MLA and APA styles. Notice the common elements that are present in both. You find the elements for a citation in the fields of a database or library catalog record or on the information item itself.

Author – Lei, Simon A.

Article Title – Variation in Study Patterns among College Students: A Review of Literature

Source Title – College Student Journal

Volume and Issue – Volume 49, Issue 2

Publication Date – 2015

Page Numbers – 195-198

APA

Lei, S. A. (2015). Variation in study patterns among college students: A review of literature. *College Student Journal*, 49(2), 195-198.

MLA

Lei, Simon A. "Variation in Study Patterns among College Students: A Review of Literature." *College Student Journal*, vol. 49, no. 2, 2015, pp. 195-198. *Academic Search Premier*. Accessed 27 May 2016.

Luckily, you do not need to memorize citation style formats. There are excellent online guides and tools that will help you cite sources correctly. Additionally, you can always ask your instructor or a librarian for help if you have a question or a difficult source to cite.

Online guides and tools to consult:

- Purdue Online Writing Lab (OWL): Invaluable for MLA, APA, and Chicago styles, this guide covers in-text citations, bibliography/works cited pages, and guidelines for citing many types of information sources.

- Citation Builder: From the University of North Carolina, the Citation Builder is an automated form for creating citations. You select the style, enter the information, and it generates a citation. It's always a good idea to double check these citation-generator tools!
- Zotero: Developed at the Roy Rosenzweig Center for History and New Media at George Mason University, Zotero is a sophisticated research management tool. You can use it to save and organize your sources and create citations. As a more sophisticated tool, it requires a little more time and efforts to learn, but the time is worth it when you're researching and writing a lot.

In addition to these tools, many research databases and library catalogs offer citation tools that help you create a citation for an item you've located using that service. Look for a button or link labeled cite or citation. Again, with these automatically-generated citations, be sure to double check it for accuracy. They aren't always correct.

Figure 1. example of the citation button in PubMed Central, a freely available research database.

Citation in Pub Med

Bibliography

Citation Builder. (n.d.). University of North Carolina. Retrieved from http://library.unc.edu/citationbuilder/.

Purdue Online Writing Lab (OWL). (2015). Purdue University. Retrieved from https://owl.english.purdue.edu/owl/.

Zotero. (n.d.) Roy Rosenzweig Center for History and New Media. Retrieved from https://www.zotero.org/about/.

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5.2 Plagiarism

Plagiarism is the presentation of someone else's work as your own.

More formally stated it is the act of claiming language, ideas, opinions, theories, software code, artistic material, or anything else developed by another person without acknowledging that person as the source of the material.

In the world of cut and paste, it is incredibly easy to commit plagiarism and not even be aware of doing so. Regardless of whether it is intentional or unintentional, plagiarism is dishonest, unfair, and unethical.

There are serious consequences for both intentional and unintentional plagiarism. Ignorance is not an excuse. As a student, the consequences of plagiarism can range from the loss of credit for a course to expulsion from school. In the work world, the consequences of plagiarism can range from loss of your professional reputation to loss of your job and destruction of your career. As a student, you should be familiar with your school's academic integrity policies. As one example, Central Oregon Community College (COCC) publishes the COCC Student Rights and Responsibilities, which spells out the consequences for committing plagiarism at COCC (see the "Academic Honesty" sub-heading in Section C of the Rights and Responsibilities).

Examples of plagiarism:

- Copying and pasting from a source into your work without attribution
- Purchasing a paper online or from another student
- Turning in the same work in two different classes (self-plagiarism)
- Failing to put quotation marks around direct quotes in your work
- Copying a diagram, image, graph, or photo into your work without referencing the source

- Copying and pasting text and changing just a few words or phrases to "put it into your own words," sometimes referred to as patch writing
- Using information gained in a personal interview or conversation without citing the source
- Failing to cite sources for any information that you used in your paper

Only information considered to be universally common knowledge, such as dates of important events and widely known facts, can be used without citing the source.

Credit must always be given to others for

- their words, either quoted or paraphrased
- their artistic material
- their research findings, analysis, and conclusions

The primary way to avoid plagiarism is to cite or list the sources you used in preparing your work. Citing sources is the way you tell your audience whose works you used and to give credit to the creators of those works. It has the side benefit of providing your audience with a bibliography of relevant items on that topic.

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6. PROGRESS REPORTS

You write a progress report to inform a supervisor, associate, or customer about progress you've made on a project over a certain period of time. The project can be the design, construction, or repair of something, the study or research of a problem or question, or the gathering of information on a technical subject. You write progress reports when it takes several weeks or even months to complete a project.

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6.1 Functions and Contents of Progress Reports

In the progress report, you explain any or all of the following:

- How much of the work is complete
- What part of the work is currently in progress
- What work remains to be done
- What problems or unexpected things, if any, have arisen
- How the project is going in general

Progress reports have several important functions:

- Reassure recipients that you are making progress, that the project is going smoothly, and that it will be complete by the expected date.
- Provide recipients with a brief look at some of the findings or some of the work of the project.
- Give recipients a chance to evaluate your work on the project and to request changes.
- Give you a chance to discuss problems in the project and thus to forewarn recipients.
- Force you to establish a work schedule so that you'll complete the project on time.
- Project a sense of professionalism to your work and your organization.

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6.2 Timing and Format of Progress Reports

In a year-long project, there are customarily three progress reports, one after three, six, and nine months. Depending on the size of the progress report, the length and importance of the project, and the recipient, the progress report can take the following forms:

- Memo—A short, informal report to someone within your organization
- Letter—A short, informal report sent to someone outside your organization
- Formal report—A formal report sent to someone outside your organization

In our course, you will write a progress report in the form of a thorough memo, and you will attach an outline to that memo to give your recipient an idea of the content in your final report. (See the chapter on Outlines for more information.)

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6.3 Organizational Patterns or Sections for Progress Reports

The recipient of a progress report wants to see what you've accomplished on the project, what you are working on now, what you plan to work on next, and how the project is going in general. In other words, the following three sections are key in any progress memo or progress report:

- Work accomplished in the preceding period(s)
- Work currently being performed
- Work planned for the next period(s)

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6.4 Other Parts of Progress Reports

In your progress memo or report, you also need to include the following sections: (a) an introduction that reviews the purpose and scope of the project, (b) a detailed description of your project and its history, and (c) an overall appraisal of the project to date, which usually acts as the conclusion.

- Opening paragraph introducing the purpose of the memo and a reminder about the project topic
- Summary of the project
- Specific objectives of the project
- Scope, or limits, of the project
- Research gathered
- Overall assessment or appraisal of the project at this time

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6.5 Revision Checklist for Progress Reports

As you reread and revise your progress report, watch out for problems such as the following:

- Make sure you use the right format. If this is for a course, check with your instructor; if it is for a work place, check with your supervisor.
- Write a clear opening paragraph reminding your recipient of the project you are working on and that you are providing progress on that project
- Use headings to mark off the different parts of your progress report, particularly the different parts of your summary of work done on the project.
- Use lists as appropriate.
- Provide specifics–avoid relying on vague, overly general statements about the work you've done on the final report project.
- Be sure and address the progress report to the real or realistic audience–not your instructor.

If you will be including an outline of your report with your progress memo, you may find it helpful to move next to the chapter on creating outlines.

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7. OUTLINES

Outlines are a necessary part of writing. Period. Outlines are like a road map. They give you direction; they tell you where to go. Working without an outline is like trying to get from Oregon to New York and only knowing you need to go east. This chapter provides helpful tips for creating a road map for technical reports and other documents.

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7.1 Creating and using outlines

In technical writing, outlines can serve multiple purposes. One is help the writer organize ideas and evidence, and the other to communicate your plan of development clearly to the person who has the authority to move your project forward. Therefore, the various parts of your outline should make sense to you and communicate your ideas clearly to your audience.

As you begin to outline your report:

- Indicate main idea/thesis at top.
- Name and number the major sections of the report at the left margin.
    - Add details for each section underneath the major section. Write in complete sentences when presenting details.
    - Indent the details related to each section underneath the names of major sections.
- Alternate between numbers and letters to indicate different levels: I. A. 1. a. 1) a)

Take a peek at the following three-minute video which explains how helpful outlines can be in writing a technical report:

[Start screen for outlines screencast]

Other suggestions about creating an outline from your research:

- Develop as specific an outline as you can: it shows you what information you must gather and, as importantly, what

information you can ignore.
- Use the indexes, tables of contents, and headings within chapters of books or articles from databases selectively for just the information you need.
- Divide your work into manageable, hour-long chunks (make progress rather than relying on big blocks of weekend or vacation time).

Before you begin your detailed, formal outline, you might wish to consider the following:

1. Do any preliminary reading necessary to construct a rough outline.
2. Develop a rough outline with major section headings you are considering for this report.
3. Identify your information sources, and make a bibliographic citation for each.
4. Take notes as your read determining in which sections each source material might best work.
5. Provide in-text citations as you develop your outline; doing so will help document sources thoroughly and ethically at all stages (and will make your job easier when you are drafting your report).
6. Change or add extra detail to the outline as the research process continues.

When you have completed sufficient research to develop your ideas, a formal outline can be used to develop a draft of your report. As you write and revise, you will continue filling in details, adding transitions, and providing your own acquired understanding of the subject. It isn't uncommon to discover gaps in your early draft and have to go back and conduct more research. Keep in mind that this is a working outline and not a contract; as you continue your research, you may decide to organize the final report differently and even delete some information and add new sections.

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7.2 Developing the rough outline

In the early stages of developing a formal, detailed outline, create a working outline before you begin gathering information. The rough outline shows you which specific topics to gather information on and which ones to ignore. Think of the outline as a series of questions:

Rough outline for a report on light water nuclear reactors	Questions generated by the outline
1. Pressurized Water Reactors 1. Major Components 2. Basic Operations	What are the main differences? What are the main components? What are the materials? Design? Dimensions? How many are in operation? Where Who designed them?
1. Boiling Water Reactors 1. Major Components 2. Basic Operation	How do they differ from PWRs? What are the main components? What are the materials? Design? Dimensions? Designers? Where used? How many?
1. Safety Measures 1. Pressurized Water Reactors 2. Boiling Water Reactors 3. Role of the Nuclear Regulatory Commission	What are the chief dangers? What are the dangers and safety measures associated with PWRs? What are the dangers and safety measures associated with BWRs? How does the NRC regulate nuclear power plants? What standards does it enforce? How?
1. Economic Aspects of Light Water Reactors 1. Construction Costs 2. Operation and Maintenance Costs 3. Operating Capacity	What are the construction, operation, maintenance, and fuel costs? What about the availability of fuel? How do these costs compare to output? How do the PWR and the BWR compare in terms of costs and output? How much electricity can a LWR generate at full capacity?

Figure 1. Viewing an outline as a series of questions

Keep in mind that this rough outline is in its early stage. The formal outline you will ultimately create and submit will be much more developed, containing specific details and information from your anticipated sections of your report.

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8. CREATING AND INTEGRATING GRAPHICS

Technical writers integrate graphics, also referred to as visuals, to complement text in a report. Visuals can take a number of forms–tables, charts, photographs, drawings, to name a few– but their purpose rarely varies: graphics should help to clarify information presented in the report. They also provide an additional benefit: they help to break up a text-heavy report, thereby making the report more visually appealing.

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8.1 Deciding which graphics to include

As you review your research and begin to think about possible visuals to include in your report, the first step is to consider which graphics are most appropriate given the data you wish to convey. The table below provides some general guidelines on the kind of graphic most suitable given the type of information.

Information to Convey	**Visual Type**
Numbers, percentages, categories	Tables, charts
Processes	Flow charts
Geographic data	Maps
Chronological or prioritized lists	Numbered lists
Non-chronological lists	Bulleted lists

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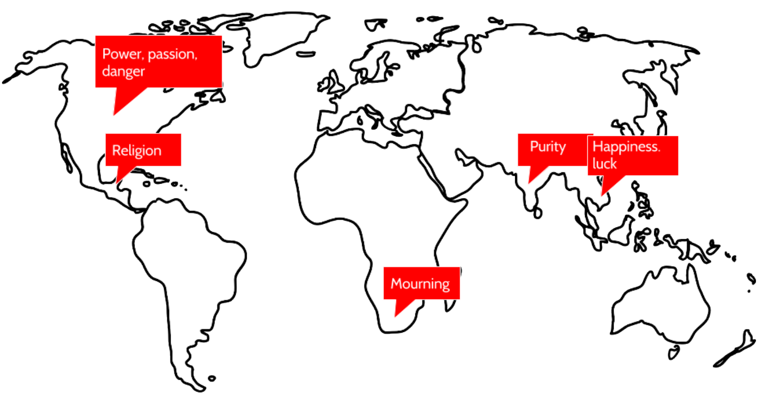
8.2 Other considerations: audience

When creating graphics, it is very important to keep your audience in mind. This relates not just to the content you share but also how that content appears on the page. Are you aware, for instance, that the same color has different meanings across various cultures? Take a look at the graphic below and notice how the color red means something very different across culture. Similar differences exist across cultures with other colors, as well, so be aware that the choices you make in colors for your graphics may communicate ideas you do not actually intend.

Figure 1: Meanings of the color red around the world



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8.3 Other considerations: placement and context

As you develop visuals for your report, you will want to also consider where they should be placed and what information you will need to provide in the body of your report to adequately prepare your readers for the message within that graphic. Minimally, consider the following:

- Introduce the information appearing in a graphic in clear sentences in the paragraph preceding the visual. That is also a good place to provide the source material for the information in the graphic, if applicable.
- Give the visual a name, even if that is simply "Table 1" or "Figure 1" for easy reference.
- Make sure the information within the graphic is clear and easy to understand.
- Provide source information at the bottom of the graphic.
- Write some follow-up text after the graphic. This might be an interpretation or a final comment about the implications of the information in the visual.

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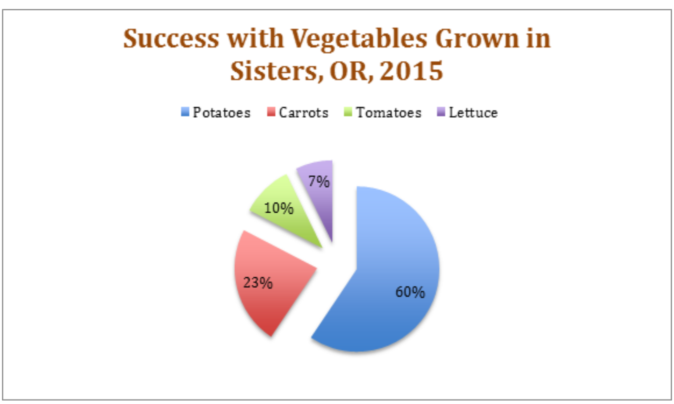
8.4 Samples

Let's take a look at some samples.

The first example below is a pie chart created with information the writer obtained from an interview. Notice that the writer provides a name for the visual, includes introductory sentences to provide context for the graphic, lists source information at the bottom of the chart, and finally, includes some closing remarks to tie it all together.

> Not all gardeners will experience success with growing vegetables in Central Oregon, and the town of Sisters is especially challenging because of the varied temperatures all year long and the chance of frost or even freezing temperatures during any month of the year. Central Oregon and Sisters resident, Jane Doe, had the greatest success with the following vegetables in the year 2015 as noted in the pie chart below.
>
> Table 1: Vegetables grown in 2015

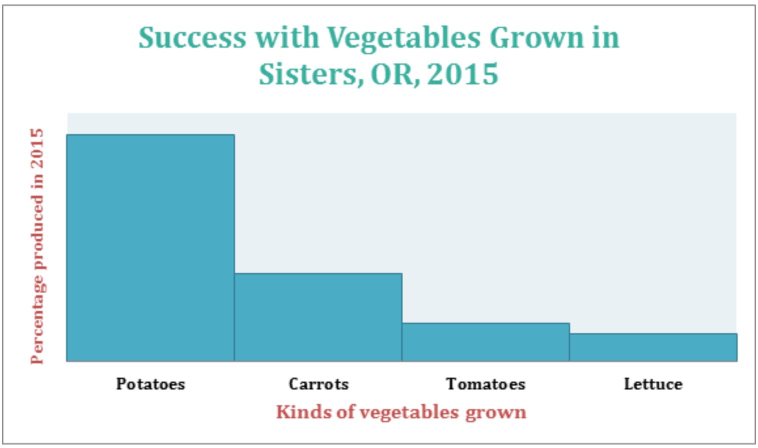


Source: Interview with Master Gardener, Jane Doe, 2 May 2016.

> It is important to note that depending on the hardiness zone of the city, some vegetables may do better than others. Doe also commented that she protected her tomatoes either inside a green house or under a hoop house.

Below you will find another visual of the same information from the pie chart. It is provided to give you another way of visualizing the same information.

Figure 1: Vegetables grown in 2015



Source: Interview with Master Gardener, Jane Doe, 2 May 2016.

Finally, here is a simple table conveying information about plant hardiness zones for growers in Central Oregon. Notice again that the table isn't simply inserted and left on its own for readers to interpret; the writer introduces the table with prefatory remarks and also provides follow-up commentary after the table.

> The U.S. Department of Agriculture publishes a Plant Hardiness Zone Map which growers and gardeners use to help determine which plants, including vegetables and trees,

will be most successful at a particular location. The table below shows the hardiness zone for four cities in Central Oregon and includes the annual minimum winter temperature–important information to keep in mind when determining not only which vegetables to plant but how long the growing season may be.

Table 1: Hardiness Zones in Central Oregon

Central Oregon City	**Hardiness Zone**	**Winter Temperature Range**
Sisters	6a	-10 to -5 (Fahrenheit)
Bend	6b	-5 to 0 (Fahrenheit)
Redmond	6b	-5 to 0 (Fahrenheit)
Tumalo	6b	-5 to 0 (Fahrenheit)

Source information: "United States Department of Agriculture." USDA *Plant Hardiness Zone Map*. 2012. Web. 05 May 2016.

Before purchasing any plants or vegetables for your own garden, make sure you look at the hardiness number on the label to be sure that item will grow successfully in your climate zone.

Now that you have had a chance to learn about strategies for creating effective graphics and have examined some strong examples, let's look at a few that could use some revision. As you look at the following visuals, note the possible strengths and weaknesses of each one. Consider what advice you might give the writer on how to improve these graphics.

Examples of visuals that could use revision.

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8.5 Guidelines for graphics: a final review

Keep the following in mind as you consider possible visual enhancements to your report:

- Use graphics to supplement or clarify information provided within the body of your report.
- Make sure your graphics are appropriate to your audience, subject matter, and purpose.
- Discuss graphics in nearby text preceding the graphic. Don't just insert a graphic in your report unexplained. Orient readers to the graphic; explain its basic meaning, easily done in introductory and follow-up sentences before and after your graphic.
- Intersperse graphics and text on the same page. Don't put graphics on pages by themselves; ideally, no visual should take up more than one-third of any page in your report.
- Use figure numbers and titles for graphics. Additionally, include identifying detail within the graphics such as illustration labels, axis labels, keys, and so on.
- Make sure graphics fit within normal margins. Leave at least one blank line above and below graphics.
- Place graphics as near to the point in the text where they are relevant as is reasonable. However, if a graphic does not fit properly on one page, indicate that it appears on the next page and put it at the top of the next, continuing with regular text on the preceding page. Don't leave half a page blank just to keep a graphic near the text it is associated with.
- Cite all images that you create from any source material. You should do this in your introductory sentences before the visual as well as include a citation, if relevant, at the bottom of the

visual. See samples above.

- Cite any images you use created by another writer which you include in your report. While it is perfectly legal to borrow graphics–to trace, photocopy, scan, or extract subsets of data from them, you are obligated to accurately cite your sources for graphics just as you are for the words you borrow.

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9. ETHICS IN TECHNICAL WRITING

Up to this point, you have probably been thinking about technical writing in relation to communicating technical information clearly in an accessible format that meets the needs of its audience. These are important aspects of technical writing, to be sure, but they really only represent the surface of what you need to know. This chapter will introduce some of the ethical issues that may arise as technical writers research, write, revise, and produce a technical document.

Like other professionals, technical writers come up against ethical issues regularly and must make decisions about how to move forward with a project in the face of ethical dilemmas. Writers may encounter situations in which she must ask the following kinds of questions: What kinds of support material and sources are ethical to use? Are open web sources just as valid as academic sources for certain topics? Can email communications be used without permission? What if the writer discovers that a company falsified data about the effectiveness of its product? Should she reveal this in her report or should she take other courses of action? How much should a writer adapt to an audience without sacrificing his own views?

Ethics principles provide the basis for deciding whether "x" is ethical, but in reality, ethical issues are complicated—for example, imagine working for a large company that employs substantial numbers of people in your town, where relatively few other employment opportunities exist. Imagine that the company disposes of its chemical waste in a way that could endanger people's health. Imagine, further, that the company cannot afford to dispose of this waste more safely and that, if you turn them in, the company will close down, most of the town will be unemployed, and the town's entire economy will collapse. What do you do? Is the risk of future health problems more serious than the certainty of immediately destroying your town? Which choice is really more ethical?

On a smaller scale, if one way of presenting evidence requires some manipulation of data but seems to be the only way of keeping sales strong enough for your company to survive, what should you do? If you take the unethical route, odds are good that few (or no) people will realize you have done so, and you would not be doing anything illegal. If you take the ethical route, and sales plummet, few people will recognize the ethical issue, but most will clearly understand that you caused the sales decline.

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9.1 General Principles

In day-to-day life, most people have a sort of sliding scale on what constitutes ethical behavior: they would not tell a direct lie on trivial matters if doing so would hurt someone's feelings. For example, you might tell your best friend her new haircut looks attractive when in fact you believe that it does not. This lie, though minor, preserves your friend's feelings and does no harm to her or anyone else. Some might consider the context before determining how to act. For example, you might not tell a stranger that he was trailing toilet paper but you would tell a friend. In a more serious situation, a person might not choose to die to save a stranger's life, but she might risk dying to save her children's lives.

Ethical behavior, including ethical technical communication, involves not just telling the truth and providing accurate information, but telling the truth and providing information so that a reasonable audience knows the truth. It also means that you act to prevent actual harm, with set criteria for what kinds and degrees of harm are more serious than others (for example, someone's life outweighs financial damage to your company; your company's success outweighs your own irritation). As a guideline, ask yourself what would happen if your action (or non-action) became public. If you would go to prison, lose your friends, lose your job, or even just feel really embarrassed, the action is probably unethical.

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9.2 Presentation of information

How a writer presents information in a document can affect a reader's understanding of the relative weight or seriousness of that information. For example, hiding some crucial bit of information in the middle of a long paragraph deep in a long document seriously de-emphasizes the information. On the other hand, putting a minor point in a prominent spot (say the first item in a bulleted list in a report's executive summary) tells your reader that it is crucial.

A classic example of unethical technical writing is the memo report NASA engineers wrote about the problem with O ring seals on the space shuttle Challenger (the link provides further links to a wide range of information, including ethics analyses; the first link is the overview for what happened). The unethical feature was that the crucial information about the O rings (O rings provide a seal) was buried in a middle paragraph, while information approving the launch was in prominent beginning and ending spots. Presumably, the engineers were trying to present a full report, including safe components in the Challenger, but the memo's audience—non-technical managers—mistakenly believed the O ring problem to be inconsequential, even if it happened. The position of information in this document did not help them understand that the problem could be fatal. Possibly the engineers were just poor writers; possibly they did not consider their audience; or possibly they did not want to look bad and therefore emphasized all the things that were right with the Challenger. (Incidentally, the O rings had worked fine for several launches.)

Ethical writing, then, involves being ethical, of course, but also presenting information so that your target audience will understand the relative importance of information and understand whether some technical fact is a good thing or a bad thing.

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9.3 Typical Ethics Issues in Technical Writing

There are a few issues that may come up when researching a topic for the business or technical world that a writer must consider. Let's look at a few.

Research that does not support the project idea

In a technical report that contains research, a writer might discover conflicting data which does not support the projects' goal. For example, your small company continues to have problems with employee morale. Research shows bringing in an outside expert, someone who is unfamiliar with the company and the stakeholders, has the potential to impact the greatest change. You discover, however, that to bring in such an expert is cost prohibitive. You struggle with whether to leave this information out of your report, thereby encouraging your employer to pursue and action that is really not feasible.

Suppressing relevant information

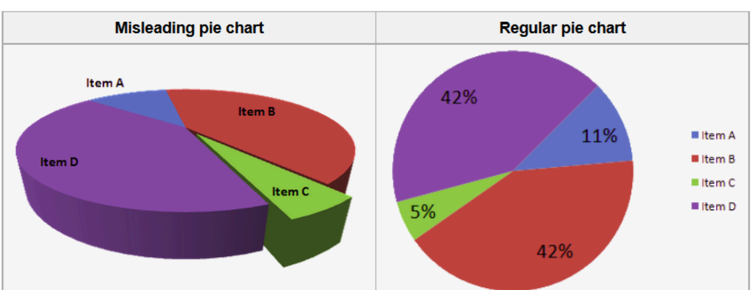
Imagine you are researching a report for a parents' group that wants to change the policy in the local school district requiring all students to be vaccinated. You collect a handful of sources that support the group's goal, but then you discover medical evidence that indicates vaccines do more good than potential harm in society. Since you are employed by this parents' group, should you leave out the medical evidence, or do you have a responsibility to include all research, even some that might sabotage the groups' goal.

Presenting visual information ethically

Visuals can be useful for communicating data and information efficiently for a reader. They provide data in a concentrated form, often illustrating key facts, statistics or information from the text of the report. When writers present information visually, however, they have to be careful not to misrepresent or misreport the complete picture.

The visual below shows two perspectives of information in a pie chart. The data in each is identical but the pie chart on the left presents information in a misleading way (see Fig. 1). What do you notice, however, about how that information is conveyed to the reader?

Fig. 1 – Misleading and regular pie charts

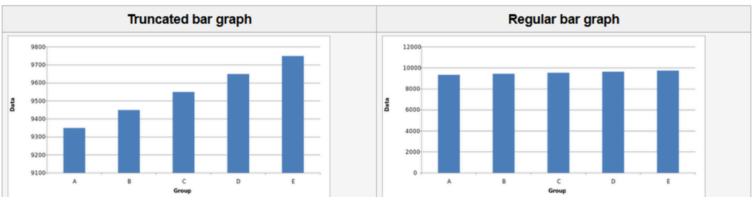


In the misleading pie chart, Item C appears to be at least as large as Item A, whereas in actuality, it is less than half as large.

Imagine that these pie charts represented donations received by four candidates for city council. The candidate represented by the green slice labeled “Item C,” might think that she had received more donations than the candidate represented in the blue “Item A” slice. In fact, if we look at the same data in a differently oriented chart, we can see that Item C represents less than half of the donations than those for Item A. Thus, a simple change in perspective can change the impact of an image.

Similarly, take a look at the bar graphs in figure 2 below. What do you notice about their presentation?

Fig. 2 – Misleading and regular bar graphs



Note that both of these graphs display *identical data*; however, in the truncated bar graph on the left, the data *appear* to show significant differences, whereas in the regular bar graph on the right, these differences are hardly visible.

If the bar graph above were to represent sales figures for a company, the representation on the left would look like good news: dramatically increased sales over a five-year period. However, a closer look at the numbers shows that the graph shows only a narrow range of numbers in a limited perspective (9100 to 9800). The bar graph on the right, on the other hand, shows the complete picture by presenting numbers from 0-1200 on the vertical axis, and we see that the sales figures, have in fact been relatively stable for the past five years.

Presenting data in graphical form can be especially challenging. Keep in mind the importance of providing appropriate context and perspective as you prepare your graphics.

Limited source information in research

Thorough research requires that a writer integrates information from a variety of reliable sources. These sources should demonstrate that the writer has examined the topic from as many angles as possible. This includes scholarly and professional research, not just from a single database or journal, for instance, but from a variety. Using a variety of sources helps the writer avoid potential bias that can occur from relying on only a few experts. If you were writing a report on the real estate market in Central Oregon, you would not collect data from only one broker's office. While this office might have access to broader data on the real estate market, as a writer you run the risk of looking biased if you only chose materials from this one source. Collecting information from multiple brokers would demonstrate thorough and unbiased research.

A few additional concerns

You might notice that most of these ethics violations could easily happen accidentally. Directly lying is unlikely to be accidental, but even in that case, the writer could persuade her/himself that the lie achieved some "greater good" and was therefore necessary.

Even more common is an ethics violation resulting from the person who is designing the information seeing it as evidence for whatever s/he understands as true and honestly not recognizing the bias in how s/he has presented that information.

Most ethics violations in technical writing are (probably) unintentional, BUT they are still ethics violations. That means a technical writer must consciously identify his/her biases and check to see if a bias has influenced any presentation: whether in charts and graphs, or in discussions of the evidence, or in source use (or, of course, in putting the crucial O ring information where the launch decision makers would realize it was important).

For example, scholarly research is theoretically intended to find evidence either that the new researcher's ideas are valid (and important) or evidence that those ideas are partial, trivial, or simply wrong. In practice, though, most folks are primarily looking for support. "Hey, I have this great new idea that will solve world hunger, cure cancer, and make mascara really waterproof. Now I just need some evidence to prove I am right!"

In fact, if you can easily find 94 high-quality sources that confirm you are correct, you might want to consider whether your idea is worth developing. Often in technical writing, the underlying principle is already well-documented (maybe even common knowledge for your audience) and the point SHOULD be to use that underlying principle to propose a specific application.

Using a large section of your report to prove an already established principle implies that you are saying something new about the principle—which is not true. A brief mention ("Research conducted at major research universities over the last ten years (see literature review, Smith and Tang, 2010) establishes that. . . .") accurately reflects the status of the principle; then you would go on to apply that principle to your specific task or proposal.

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9.4 Ethics and documenting sources

The chapter titled "Citation and Plagiarism" stresses the importance of documenting your sources. Documenting your sources includes showing exactly what you borrowed both where you used it and in a Works Cited, Works, or References (the different terms reflect different documentation systems, not just random preference) list at the end.

Including an item only in the source list at the end suggests you have used the source in the report, but if you have not cited this source in the text as well, you could be seen as misleading the reader. Either you are saying it is a source when in fact you did not really use anything from it, or you have simply failed to clarify in the text what are your ideas and what comes from other sources.

Documenting source use in such a way as to either mislead your reader about the source or make identifying the source difficult is also unethical—that would include using just a URL or using an article title without identifying the journal in which it appears (in the Works Cited/References; you would not likely identify the journal name in the report's body). Unethical source use also includes falsifying the nature of the source, such as omitting the number of pages in the Works Cited entry to make a brief note seem to be a full article.

Unethical source use includes suppressing information about how you have used a source, such as not making clear that graphical information in your report was already a graph in your source, as opposed to a graph you created on the basis of information in the source.

Note that many problems in documenting sources occur because the writer is missing the point of source use:

- you must clearly distinguish between your ideas and borrowed material,
- and you must use borrowed material primarily as evidence for your own, directly stated ideas.

If you blend source material together with your ideas (including as "your ideas" your analysis or application of borrowed materials), you will indeed find that showing exactly what is borrowed versus what is yours is impossible. That is because you cannot ethically blend your ideas together with source material. Any time you find you cannot apply documentation principles, consider whether you are using the source(s) unethically. Students often argue that they cannot separate their ideas from borrowed ideas because they would then have to document the whole paper—if that is true, the paper is most certainly not making "fair use" of the sources.

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9.5 Ethics, Plagiarism, and Reliable Sources

Unlike personal or academic writing, technical and professional writing can be used to evaluate your job performance and can have implications that a writer may or may not have considered. Whether you are writing for colleagues within your workplace or outside vendors or customers, you will want to build a solid, well-earned favorable reputation for yourself with your writing. Your goal is to maintain and enhance your credibility, and that of your organization, at all times.

Credibility can be established through many means: using appropriate professional language, citing highly respected sources, providing reliable evidence, and using sound logic. Make sure as you start your research that you always question the credibility of the information you find. Are the sources popular or scholarly? Are they peer reviewed by experts in the field? Are the methods and arguments used based on solid reasoning and sound evidence? Is the author identifiable and does s/he have appropriate credentials? Be cautious about using sources that are not reviewed by peers or editor, or in which the information seems misleading, biased, or even false. Be a wise information consumer in your own reading and research in order to build your own reputation as an honest, ethical writer.

Quoting the work of others in your writing is fine, provided that you credit the source fully enough that your readers can find it on their own. If you fail to take careful notes, or the sentence is present in your writing but later fails to get accurate attribution, it can have a negative impact on you and your organization. That is why it is important that when you find an element you would like to incorporate in your document, in the same moment as you copy and paste or make a note of it in your research file, you need to note the source in a complete enough form to find it again.

Giving credit where credit is due will build your credibility and enhance your document. Moreover, when your writing is authentically yours, your audience will catch your enthusiasm, and you will feel more confident in the material you produce. Just as you have a responsibility in business to be honest in selling your product of service and avoid cheating your customers, so you have a responsibility in business writing to be honest in presenting your idea, and the ideas of others, and to avoid cheating your readers with plagiarized material.

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9.6 Professional ethics

Many organizations and employers have a corporate code of ethics. If you are a technical writer and you join a professional associations such as the Society of Technical Communicators you will need to be aware their codes of ethics, published online (e.g. http://www.stc.org/about-stc/ethical-principles). If you are a technical writer researching and writing a report within a specific professional field, you will also need to be aware to that field's codes of ethics. For example, let's say you are writing a report for a group of physical therapists on the latest techniques for rehabilitating knee surgery patients. You should be aware of the code of ethics for physical therapists so that you work within those principles as you research and write your report.

Look for the codes of ethics in your own discipline and begin to read and understand what will be expected of you as a professional in your field.

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10. TECHNICAL REPORTS: COMPONENTS AND DESIGN

Technical reports (including handbooks and guides) have various designs depending on the industry, profession, or organization. This chapter shows you one traditional design. If you are taking a technical writing course, ask your instructor for any design specifications she has for your documents. The same is true if you are writing a technical report in a science, business, or government context. Organizations very often have their own "stylesheets" on which all organizational document designs are based, so make sure the design presented in this chapter is acceptable.

Technical reports have specifications as do any other kind of project. Specifications for reports involve layout, organization and content, format of headings and lists, the design of the graphics, and so on. The advantage of a required structure and format for reports is that you or anyone else can expect them to be designed in a familiar way—you know what to look for and where to look for it. Reports are usually read in a hurry—people are in a hurry to get to the information they need, the key facts, the conclusions, and other essentials. A standard report format is like a familiar neighborhood.

When you analyze the design of a technical report, notice how repetitive some sections are. This duplication has to do with how people read reports. They don't read reports straight through: they may start with the executive summary, skip around, and probably not read every page. Your challenge is to design reports so that these readers encounter your key facts and conclusions, no matter how much of the report they read or in what order they read it.

Be sure and see the example reports.

The standard components of the typical technical report are discussed in this chapter. The following sections guide you through each of these components, pointing out the key features. As you read and use these guidelines, remember that these are guidelines, not commandments. Different companies, professions, and organizations have their own varied guidelines for reports—you'll need to adapt your practice to those as well the ones presented here.

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10.1 Cover letter

The cover letter is either attached to the outside of the report with a paper clip or is bound within the report. It is a communication from you—the report writer—to the recipient, the person who requested the report and who may even be paying you for your expert consultation. Essentially, it says "Here is the report that we agreed I'd complete by such-and-such a date. Briefly, it contains this and that, but does not cover this or that. Let me know if it meets your needs." The cover letter explains the context—the events that brought the report about. It contains information about the report that does not belong in the report.

In the example of the cover letter that follows, notice the standard business-letter format. If you write an internal report, use the memorandum format instead. In either case, the contents and organization are the same:

> **First paragraph.** Cites the name of the report, putting it in italics. It also mentions the date of the agreement to write the report.
>
> **Middle paragraph.** Focuses on the purpose of the report and gives a brief overview of the report's contents.
>
> **Final paragraph.** Encourages the reader to get in touch if there are questions, comments, or concerns. It closes with a gesture of good will, expressing hope that the reader finds the report satisfactory.

As with any other element in a report, you may have to modify the contents of this letter (or memo) for specific situations. For example, you might want to add another paragraph, listing questions you'd like readers to consider as they review the report.

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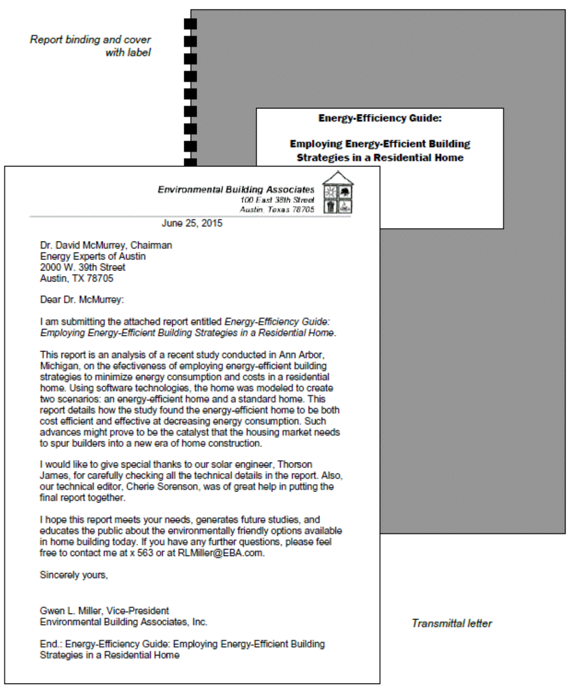
10.2 Cover page

Be sure to create a cover page for your report. It's a step that some report writers forget. Without a label, a report is anonymous; it gets ignored.

The best way to create a cover page is to use your word-processing software to design one on a standard page with a graphic box around the label information. Not much goes on the label: the report title, your name, your organization's name, a report tracking number, and a date. There are no standard requirements for the label, although your company or organization should have its own requirements. (An example of a report label is shown below.)



Transmittal letter and report cover (with cover label).

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10.3 Abstract and executive summary

Most technical reports contain at least one abstract—sometimes two, in which case the abstracts play different roles. Abstracts summarize the contents of a report, but the different types do so in different ways:

- Descriptive abstract. This type provides an overview of the purpose and contents of the report. In some report designs, the descriptive abstract is placed at the bottom of the title page, as shown in the following:

LIGHT WATER NUCLEAR REACTORS

submitted to

Mr. David A. McMurrey
Energy Research Consultants, Inc.
Austin, Texas

April 27, 19XX

by
Jeffrey D. Lacruz

This report examines light water reactors as a possible alternative source of energy for Luckenbach, Texas. Both types of light water reactors are described, and an explanation of how each reactor produces electricity is presented. Safety systems and economic aspects conclude the main discussion of the report.

Descriptive abstract. Traditionally, it is placed on the title page (not the cover page).

- Executive summary. Another common type is the executive summary, which also summarizes the key facts and conclusions contained in the report. Think of this as if you used a yellow highlighter to mark the key sentences in the report and then siphoned them all out onto a separate page and edited them for readability. Typically, executive summaries are one-tenth to one-twentieth the length of reports ten to fifty pages long. For longer reports, ones over fifty pages, the executive summary should not go over two pages. The point of the executive summary is to provide a summary of the report—something that can be read quickly.

If the executive summary, introduction, and transmittal letter strike you as repetitive, remember that readers don't necessarily start at the beginning of a report and read page by page to the end. They skip around: they may scan the table of contents; they usually skim the executive summary for key facts and conclusions. They may read carefully only a section or two from the body of the report, and then skip the rest. For these reasons, reports are designed with some duplication so that readers will be sure to see the important information no matter where they dip into the report.

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10.4 Table of contents

You are familiar with tables of contents (TOC) but may never have stopped to look at their design. The TOC shows readers what topics are covered in the report, how those topics are discussed (the subtopics), and on which page numbers those sections and subsections start.

In creating a TOC, you have a number of design decisions:

- Levels of headings to include. In longer reports, consider not including only the top two levels of headings. This keeps the TOC from becoming long and unwieldy. The TOC should provide an at-a-glance way of finding information in the report quickly.
- Indentation, spacing, and capitalization. Notice in the illustration below that items in each of the three levels of headings are aligned with each other. Although you can't see it in the illustration, page numbers are right-aligned with each other. Notice also the capitalization: Main chapters or sections are all caps; first-level headings use initial caps on each main word; lower-level sections use initial caps on the first word only.
- Vertical spacing. Notice that the first-level sections have extra space above and below, which increases readability.

Using the automatic TOC creator in your word processor can help you produce a clean, professional document. If you prefer to make your own, learn to use dot leader tabs in order to line up the page numbers correctly.

One final note: Make sure the words in the TOC are the same as they are in the text. As you write and revise, you might change some of the headings—don't forget to change the TOC accordingly. See the example of a table of contents:

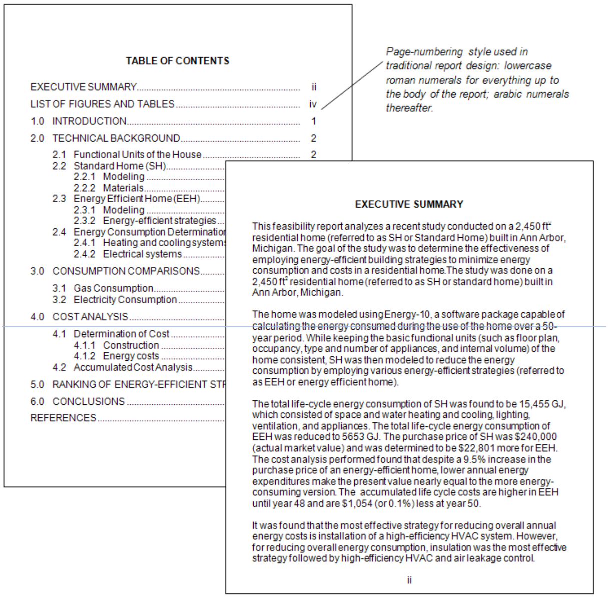

Table of contents (which comes first) then the executive summary. In a technical writing course, ask your instructor if the decimal-numbering style for the table of contents and headings is required.

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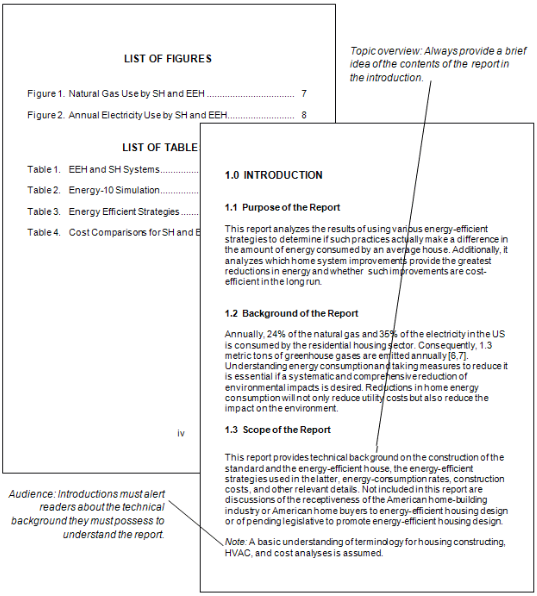
10.5 List of figures and tables

If your document has more than two figures or tables create a separate list of figures. The list of figures has many of the same design considerations as the table of contents. Readers use the list of figures to quickly find the illustrations, diagrams, tables, and charts in your report.

Complications arise when you have both tables and figures. Strictly speaking, figures are illustrations, drawings, photographs, graphs, and charts. Tables are rows and columns of words and numbers; they are not considered figures.

For longer reports that contain dozens of figures and tables each, create separate lists of figures and tables. Put them together on the same page if they fit, as shown in the illustration below. You can combine the two lists under the heading, "List of Figures and Tables," and identify the items as figure or table as is done in the illustration below.



List of figures and tables followed by the introduction. If there are no tables, make it "List of Figures." In a technical writing course, ask your instructor if the decimal-numbering style for headings is required.

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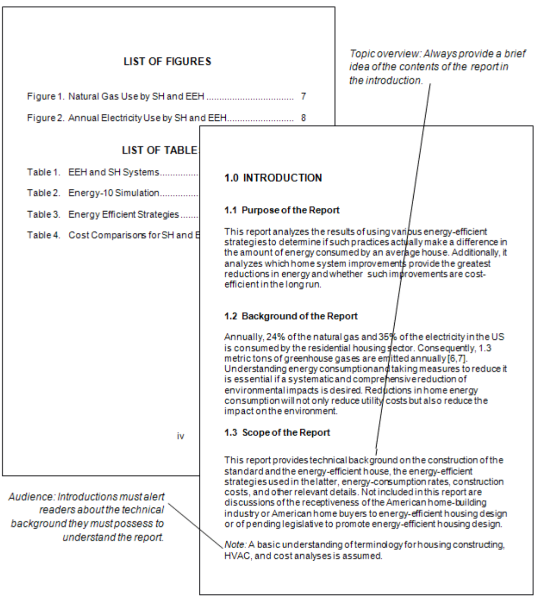
10.6 Introduction

An essential element of any report is its introduction—make sure you are clear on its real purpose and contents. In a technical report, the introduction prepares the reader to read the main body of the report.

See this example of an introduction:



List of figures and tables followed by the introduction. If there are no tables, make it "List of Figures." In a technical writing course, ask your instructor if the decimal-numbering style for headings is required.

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10.7 Body of the report

The body of the report is of course the main text of the report, the sections between the introduction and conclusion. Illustrated below are sample pages.

Headings

In all but the shortest reports (two pages or less), use headings to mark off the different topics and subtopics covered. Headings are the titles and subtitles you see within the actual text of much professional scientific, technical, and business writing. Headings are like the parts of an outline that have been pasted into the actual pages of the document.

Headings are an important feature of professional technical writing: they alert readers to upcoming topics and subtopics, help readers find their way around in long reports and skip what they are not interested in, and break up long stretches of straight text.

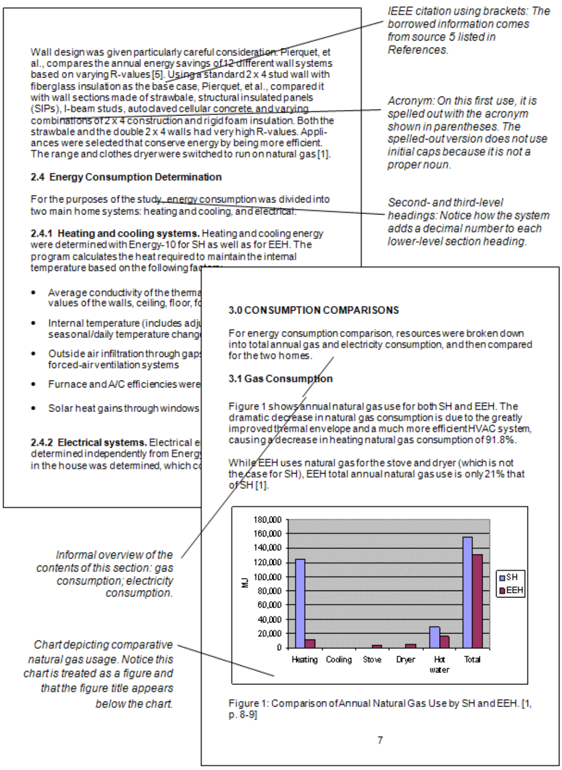
Headings are also useful for writers. They keep you organized and focused on the topic. When you begin using headings, your impulse may be to slap in the headings after you've written the rough draft. Instead, visualize the headings before you start the rough draft, and plug them in as you write.

Your task in this chapter is to learn how to use headings and to learn the style and format of a specific design of headings. Here are a number of helpful tips:

- Make the phrasing of headings self-explanatory: instead of "Background" or "Technical Information," make it more specific, such as "Physics of Fiber Optics."
- Make headings indicate the range of topic coverage in the

section. For example, if the section covers the design and operation of a pressurized water reactor, the heading "Pressurized Water Reactor Design" would be incomplete and misleading.
- Avoid "stacked" headings—any two consecutive headings without intervening text.
- Avoid pronoun reference to headings. For example, if you have a heading "Torque," don't begin the sentence following it with something like this: "This is a physics principle….."
- When possible, omit articles from the beginning of headings. For example, "The Pressurized Water Reactor" can easily be changed to "Pressurized Water Reactor" or, better yet, "Pressurized Water Reactors."
- Don't use headings as lead-ins to lists or as figure titles.
- Avoid "widowed" headings: that's where a heading occurs at the bottom of a page and the text it introduces starts at the top of the next page. Keep at least two lines of body text with the heading, or force it to start the new page.

If you manually format each individual heading using the guidelines presented in the preceding list, you'll find you're doing quite a lot of repetitive work. The styles provided by Microsoft Word, OpenOffice Writer, and other software save you this work. You simply select Heading 1, Heading 2, Heading 3, and so on. You'll notice the format and style are different from what is presented here. However, you can design your own styles for headings.



Wall design was given particularly careful consideration. Pierquet, et al., compares the annual energy savings of 12 different wall systems based on varying R-values [5]. Using a standard 2 x 4 stud wall with fiberglass insulation as the base case, Pierquet, et al., compared it with wall sections made of strawbale, structural insulated panels (SIPs), I-beam studs, autoclaved cellular concrete, and varying combinations of 2 x 4 construction and rigid foam insulation. Both the strawbale and the double 2 x 4 walls had very high R-values. Appliances were selected that conserve energy by being more efficient. The range and clothes dryer were switched to run on natural gas [1].

2.4 Energy Consumption Determination

For the purposes of the study, energy consumption was divided into two main home systems: heating and cooling, and electrical.

2.4.1 Heating and cooling systems. Heating and cooling energy were determined with Energy-10 for SH as well as for EEH. The program calculates the heat required to maintain the internal temperature based on the following fa

- Average conductivity of the therma values of the walls, ceiling, floor, fo
- Internal temperature (includes adju seasonal/daily temperature change
- Outside air infiltration through gaps forced-air ventilation systems
- Furnace and A/C efficiencies were
- Solar heat gains through windows

2.4.2 Electrical systems. Electrical e determined independently from Energy in the house was determined, which co

3.0 CONSUMPTION COMPARISONS

For energy consumption comparison, resources were broken down into total annual gas and electricity consumption, and then compared for the two homes.

3.1 Gas Consumption

Figure 1 shows annual natural gas use for both SH and EEH. The dramatic decrease in natural gas consumption is due to the greatly improved thermal envelope and a much more efficient HVAC system, causing a decrease in heating natural gas consumption of 91.8%.

While EEH uses natural gas for the stove and dryer (which is not the case for SH), EEH total annual natural gas use is only 21% that of SH [1].

Figure 1: Comparison of Annual Natural Gas Use by SH and EEH. [1, p. 8-9]

7

Excerpt from the body of a technical report. In a technical writing course, ask your instructor if the decimal-numbering style for headings is required. Also, a different documentation system may be required—not the IEEE, which is for engineers.

Bulleted and numbered lists

In the body of a report, also use bulleted, numbered, and two-column lists where appropriate. Lists help by emphasizing key points, by making information easier to follow, and by breaking up solid walls of text. Always introduce the list so that your audience understand the purpose and context of the list. Whenever practical, provide a follow-up comment, too. Here are some additional tips:

- Use lists to highlight or emphasize text or to enumerate

sequential items.
- Use a lead-in to introduce the list items and to indicate the meaning or purpose of the list (and punctuate it with a colon).
- Use consistent spacing, indentation, punctuation, and caps style for all lists in a document.
- Make list items parallel in phrasing.
- Make sure that each item in the list reads grammatically with the lead-in.
- Avoid using headings as lead-ins for lists.
- Avoid overusing lists; using too many lists destroys their effectiveness.
- Use similar types of lists consistently in similar text in the same document.

Following up a list with text helps your reader understand context for the information distilled into list form. The tips above provide a practical guide to formatting lists.

Graphics and figure titles

In technical report, you are likely to need drawings, diagrams, tables, and charts. These not only convey certain kinds of information more efficiently but also give your report an added look of professionalism and authority. If you've never put these kinds of graphics into a report, there are some relatively easy ways to do so—you don't need to be a professional graphic artist. For strategies for adding graphics and tables to reports, see the chapter on Creating and Using Visuals. See the chapter on visuals for more help with the principles for creating visuals.

Conclusions

For most reports, you will need to include a final section. When you plan the final section of your report, think about the functions it can perform in relation to the rest of the report. A conclusion does not necessarily just summarize a report. Instead, use the conclusion to explain the most significant findings you made in relation to your report topic.

Appendixes

Appendixes are those extra sections following the conclusion. What do you put in appendixes? Anything that does not comfortably fit in the main part of the report but cannot be left out of the report altogether. The appendix is commonly used for large tables of data, big chunks of sample code, fold-out maps, background that is too basic or too advanced for the body of the report, or large illustrations that just do not fit in the body of the report. Anything that you feel is too large for the main part of the report or that you think would be distracting and interrupt the flow of the report is a good candidate for an appendix. Notice that each one is given a letter (A, B, C, and so on).

Information sources

Documenting your information sources is all about establishing, maintaining, and protecting your credibility in the profession. You must cite ("document") borrowed information regardless of the shape or form in which you present it. Whether you directly quote it, paraphrase it, or summarize it—it's still borrowed information. Whether it comes from a book, article, a diagram, a table, a web page, a product brochure, an expert whom you interview in person—it's still borrowed information.

Documentation systems vary according to professionals and fields. For a technical writing class in college, you may be using either MLA or APA style. Engineers use the IEEE system, examples of which are shown throughout this chapter. Another commonly used documentation system is provided by the American Psychological Association (APA).

Page numbering

Page-numbering style used in traditional report design differs from contemporary report design primarily in the former's use of lowercase roman numerals in front matter (everything before the introduction).

- All pages in the report (within but excluding the front and back covers) are numbered; but on some pages, the numbers are not displayed.
- In the contemporary design, all pages throughout the document use arabic numerals; in the traditional design, all pages before the introduction (first page of the body of the report) use lowercase roman numerals.
- On special pages, such as the title page and page one of the introduction, page numbers are not displayed.
- Page numbers can be placed in one of several areas on the page. Usually, the best and easiest choice is to place page numbers at the bottom center of the page (remember to hide them on special pages).
- If you place page numbers at the top of the page, you must hide them on chapter or section openers where a heading or

title is at the top of the page.

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10.8 Conclusions

We normally use the word “conclusion” to refer to that last section or paragraph or a document. Actually, however, the word refers more to a specific type of final section. If we were going to be fussy about it, the current chapter should be called “Final Sections,” which covers all possibilities.

There are at least four ways to end a report: a summary, a true conclusion, an afterword, and nothing. Yes, it is possible to end a document with no conclusion (or “final section”) whatsoever. However, in most cases, that is a bit like slamming the phone down without even saying good bye. More often, the final section is some combination of the first three ways of ending the document.

Summaries

One common way to wrap up a report is to review and summarize the high points. If your report is rather long, complex, heavily detailed, and if you want your readers to come away with the right perspective, a summary is in order. For short reports, summaries can seem absurd—the reader thinks “You’ve just told me that!” Summaries need to read as if time has passed, things have settled down, and the writer is viewing the subject from higher ground.

Figure 1: Summary-type of final section. From a report written in the 1980s.

VIII. SUMMARY

This report has shown that as the supply of fresh water decreases, desalting water will become a necessity. While a number of different methods are in competition with each other, freezing methods of desalination appear to have the greatest potential for the future. The three main freezing techniques are the direct method, the indirect method, and the hydrate method. Each has some advantage over the others, but all three freezing methods have distinct advantages over other methods of desalination. Because freezing methods operate at such low temperatures, scaling and corrosion of pipe and other equipment is greatly reduced. In non-freezing methods, corrosion is a great problem that is difficult and expensive to prevent. Freezing processes also allow the use of plastic and other protective coatings on steel equipment to prevent corrosion, a measure that cannot be taken in other methods that require high operating temperatures. Desalination, as this report has shown, requires much energy, regardless of the method. Therefore, pairing desalination plants with nuclear or solar power resources may be a necessity. Some of the expense of desalination can be offset, however . . .

“True” Conclusions

A “true” conclusion is a logical thing. For example, in the body of a report, you might present conflicting theories and explored the related data. Or you might have compared different models and brands of some product. In the conclusion, the “true” conclusion, you would present your resolution of the conflicting theories, your choice of the best model or brand—your final conclusions.

Figure 2: A “true”-conclusions final section. This type states conclusions based on the discussion contained in the body of the report. (From a report written in the 1980s.)

V. CONCLUSIONS

Solar heating can be an aid in fighting high fuel bills if planned carefully, as has been shown in preceding sections. Every home represents a different set of conditions; the best system for one home may not be the best one for next door. A salesman can make any system appear to be profitable on paper, and therefore prospective buyers must have some general knowledge about solar products. A solar heating system should have as many of the best design features as possible and still be affordable. As explained in this report, the collector should have high transmissivity and yet be durable enough to handle hail storms. Collector insulation should be at least one inch of fiberglass mat.

Liquid circulating coils should be at least one inch in diameter if an open loop system is used. The control module should perform all the required functions with no added circuits. Any hot water circulating pumps should be isolated from the electric drive motor by a non-transmitting coupler of some kind. Homeowners should follow the recommendations in the guidelines section carefully. In particular, they should decide how much money they are willing to spend and then arrange their components in their order of importance. Control module designs vary the most in quality and therefore should have first priority. The collector is the second in importance, and care should be taken to ensure compatibility. Careful attention to the details of the design and selection of solar heating devices discussed in this report will enable homeowners to install efficient, productive solar heating systems.

Afterwords

One last possibility for ending a report involves turning to some related topic but discussing it at a very general level. Imagine that you had written a background report on some exciting new technology. In the final section, you might broaden your focus and discuss how that technology might be used, or the problems it might bring about. But the key is to keep it general—don't force yourself into a whole new detailed section.

Figure 3: Afterword-type final section. The main body of the report discussed technical aspects of using plastics in main

structural components of automobiles. This final section explores the future, looking at current developments, speculating on the impact of this trend.

VII. CONCLUSION: FUTURE TRENDS

Everyone seems to agree that the car of the future must weigh even less than today's down-sized models. According to a recent forecast by the Arthur Anderson Company, the typical car will have lost about 1,000 pounds between 1978 and 1990 [2:40]. The National Highway Traffic Safety Administration estimates the loss of another 350 pounds by 1995. To obtain these reductions, automobile manufacturers will have find or develop composites such as fiber-reinforced plastics for the major load-bearing components, particularly the frame and drivetrain components. Ford Motor Company believes that if it is to achieve further growth in the late 1980's, it must achieve breakthroughs in structural and semistructural load-bearing applications. Some of the breakthroughs Ford sees as needed include improvements in the use of continuous fibers, especially hybridized reinforced materials containing glass and graphite fibers. In addition, Ford hopes to develop a high speed production system for continuous fiber preforms. In the related area of composite technology, researchers at Owens Corning and Hercules are seeking the best combination of hybrid fibers for structural automotive components such as engine and transmission supports, drive shafts, and leaf springs. Tests thus far have led the vice president of Owen Corning's Composites and Equipment Marketing Division, John B. Jenks, to predict that hybrid composites can compete with metal by the mid-1980's for both automotive leaf springs and transmission supports. With development in these areas of plastics for automobiles, we can look forward to lighter, less expensive, and more economical cars in the next decade. Such developments might well provide the needed spark to rejuvenate America's auto industry and to further decrease our rate of petroleum consumption.

Combinations

In practice, the preceding ways of ending reports are often combined. You can analyze final sections of reports and identify elements that summarize, elements that conclude, and elements that discuss something related but at a general level (afterwords).

Here are some possibilities for afterword-type final sections:

- Provide a brief, general look to the future; speculate on future developments.
- Explore solutions to problems that were discussed in the main body of the report.
- Discuss the operation of a mechanism or technology that was described in the main body of the report.

- Provide some cautions, guidelines, tips, or preview of advanced functions.
- Explore the economics, social implications, problems, legal aspects, advantages, disadvantages, benefits, or applications of the report subject (but only generally and briefly).

Revision Checklist for Conclusions

As you reread and revise your conclusions, watch out for problems such as the following:

- If you use an afterword-type last section, make sure you write it at a general enough level that it does not seem like yet another body section of the report.
- Avoid conclusions for which there is no basis (discussion, support) in the body of report.
- Keep final sections brief and general.

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11. BASIC DESIGN AND READABILITY IN PUBLICATIONS

The way a text looks matters to a reader, so it should matter to a writer. Letters, reports, and blogs are more than just words on a page or a screen. How ideas are arranged and delivered in physical form, whether electronically or on paper, can make reading seem intimidating, confusing, or downright unfriendly, even if the content itself is perfect. Your text is like a room for your ideas. Sometimes you want readers to get in and get out quickly, but often, you want them to sit down and make themselves comfortable, to put their feet up and stay awhile. Whatever the case, you should be in control of the reader's experience.

And most readers are a lot like TV viewers with remote controls. In a moment, their attention is diverted to another channel if something about your content puts them off. It's important to get their attention and hold it. Good content is a key part of this, of course, but the visual presentation of your content matters too. Reading is a difficult, cognitively demanding task, so if your design helps make your readers' journey through the text easier, you will hold their attention longer. Give readers reasons to linger, and they will.

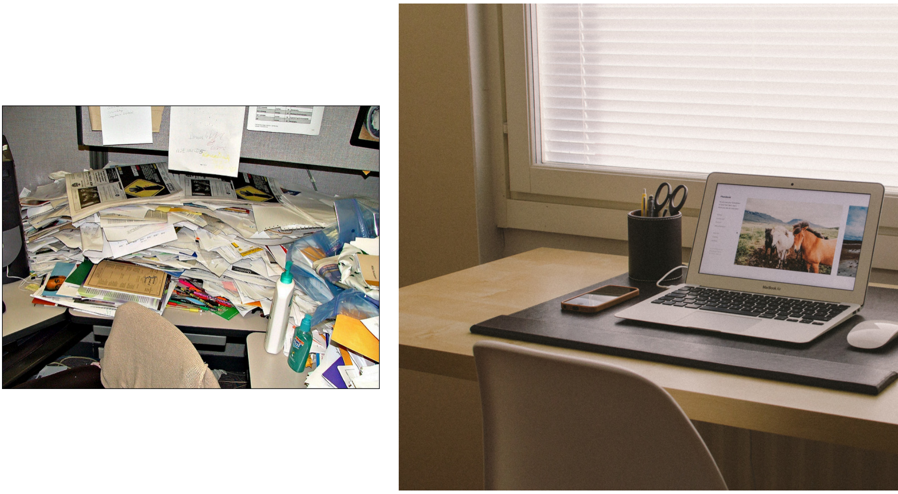

Figure 1: Where do you want to spend the next two hours? Image Credit: “World’s Messiest Office Cubicle Discovered in Colorado” by Jeffrey Beall is licensed under CC BY-ND 2.0; “laptop iphone” is in the Public Domain, CC0.

Good document design is both science and art. The particular design of a document—what it contains, what color scheme it follows, what alignment strategy it reflects, and so on—is the result of a series of choices made by the designer. It takes a long time to master the finer points of design, and this chapter won’t turn you into a designer, but it will offer some simple ways of thinking that will help you strategize about how to make your document intuitive and reader friendly—easy to scan, search, and read.

This is not a chapter on design *per se*; rather, it will familiarize you with a few basic truths and a way of thinking that all designers know well. Whether you’re typing up a memo on new safety policies at work, producing a newsletter for your community group, or putting together a booklet describing the new app you just finished and wish to market, you need to think about a few basic elements of document design.


The Times.

PRINTED LOGOGRAPHICALLY.

Price 3d.] THURSDAY, DECEMBER 4, 1788. No. 1188.

Figure 2: "Times 1788.12.04" by London Times is in the Public Domain. Just looking at the front page makes me tired.

ACTIVITY: Discuss texts that you have found intimidating or hard to read because of their layout or appearance. What exactly made the text difficult to read?

You already engage in some basic document design practices. For instance, when you format an academic essay, you center your title and regularly break to a new paragraph, which signals to the reader that it's time for a breather, the content is shifting slightly, or you are moving on to a completely new topic. You illustrate blogs, Web pages, and PowerPoint slides with photos and graphics, animations, or videos. Even small elements of your writing help guide readers: indentation, changes in type style (bold, italics, underline), or the punctuation at the end of a sentence.

Professional writers, especially those who work for well-funded web sites and mass-market print publications (like newspapers and magazines) are lucky enough to have the services of artists, graphic designers, skilled photographers, and layout experts. But most of us just want to have a cooler-looking blog, a more professional-looking report, or an eBay listing that doesn't make buyers suspect our credibility.

This chapter briefly summarizes some fundamental concepts that you should consider as you revise and shape your text, whether it is in print or electronic form. Then, you will read about and see examples of some basic principles of document design that allow writers to combine graphic elements and text to convey a message to an audience.

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11.1 On Style Conventions

Academic papers, cover letters and resumes, business plans, and other documents tend to follow certain conventions. For example, MLA (Modern Language Association) and APA (American Psychological Association) style dictate, among other things, exactly what academic papers should look like. AP (Associated Press) style shapes the look of newspaper text, and IEEE (Institute for Electrical and Electronics Engineers) style governs engineering articles and documents. For every field in which you write, you'll discover that field-specific style guides shape the appearance of a text, the way language is used, the preferred terminology and vocabulary, and the way sources are cited.

In business and commerce, established firms like Panasonic, IKEA, eBay, Sears, and Trader Joe's have a style too. To preserve their brand identity, firms create recognizable, memorable logos and make sure their documents follow a certain agreed-upon style. Government and civic organizations have logos and letterhead too, and government and military documents are also the product of style conventions.

When you are in school, you'll be told to respect style, citation, and formatting conventions, like MLA or APA. When you go into the professional world, you'll need to find out what the field-specific or company-specific style and citation conventions are. If you publish online, you should consult style and formatting guides recommended by the World Wide Web Consortium (W3C).

> ACTIVITY: Find a document or a Web page whose design makes it difficult for you to read and browse the content. Try to identify what makes this particular page difficult to navigate.

Style conventions are important. When you are designing a document, you'll need to know if a particular style applies to it; for example, a cover letter should generally follow traditional business letter format. Memos and emails might look slightly different; for example, we don't expect to see an address block for the letter recipient on an email because you don't need to know someone's street address to reply to an email.

Many bemoan the lack of a consistent style on web pages; sometimes the way they look detracts from their readability. And we often don't know who wrote the text, where it comes from, or when it was produced. Many people hesitate to assign real credibility to an undated, unsourced blog written by a stranger—and rightly so. This is why sites like Wikipedia demand sources and format all entries exactly the same. The "look and feel" of Wikipedia is now familiar to people around the world, and it is used as a source in certain writing contexts, for good or for ill, precisely because there is some predictable, reliable regularity to its content, and its easy-to-navigate entries are popular with readers.

However, producing good publications goes way beyond just observing style conventions; there are a number of different concepts to consider and many important choices to make as you plan how best to communicate your message, whether you do it on paper or onscreen.

Figure 3: Most readers know exactly what to do with a Wikipedia page. "Marie Curie" *by* Wikipedia *is licensed under* CC BY-SA 3.0

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11.2 Concept 1: Know Your Audience

To some extent, you already know ways in which the nature of your audience can affect your text. In a class setting, other students and instructors will already be familiar with the assignment and the subject matter about which you are writing. You already adjust vocabulary and tone to suit your audience. Thinking about your audience's potential needs, biases, knowledge, attitudes, and preferences helps you present your text suitably.

To help you reach your audience, first consider the formats open to you. In some cases, the context in which you're writing and the audience for which you're writing will determine the format(s) you can use. You wouldn't send a booklet full of images to a teacher to inquire about your child's progress. You can't hand out copies of your blog at a music festival and expect it to get read right away.

> ACTIVITY: Think of other audiences and writing contexts that require a particular format.

Second, consider the strengths and weaknesses of different formats for your particular audience. Are they already familiar with the ideas you are conveying? Do they already know something about the subject matter? What do they still need to know about it? Are there ideas that are likely to confuse them?

How will your audience be interacting with the text? Will they be glancing at your poster as they pass, or will they need to sit down and study your business plan? How much information do you expect them to take in? How much time do they have to devote to reading? Do they agree with you? How open to your message are they: Are they on your side, or do you need to persuade them of something? Do you need to take their age, education level, language background, condition, and cultural or social background into account? Knowing things about your audience can help you communicate effectively with them.

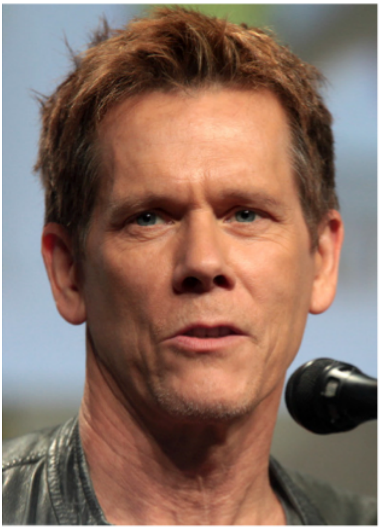

Figure 4: Consider what your audience knows. To some audiences, he's a meme. To others, he's an actor. Some don't know who he is. "Kevin Bacon" by Gage Skidmore is licensed under CC BY-SA 2.0

You even need to consider readers' familiarity with the format itself. Would your grandfather know what to do when he sees a blue hyperlink on your blog? Would a third grader know how to unfold and read a topographical map? Will differences in physical ability affect how your audience interacts with your text? Does your audience need illustrations? Is a short video better than a text-only writeup for your audience? Which formats allow you to provide the information your readers need?

Most Western readers expect text to flow from left to right. But readers of Arabic, Urdu, Farsi, and Hebrew, for example, are accustomed to reading text from right to left. Twitter had to consider this when they adapted their product for an Arabic-speaking audience. Other forms of information are designed for different audiences with different preferences, background knowledge, cultural concerns, and language backgrounds. Chapter 13 offers more information about communicating with audiences whose backgrounds, language use, and cultural expectations are different from your own.

Figure 5: A Canadian stop sign in English and French. [*"Information board, Beltany Stone Circle"*] *by* [*Kenneth Allen*] *is licensed under* [*CC BY-SA 2.0*]

Figure 6: Multilingual road sign, Glendale, CA. Communities accommodate the needs of diverse audiences when they communicate. *"Mirar, Look, and whatever that says in Armenian"* *by Eli Carrico is licensed under CC BY-SA 2.0*

You have a lot of formats to choose from: letters, papers and other printed pages, flyers (double and single-sided), posters, booklets, a wide variety of multi-fold brochures or pamphlets, PowerPoint presentations, blogs, apps, tweets, web pages, vlogs, videos, audio files, and so on. All of these formats have strengths and weaknesses as delivery mechanisms for information.

> ACTIVITY: Discuss the format(s) of the texts you are currently producing in class. Identify some features of your text format might present challenges for your audience?

ACTIVITY: Discuss the benefits and drawbacks of different formats for conveying your information. For example, what is helpful—and limiting—about using a trifold brochure to convey a message? A poster? A short video?

Consider which audiences would be receptive to receiving this information in this format:

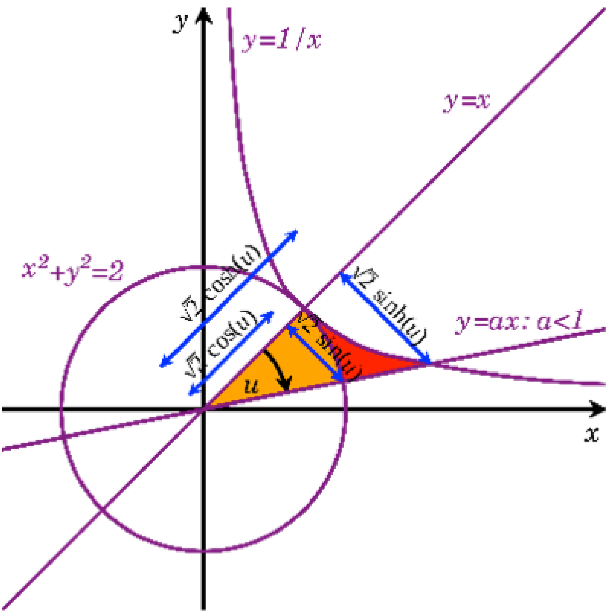

Figure 7: Some formats and some messages are not suitable for every audience. (Public Domain image)

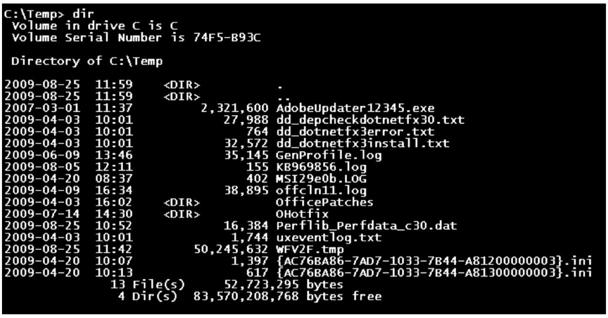

Figure 8: The Windows command line interface. FUN! Public Domain image.

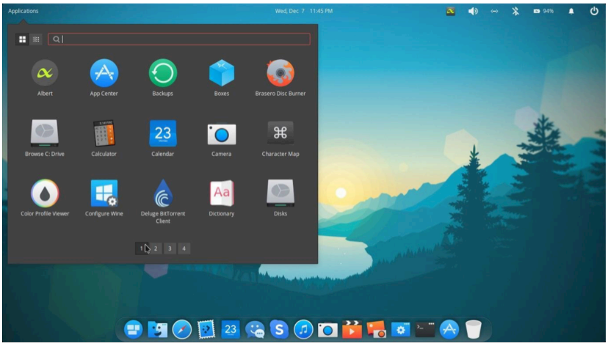

Figure 9: A graphical user interface for an open-source Linux operating system. Image Credit: [KumarPriyansh](), [BackSlash Linux Elsa](), [CC BY-SA 4.0]()

Think of what it meant to go from the interface above to the one below. Designers at PARC, Apple, Atari, and later Microsoft realized that most people needed an easier way to interact with software and hardware. Attention to the preference and experience of its users has consistently won Apple Computer legions of loyal fans.

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11.3 Concept 2: Know your Purpose

It's impossible to think of a piece of written communication without a purpose. Even if you are just scribbling down whatever thoughts enter your head, you have a purpose: to express your own ideas. Self-expression is a common purpose for written texts, but it's not quite as important in academic and professional settings. In fact, you may have to sublimate your personal feelings if the situation calls for it. For instance, no matter how strongly you feel about being billed incorrectly for your internet service, abusive language or profanity in business correspondence to your service provider is generally not effective and may undermine your purpose entirely.

You should be clear about what you want to achieve with a piece of written communication or a publication before you can think about design or the nature of your content. Unfocused publications don't communicate effectively, just as unclear, disorganized, or poorly supported arguments are far less likely to persuade a reader. Before you fire up the software and start creating off the top of your head, spend some time articulating your purpose. Are you trying to inform? Persuade? Instruct? What is the best format for achieving your purpose? For example, trying to explain how to shoot a free throw in prose only, with no visuals, is incredibly difficult no matter how skilled you are as a writer. Your purpose may require diagrams, graphics, or even video. Some things are very difficult to express in writing. The best way to teach people how to shoot free throws is to take them to the basketball court and let them try it. Consider if your purpose can even be achieved in writing at all.

Also consider how many purposes you can manage at once, especially if your text needs to be brief. A single short brochure that attempts to advertise the services at a community center, encourage healthy eating habits, and persuade the audience of the benefits of a municipal bond measure will probably fail on one or all counts. That's a lot to cover in a short publication. A brief booklet that explains the ins and outs of kitesurfing in Kailua will accomplish a lot more than a general "Travel in Hawaii" brochure, which is likely to be pretty but not terribly informative. More specific, focused content is nearly always more helpful and interesting to a reader. Don't try to do too much in a short format.

Sometimes your purpose is set for you. Readers of a business plan, for example, will expect certain information: an executive summary, a rundown of marketing strategies, financial requirements and assets, and a description of how the business will function. Know your audience, and make sure you cover all the required or conventional elements that they will expect.

Failing to understand your purpose (and your audience's needs, which drive your purpose) can cause you to produce a publication that readers can't use. Think of a garage sale sign with no dates and no address. Readers of the sign won't be able to use it, and they'll just ignore it. Similarly, a flyer for a kids' soccer camp that doesn't tell parents what they need to bring or doesn't contain a schedule of the daily program will get you a lot of annoying phone calls and emailed questions.

Most professional publishers plan scrupulously, then they produce many drafts and get tons of feedback to ensure that their purpose is being achieved. Publications like brochures, booklets, and posters are "mocked up," or sketched out in advance, to determine what can be covered in the available space, how many images or photos are needed, and how much text the writer needs to produce. Those who produce Web sites or publications know what they want to achieve before they ever write a word, and you should too. As Abe Lincoln once supposedly said, "If I had eight hours to chop down a tree, I'd spend six hours sharpening my axe." Creating a publication requires you to think in advance about your purpose, your concept, your audience, your goals, your format, and your material needs (images, graphics, text, headlines, color schemes, etc.). Do your due diligence so your final product will have been worth the time you spent on it.

ACTIVITY: Imagine that you are producing a brochure to advertise a new gym/workout space that you plan to open in your town or city. What goals (purposes) will you set for this publication? What types of information will you want to convey? Who is your audience? What graphics or images will be most important?

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11.4 Concept 3: Make Your Publication More Inviting Using Basic Principles of Readability: CRAP

Despite the unfortunate acronym, CRAP is familiar to any graphic designer, and it should be familiar to writers as well. It originated with the influential designer and writer Robin Williams; she now regrets the acronym but not the ideas behind it.

I. C is for Contrast: Use difference to draw readers' eyes to and through your text or publication

You can see evidence of the most basic aspects of contrast in any Web page or magazine. The headline text is always different from the body text. It's often bigger and bolder; it can also be in a different typeface. Headlines make it easy to skip from one story to the next and get a cursory understanding of the news; news writers make it easy for people to read *only* the headlines in a newspaper or Web site.

Applying strong contrasting elements to your text is important because the human eye is drawn to *difference*, not necessarily size. When everything looks the same, it's difficult to focus on anything. When things are different, they are more noticeable.

Figure 10: What stands out here? Don't make your reader play a tough game just to get something out of your document. ["Where's Wally World Record (where you there?)"] by [William Murphy] is licensed under [CC BY-SA 2.0]

Figure 11: Not as hard as Where's Waldo?, but that's the point. ["Cadets"] by [skeeze] is in the [Public Domain, CC0]

When a document has few or no contrasting elements, nothing stands out. The document isn't easy to scan, and it doesn't invite the reader to jump in and read. It's harder to parse, and therefore it's difficult for readers to glean information from the text easily and quickly, if that is their aim.

Figure 12: What stands out on this resume?

Tarr Nation
123 Fake Street
Beaverton, OR 97007
(123) 456-7890
tarrnation@fake.comObjective: The position of Front Desk Receptionist at Global Warranty GroupSkills and Abilities:Computer skills. Skilled with general applications like Internet Explorer, and Microsoft's Office Suite,
and also with less-ubiquitous applications like Intuit QuickBooks and Sage Timeslips. Can learn to use new programs quickly. Maintain hardware, for example printers and scanners.

Communication skills. Write numerous emails and letters to clients, insurers, and other Attorneys. Comfortable making and receiving phone calls.

Education:

Portland Community College, Portland, OR
AA in General Studies
Grad: June 2013

Related Course Work:
Writing 121, 122, and 227

Employment History:

September 2009-present
Fake Law Office, LLC, Beaverton, OR
Legal Assistant, Secretary, Office Manager, and Paralegal

November 2012-February2012
Fake Faker Fakest & Imaginary LLP, Portland, OR
Freelance Billing Assistant

Summer 2009 (June-August)
Camp Freedom, Cody, WY
Camp Councilor, Windsurfing Instructor

References:

Available upon request.

Some documents, like business letters or academic papers, have fewer contrasting elements, but even line spacing and paragraph breaks help indicate where a related chunk of information begins and ends.

Contrast helps draw the reader's eyes to certain elements in your text, and it also helps the reader follow the flow of the information and assess which items are most important and require immediate attention. Contrast creates readability, so you must pay attention to contrast in your documents. The following elements of a text can help you create a friendly, appealing sense of contrast:

Contrast Element I: Size

Your eye moves toward things because they're *different*, not because they're large or small. Your eye is impressed by novelty more than sheer size or color or any other visual characteristic.

There are all sorts of scientific theories about why this is so, but in short, it's not so much that making something bigger makes it more noticeable. A person's height, for example, isn't so noticeable until the principle of contrast comes into effect.

Figure 13: The Fierce Five, the US gold medalists in team artistic gymnastics at the 2012 London Olympics, meet President Obama at the White House. They look fierce, but not so small. Starting third from left: Aly Raisman, Gabby Douglas, McKayla Maroney, Kyla Ross, and Jordyn Wieber. "P111512PS-0165" *by* Obama White House *is in the* Public Domain

Figure 14: "Barack Obama with artistic gymnastic McKayla Maroney 2" by Pete Souza is in the Public Domain Both are fierce, but one is dramatically smaller. The contrast in size provides the visual drama, and pictures like these are favorite memes online.

There is such a thing as *too much size* contrast: think of those web sites with huge type or an overly enthusiastic use of the CAPS LOCK key. Less is more, but some size contrast is essential to draw the reader's eye.

Contrast II: Font size/style/weight

A *typeface* is a collection of fonts. The distinction between the terms *typeface* and *font* stretches back to the days of typesetting: hand-placing individual letters made of wood or metal, inking them, and rolling paper over them. In the digital age, most people use the words *typeface* and *font* interchangeably, though the distinction still matters to experts like designers and typographers.

What's important to most people is that we all have a huge variety of *typefaces*, or *font families*, to choose from: Times New Roman, Arial, Bookman, Georgia, and Garamond are familiar to many of us. It's important to choose a font (a particular size, style, and weight within a typeface) that fits our purpose. Some, like script and handwriting typefaces, are too hard to read and so aren't appropriate for body text, for example. Some typefaces work well as headlines: Franklin Gothic Condensed and Caslon are two typefaces often used for newspaper headlines. The "font" chosen (size, weight, style–italic, bold, etc.) will be the designer's choice.

It's also important to distinguish between serif and sans-serif fonts. Sans serif fonts, like Helvetica or Futura, are simple and smooth; the letters don't display the "feet" and ornamentation (serifs) that serif fonts do. Sans serif fonts are often used for headlines, but serif fonts are more likely to be used for body text. Many typographers think serif fonts (also called Roman fonts) make large blocks of body text easier to read. Some of the preference is really just about tradition.

Figure 15: Three common sans serif typefaces (font families). Image Credit: Roger Koslowski, Typefaces-sansserif, CC BY-SA 3.0

Figure 16: Baskerville, a nice serif typeface. (Public Domain image)

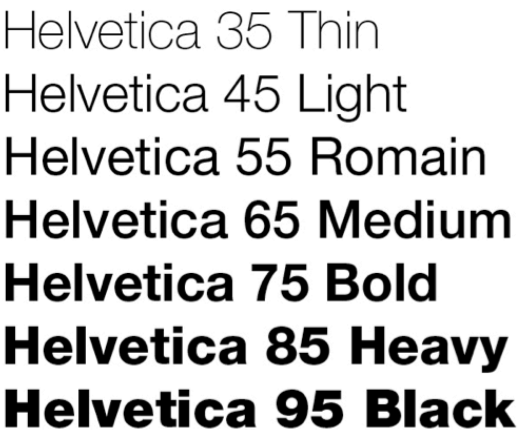
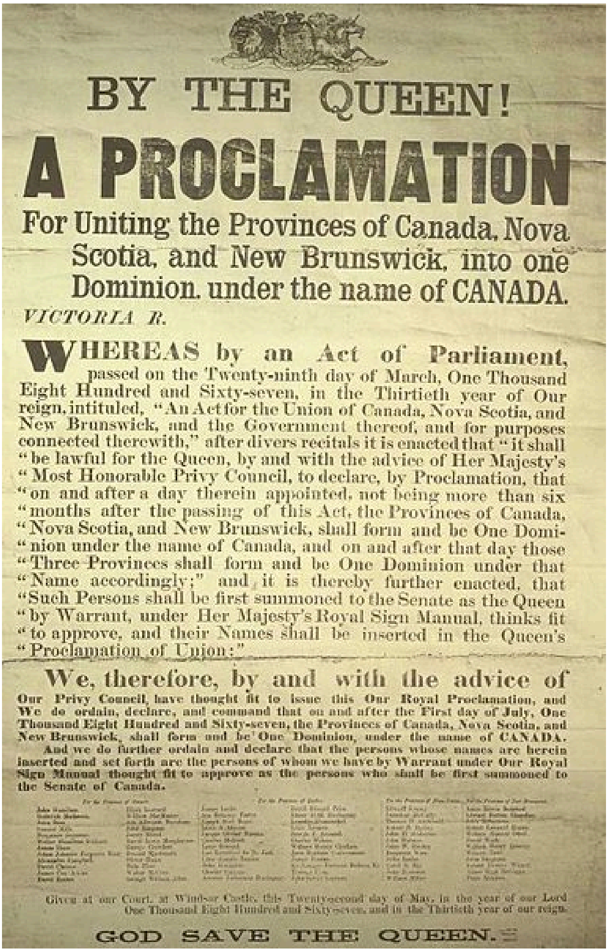


Figure 17: Each typeface family (like Helvetica) contains many sizes and many styles—light, regular, bold, italic, condensed, lower case letters, upper case letters, small caps, schoolbook, old style, and so on. (Public Domain image)



BY THE QUEEN!

A PROCLAMATION

For Uniting the Provinces of Canada, Nova Scotia, and New Brunswick, into one Dominion, under the name of CANADA.

VICTORIA R.

WHEREAS by an Act of Parliament, passed on the Twenty-ninth day of March, One Thousand Eight Hundred and Sixty-seven, in the Thirtieth year of Our reign, intituled, "An Act for the Union of Canada, Nova Scotia, and New Brunswick, and the Government thereof, and for purposes connected therewith," after divers recitals it is enacted that "it shall "be lawful for the Queen, by and with the advice of Her Majesty's "Most Honorable Privy Council, to declare, by Proclamation, that "on and after a day therein appointed, not being more than six "months after the passing of this Act, the Provinces of Canada, "Nova Scotia, and New Brunswick, shall form and be One Domi-"nion under the name of Canada, and on and after that day those "Three Provinces shall form and be One Dominion under that "Name accordingly;" and it is thereby further enacted, that "Such Persons shall be first summoned to the Senate as the Queen "by Warrant, under Her Majesty's Royal Sign Manual, thinks fit "to approve, and their Names shall be inserted in the Queen's "Proclamation of Union:"

We, therefore, by and with the advice of Our Privy Council, have thought fit to issue this Our Royal Proclamation, and We do ordain, declare, and command that on and after the First day of July, One Thousand Eight Hundred and Sixty-seven, the Provinces of Canada, Nova Scotia, and New Brunswick, shall form and be One Dominion, under the name of CANADA.

And we do further ordain and declare that the persons whose names are herein inserted and set forth are the persons of whom we have by Warrant under Our Royal Sign Manual thought fit to approve as the persons who shall be first summoned to the Senate of Canada.

Given at our Court, at Windsor Castle, this Twenty-second day of May, in the year of our Lord One Thousand Eight Hundred and Sixty-seven, and in the Thirtieth year of our reign.

GOD SAVE THE QUEEN.

Figure 18: Canada is born! Note the large sans serif headlines and smaller serif fonts used as body text. *"Proclamation of Canadian Confederation" is in the Public Domain*

Contrast III: Direction (vertical, horizontal, circular, etc.) or position (top, bottom, side)

Changing the direction or orientation of text, graphic elements like lines, banners, or screens (smaller transparent or opaque boxes, often in a color that contrasts with the background)

Figure 19: Use interesting orientations to attract your readers' attention. ["Advertisement from 1891 for the first "Witch Spoon""]() *is in the* [Public Domain]()

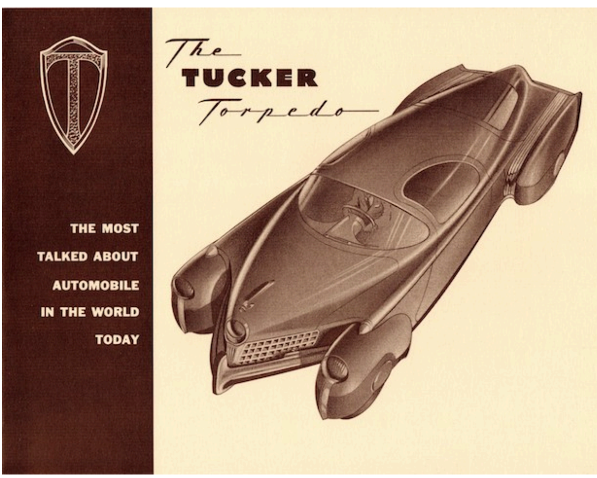


Figure 20: Note the image oriented on the diagonal and the opaque screen against which the text and logo are set. Sharp! ["Tucker Torpedo Brochure"]() *by* [Alden Jewell]() *is licensed under* [CC BY-SA 2.0]()

Figure 21: Templates for flyers, newsletters, web pages, and PowerPoint slides can help you provide visual interest if you're short on ideas. Image Credit: [October Newsletter Template](), [Word Draw](), [CC BY-2.0]()

Contrast IV: Alignment (center, left, right, justified)

Most students are familiar with how to align type. MLA and APA style, for example, mandate left-aligned body text and a centered headline. MLA Works Cited pages call for a hanging indent of ½ inch. A change in alignment can create visual interest. For example, headlines are often centered to make them noticeable.

Images are often placed in a particular location on a page (or slide) to draw readers' attention in one direction or another. Consistent alignment with slight variations to provide interest is particularly important in PowerPoint presentations. You will be flipping from one slide to another, and if the text blocks and headlines are not aligned identically, your text and headlines will appear to "jump around" the screen in a distracting way.

Figure 22: Templates for Publisher, PowerPoint, or other software packages help you keep track of every element of your publication. (Public Domain image)

Contrast V: Graphic elements like photos, banners/bands, pull quotes, or logos

Remember, we're trying to create contrast, or difference—breaking up huge blocks of text with a variety of graphic elements can really add visual appeal and interest.

Just remember—as with the examples below, less is more. Think of all the publications and web sites you've seen whose designers thought it was awesome to make text bold AND underlined AND multicolored AND flashing. With a bright yellow background. And too many animated GIFs. It repels readers rather than attracting them. I know you know what I mean.

Figure 23: Striking images and pull quotes contrast with less-distinctive elements, like text and background. [“Fashion Magazine Layout”](#) by [Aamir Raza](#) is licensed under [CC BY 2.0](#)

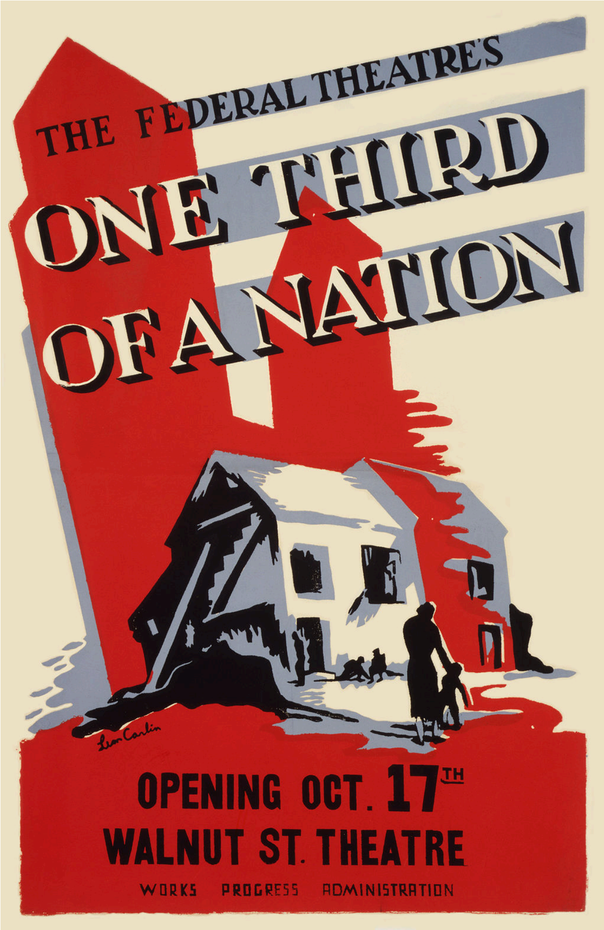


Figure 24: This poster uses contrasting alignment, contrast in text, and simple color contrast to create a dramatic effect. Less really can be more. "One-Third of a Nation, a Living Newspaper play by the Federal Theatre Project" *by* https://commons.wikimedia.org/wiki/File:One-Third-of-a-Nation-Poster-2.jpg *is in the* Public Domain

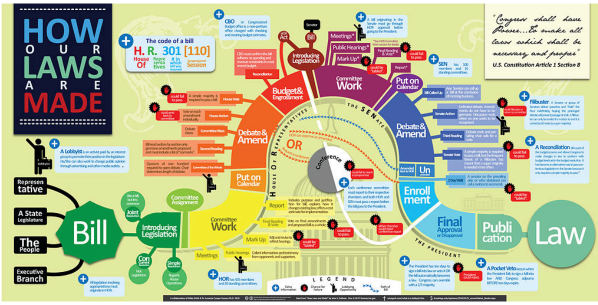


Figure 25: Complicated issues are sometimes hard to express visually. [“How Our Laws Are Made”](#) by [Mike Wirth and Dr. Suzanne Cooper-Guasco](#) is licensed under [CC BY 3.0](#)

Contrast VI: Color (of background, text, graphic elements, etc.)

Use color to make certain elements stand out. Create a sense of drama when you contrast one color with another. Make sure you don’t use too many colors and your color combinations are easy to read.

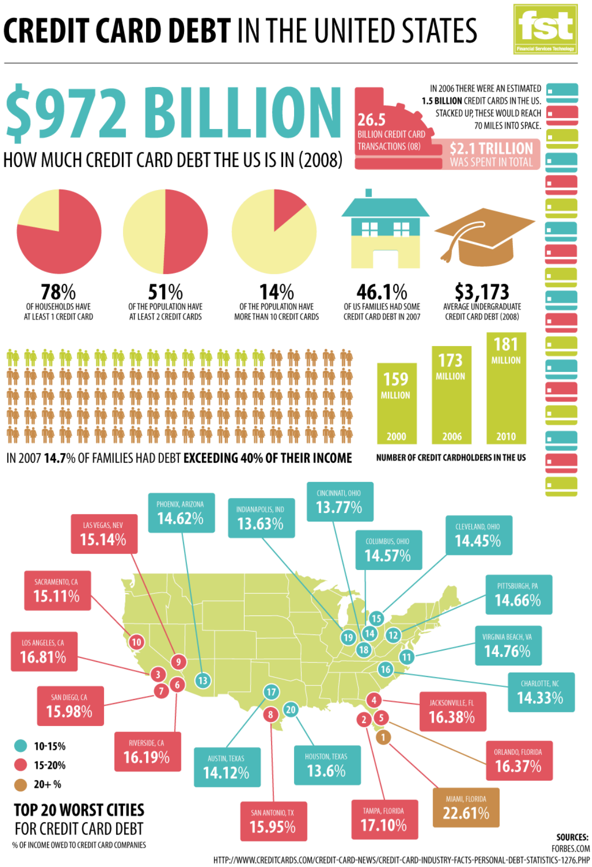


Figure 26: Contrasting color in text, images, and design elements. Image Credit: "Credit Card Debt in the US" by GDS Infographics is licensed under CC BY 2.0

Contrast VII: Use of negative or "white" space

Sometimes, the best way to attract a reader's attention to a contrast is to "go negative." The absence of content provides air and space and draws the reader's attention to the content itself. Negative space, or white space, is the space around text, images, and other elements in a document. It makes documents of all kinds (digital and print) more readable, more restful-looking, more inviting to the reader, simpler, and more elegant. It is associated with that "high-end" restaurant or salon menu look.

The French Laundry

Tasting of Vegetables

December 4, 2005

"Gratin" of Jacobsen's Farm Cardoons,
and Périgord Truffles with Parmigiano Reggiano "Mousse"

Salad of Citrus Glazed Haas Avocados,
Blood Orange "Suprêmes", Hearts of Palm "Ribbons"
and Sicilian Pistachio "Vinaigrette"

Globe Artichokes "À la Barigoule",
Sweet Carrot "Buttons", Marinated Pearl Onions,
Taggiasche Olive "Raviolini" and "Consommé de Barigoule"

Oven Baked Baby Heirloom Beets,
Caramelized Belgian Endive, Sierra Beauty Apples,
Candied Walnuts and Frisée

Butter Braised Princess La Ratte Potatoes,
Roasted Romaine Lettuce, Garden Radishes
and "Vinaigrette aux Truffes Noires"

"Pot Pie"
"Ragoût" of Celery Root, Glazed Chestnuts
and Golden Chanterelle Mushrooms "en Croûte de Pâte Feuilletée"

"Andante Dairy Acapella"
Fennel Bulb "Relish", Fennel Pollen "Lavosh"
and Banyuls Vinegar Reduction

Spiced "Pruneaux d'Agen" Sorbet
with Pumpkin Seed "Granola", Pumpkin "Royale"
and Cranberry "Coulis"

Oven Baked Manjari Chocolate "Mousse",
Red Wine Poached Michigan Sour Cherries,
"Crème Fraîche et Réduction de Cuisson des Cerises"

"Mignardises"

Prix Fixe 175.00

A 19% Service Charge is Added to Each Check

6640 Washington Street, Yountville CA 94599 707.944.2380

Figure 27: Case in point. High-end. "French laundry carte" by EncMstr is in the Public Domain

Figure 28: Not so high-end, but probably still delicious. Image Credit: [Laika ac,](#) [Laika ac Pizza Restaurant Menu (7953649854)](#), [CC BY-SA 2.0](#)

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11.4 Concept 3: Make Your Publication More Inviting Using Basic Principles of Readability: CRAP, continued

II. R is for Repetition: Repeat design strategies throughout your document to provide a sense of connection

The basic rule of repetition means that in any text, visual or textual elements that have similar functions should be formatted similarly in order to create continuity and show close relationships between the elements.

For example, newspapers have consistent ways of labeling different sections, like Sports, but there is also design consistency throughout the entire paper so you can tell that the section you just picked up belongs to a particular newspaper. USA *Today* in particular is notorious for its consistent repeated color coding and design.

Figure 29: USA Today's mastery of repetition has made it instantly recognizable. Image Credit: truetrue, [WSTM Mossmen0051](), [CC BY-SA 3.0]()

On a smaller scale, in a resume, most applicants use bullet-pointed sections to list their job duties. "Repetition" in this context means that all these bullet points should be formatted identically: the same font, size, line spacing, and indentation. Each group of bullet-pointed items should be the same distance from the text above and below. The bullet points themselves should be exactly the same shape and size. This can be a lot of things to keep track of!

Repetition also applies to styles like MLA or APA. All titles are centered. All page numbers are in the upper right-hand corner, after your last name and a single blank character space. The same typeface is used throughout the paper. All paragraphs have exactly one empty line space between them. And so on.

Repetition means that every line classified as a "headline" should look like a headline, and headlines formatted to look alike can be identified as headlines with a similar function in the text. The same principle applies to body text. Fonts should not change without a reason. Lines, logos, and other graphic/visual elements should be formatted consistently. This repetition provides a sense of order and continuity that makes your document more readable and professional looking.

Since managing the formatting of multiple elements by hand can be difficult, many software programs provide templates–ready-made layouts into which you can plug your text and photos and thereby produce a variety of documents with a consistent look and feel. Microsoft Word, for example, also allows you to set Styles that will keep formatting choices like size, font, and style (bold, italic, etc.) the same for blocks of text with the same functions (body text, headlines, bullet points, subheadings).

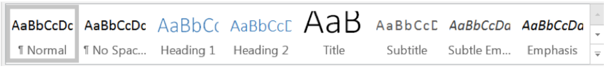


Figure 30: The Microsoft Word "Styles" menu.

Templates for newsletters, resumes, and PowerPoint presentations ensure that basic design elements like font size/style, color, image size and alignment are consistent from page to page. Templates provide a quick, easy way to solve repetition issues. Look at the difference repetition makes in even the most basic of resumes, for example. Contrast the two below.

...........brianna lehman

objective:
To apply my creative skills and customer service experience in a business environment to maintain and improve current operations, and to create a visual environment that defines a brand.

education:
2003-2007
University of Colorado
I majored in Art and Anthropology with an emphasis on sculpture in the former and archaeology in the latter.

skills:
I've been working as a freelance photographer, taking pictures of people, pets and products. I've been selling various handcrafted objects on the internet, allowing me to learn the ins and outs of online retailing, including marketing and advertising. I'm very good with my hands, and can make almost anything. I have experience with carpentry and welding, as well as video production and crew work. I speak a little Spanish, but I'm much better at understanding it. I'm a fast learner and it only takes one try for me to get something. I'm always eager to learn something new and I like to work hard every day.

I also run a blog, dedicated to the visual and the tasty: www.thecraftbegins.com

experience:
Gaiam
2009
During my 8 week internship, I assisted the creative department. I redesigned the layout of the webpage, helped manage the online content system, and created ads for email promotions. I assisted in choosing products for the catalog and the catalog layout. I also worked on developing innovative concepts for social networking platforms.

Robot Fuel LLC
2007-present
I am the owner of a small graphic design firm. As such, I act as designer, art director, manager, customer service representative, salesperson, and accountant. I also have experience with everything that running a business entails, such as maintaining business relationships, managing people and projects, meeting deadlines, etc.

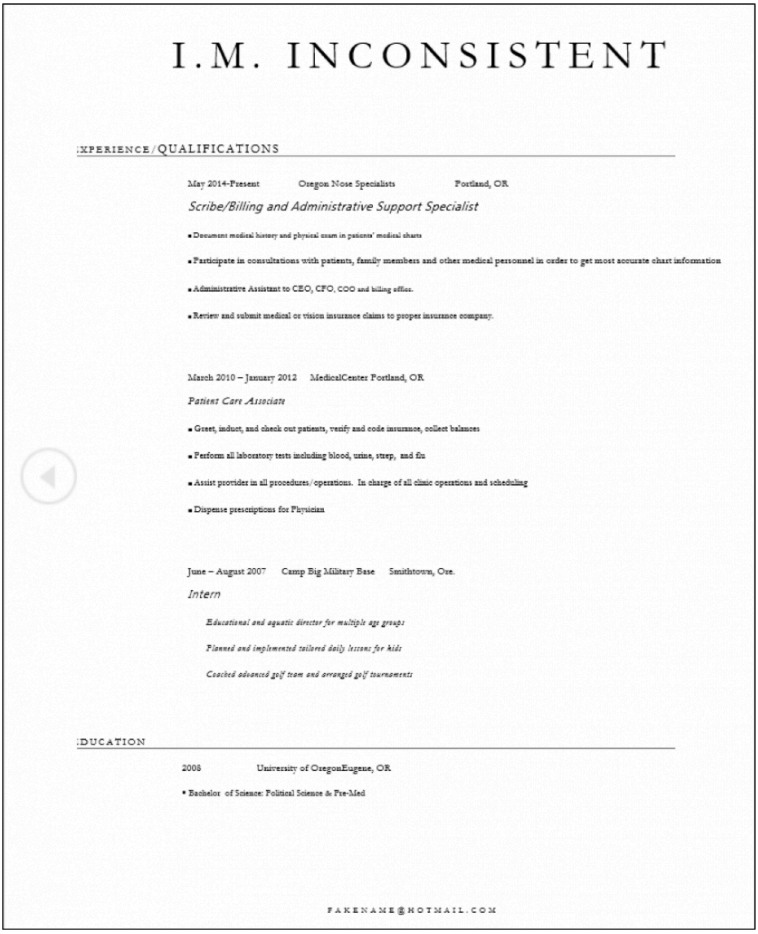
The Flagstaff House Restaurant
2006-2007
At this landmark Boulder location, I had the opportunity to try out many different jobs. As a hostess, I was responsible for providing the kind of customer service expected at a five-star restaurant. In the kitchen I worked as an expediter, acting as the link between the kitchen and the staff in a fast-paced environment. I also served, assisted the managers and handled the restaurant's visual needs, such as creating menus and other print material for events and promotions.

Fresh Produce Sportswear
2005
I worked at both the corporate office and the flagship store in Boulder, developing visual merchandising elements for my store as well as other locations around the US. I was in charge of window displays and store merchandising. I also traveled to several out-of-state locations to assist in the opening of new stores.

Anthropologie
2003-2004
I helped open the first location in Colorado (at Cherry Creek Mall) by assembling visual information and assisting in visual merchandising, including the creation of original signage. I also took direction in creating visual displays for the holiday season, as well as developing my own ideas.

phone: 303.229.3940 ······· 606 S. Miller Avenue, Lafayette CO 80026 ··········· bri.lehman@gmail.com

Figure 31: Whatever else you think about the design of this resume, choices made for typefaces,
size, position, and indentation are consistent. Each section is laid out identically.
Image Credit: brianna.lehman, resume, CC BY 2.0



I.M. INCONSISTENT

:XPERIENCE/QUALIFICATIONS

May 2014-Present Oregon Nose Specialists Portland, OR

Scribe/Billing and Administrative Support Specialist

- Document medical history and physical exam in patients' medical charts
- Participate in consultations with patients, family members and other medical personnel in order to get most accurate chart information
- Administrative Assistant to CEO, CFO, COO and billing office.
- Review and submit medical or vision insurance claims to proper insurance company.

March 2010 – January 2012 MedicalCenter Portland, OR

Patient Care Associate

- Greet, induct, and check out patients, verify and code insurance, collect balances
- Perform all laboratory tests including blood, urine, strep, and flu
- Assist provider in all procedures/operations. In charge of all clinic operations and scheduling
- Dispense prescriptions for Physician

June – August 2007 Camp Big Military Base Smithtown, Ore.

Intern

Educational and aquatic director for multiple age groups

Planned and implemented tailored daily lessons for kids

Coached advanced golf team and arranged golf tournaments

:DUCATION

2008 University of OregonEugene, OR

- Bachelor of Science: Political Science & Pre-Med

FAKENAME@HOTMAIL.COM

Figure 32: This applicant has made inconsistent line spacing, typeface, alignment and indentation, and type size choices.
Image Credit: Author.

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11.4 Concept 3: Make Your Publication More Inviting Using Basic Principles of Readability: CRAP, continued

III. A is for Alignment: There should be a clear, deliberate arrangement of items on a page

Alignment can refer to text, as in the left-aligned body text required in MLA style. But in document design, it means much more; it refers to how the entire document is arranged. Most designers align all their content to some sort of a grid or pattern, creating a distinct, intentional arrangement of items on a page or screen. They use plenty of white space to cushion the items, which makes higher-contrast items "pop."

Imagine you're hanging 20 pictures on a wall. You probably should not just throw them up there randomly. You might measure and equalize distances between items, put unusual items in certain places (like in the center), or put similarly shaped or sized items together. This will provide a sense of order to your arrangement of the items.

Figure 33: Even though the arrangement of these items could seem random, there is some regularity, and there is an overall shape or grid governing the position of each picture. Image Credit: "homestilo gallery wall" by homestilo is licensed under CC BY 2.0

Software packages often allow you to draw lines or use an existing invisible grid to which you can "snap" items like images, blocks of text, or graphics. Templates do the hard work of arranging items on a page (or screen) for you. That's why so many people use tools like WordPress, Illustrator, Publisher, Word, and PowerPoint—they allow you to arrange items easily, without the hard work of lining everything up by hand.

Newspaper and magazine layout artists once used various kinds of tape, contact cement (rubber cement), or wax adhesives to stick cut-out headlines, text blocks, photos, and ads to a page, just to produce a daily or weekly newspaper. To line up text and image blocks, they used wooden or metal rulers, graph paper, and T-squares. It was slow, tedious work. And rubber cement smells. The digital publishing revolution did away with all that. Most people who've spent half the night squinting over a yearbook layout that just won't line up are glad about the changes.

Figure 34: Thank heaven for desktop publishing and digital layout tools. (Public Domain image)

Figure 35: Much easier to put together, but some would argue that it lacks soul. But it's readable, simple, clear, and accessible to anyone. Image Credit: "WordPress main theme" by D135-1r43~commonswiki is released under GNU GPLv3.

Still, alignment problems have not all been solved in the digital era. See for yourself some of the results of less deliberate alignment vs. controlled, arranged items on a screen, for example by visiting What are some examples of bad web design?

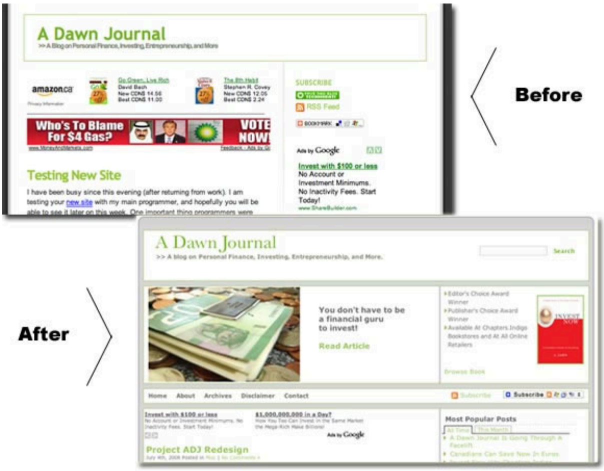

Figure 36: Before and after images show how alignment affects the usability of this website. Image credit: [“Welcome To The New A. Dawn Journal”] by [Ahmed Dawn] is licensed under [CC BY 2.0]

Learning how to arrange text and images artfully on a page takes tons of time, not to mention a whole email inbox full of user feedback, collaboration, thought, and hard work. This chapter will only acquaint you with some of the most basic elements of design. Perhaps after reading this chapter, you'll start seeing CRAP wherever you look.

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11.4 Concept 3: Make Your Publication More Inviting Using Basic Principles of Readability: CRAP, continued

IV. P is for Proximity: Items that have similar functions or purposes should be grouped together

Is this a rock formation or just a random collection of boulders?

Figure 37: Is there any purpose to this grouping? Image Credit: "Small Tree In Field Of Rocks" by Linnaea Mallette is in the Public Domain, CC0

Figure 38: There is purpose to this grouping. This is the Ham Hill Stone Circle in Somerset, England. It's a deliberate product of modern England, it was constructed in the year 2000 to commemorate local stonemasons and the long history of quarrying local hamstone. "Ham Hill Stone Circle" by Gaius Cornelius is licensed under CC BY-SA 3.0

The second photo depicts a deliberate grouping, though it probably wasn't hard to figure that out. When we work with pictures and blocks of text and not stones, think of this: when design or text elements are placed next to each other in certain ways, readers or viewers can see that they are meant to be considered together and have some sort of relationship. For example, photos and figures have captions that explain their contents. Nearby images often illustrate the content found in body text. Headlines are placed above body text whose content and focus they describe in briefer form.

Proximity can be especially critical in booklets, newsletters, and brochures, in which certain pages or panels might be grouped together under a subheading. Individual pages can be designed to reflect a larger relationship with the overall theme or subject matter. For example, the themes provided by blogging platforms like WordPress take care of this for you—every page will have a recognizable layout and though individual pages might be slightly different, they'll be recognizably related to the blog's main page. Web sites work the same way, as do book chapters.

The principle of proximity even affects white space: equal amounts of white space and equal line spacing indicate that items are related or should be considered as parts of a whole. If headlines, captions, or body text blocks aren't close enough to the image or text to which they are related, the reader could be confused about what is—and is not—related.

Figure 39: What does emphasis indicate in this ad? Are prunes and flour different types of eggs on offer? [“1945 – Atlantic & Pacific Tea Company – 16 Feb MC – Allentown PA”](#) *by* [Allentown Morning Call Newspaper](#) *is in the* [Public Domain](#)

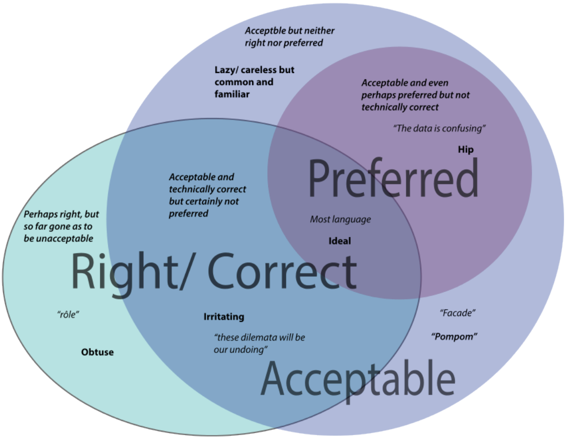

Figure 40: What's going on here? Image credit: [Venn Diagram of language issue space](#) by [KDS4444](#) is [CC0, Public Domain](#)

The Venn diagram above is very confusing. Why are there different font weights, sizes, and quotation marks setting off the words? Note that entries for the "Acceptable" lavender category are in both the top left and bottom right of the circle. Their relatively distant position (proximity) makes the relationship of these terms unclear. There are no headlines or labels here to help us understand, and the design strategy isn't doing readers any favors.

Planning and adjusting how items are grouped on a page helps you design your text, graphics, and images so that readers can see what's related, what goes together, what's different, and what is similar. Relationships between items will be clear.

Figure 41: Who's together here? [Martak is jennifer lopez](#) by Universal Music Greece is in the [public domain](#).

It's clear which two are the couple in the illustration above. Same with headlines and body text, groups of bullet points, images and captions, and a whole lot more. What is close together will be seen to have a relationship. Moving items further away decreases the strength of that relationship in the minds of your readers.

ACTIVITY: Go online or out into the world. Try to find examples of publications (print or electronic) that convey messages clearly. Critique them according to the principles in this chapter: Purpose, Audience, and CRAP. Also, find an example of one that does not achieve its goal. See if you can identify and describe which of these principles are not being followed in less-effective publications.

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11.5 Slides and PowerPoint presentations

To PowerPoint or not to PowerPoint?

Microsoft introduced PowerPoint in 1990, and the conference room has never been the same. Millions were amazed by the speed with which a marketing professional or an academic could put together a consistent, professional-looking slide presentation. And then…

At some point, somebody with critical thinking skills asked a great question: "Do we really need all these slide shows?" The stock images of arrows, businesspeople in suits, stick figures scratching their heads, and the glowing, jewel-toned backgrounds eventually looked tired and failed to evoke the "wow" reaction presenters desired.

Microsoft is attempting to refresh the design options for PowerPoint, and there are dozens of good alternatives, some of them free (Keynote, Slide Bureau, Prezi, SlideRocket, Easel.ly, Emaze, Slidedog). But the fundamental problem remains—text-heavy, unfocused, overlong presentations are the problem, not the software. If you are sure that a visual presentation will provide something necessary to your audience, keep the number of slides and the amount of text on each slide to a bare minimum. Think of a slide presentation as a way of supporting or augmenting the content in your talk; don't let the slides replace your content.

If you had planned to read your slides to the audience, don't. It's considered one of the single most annoying things a presenter can do. Excessively small text and complex visuals (including distracting animations) are frequently cited as annoyances.

Try to design your slides so that they contain information that your viewers might want to write down; for example, good presentations often contain data points that speakers can't just rattle off or quick summaries of key concepts that viewers won't be able to make up on the fly. If you can't explain how the slides add value to your presentation, don't use them.

To get a feel for what may annoy your audience, try Googling "annoying PowerPoint presentations." You'll get a million hits containing helpful feedback and good examples of what *not* to do. And finally, consider designing your presentation to allow for audience participation instead of passive viewing of a slideshow—a good group activity or a two-way discussion is a far better way to keep an audience engaged than a stale, repetitive set of slides.

Tips for good slides

All of the design guidelines in this chapter—CRAP in particular—will help you design consistent, helpful, and visually appealing slides. But all the design skill in the world won't help you if your content is not tightly focused, smoothly delivered, and visible. Slides overloaded with text and/or images will strain your audience's capacity to identify important information. Complex, distracting transitions or confusing (or boring) graphics that aren't consistent with your content are worse than no graphics at all. Here are some general tips:

- Simplicity is best: use a small number of high-quality graphics and limit bullet points and text. Don't think of a slide as a page that your audience should read.
- Break your information up into small bites for your audience, and make sure your presentation flows well. Think of a slide as a way of reminding you and the audience of the topic at hand.
- Slides should have a consistent visual theme; some pros advise that you avoid using the stock PowerPoint templates, but the

Repetition and Alignment aspects of CRAP are so important that if you don't have considerable design skill, templates are your best bet. You can even buy more original-looking templates online if you don't like the ones provided with the software.
- Choose your fonts carefully. Make sure the text is readable from a distance in a darkened room. Practice good Repetition (the "R" in CRAP) and keep fonts consistent.
- Practice your presentation as often as you can. Software is only a tool, and the slide projector is not presenting—*you* Realizing this is half the battle.

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11.6 Conclusion

Texts are forms of nonverbal (or not exclusively verbal) communication aimed at a particular audience. They are always expressions of some set of goals or purposes. They can contain visual elements, sound, textual elements, graphic elements, and even textures (think of a book of fabric samples). There is a vast array of tools to help you communicate whatever you wish to any audience you choose. Reaching a large audience has never been easier, but the very fact that you may be communicating with many different kinds of people creates new challenges for you as a communicator. Providing clear, easy-to-access texts is critical. Being clear about your message is vitally important. Just as there's never before been an audience as vast and diverse as the global internet, there's never been a greater chance that you will be ignored, misinterpreted, misunderstood, criticized, or even trolled. If you adhere to basic design principles, at least you will be safe from the most basic kinds of criticism aimed at confusing PowerPoint presentations, distractingly busy web sites, or cheesy-looking brochures.

Content is like water—it takes on the shape of whatever you pour it into. Therefore, the container that holds your text does matter. However, content is also like water in another sense. If it's no good, no one will want to drink it down. It won't quench anyone's thirst for knowledge, for instructions, for information. Good content, a focused, clear purpose, and careful attention to the needs of the audience will ensure that if your container is appealing, your message will shine through, and you will achieve your goal as a writer.

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12. EMPLOYMENT MATERIALS

Employment materials are some of the most important, and most challenging, pieces of writing you will ever undertake. This is because of the number of contradictions involved in writing employment materials. The résumé is both a simple list of your job history, and a referendum on your qualifications; you must show your passion for the job you are applying for, but too much passion is over-the-top. Your job application (cover) letter is an evidence-backed statement of your achievements, a clear representation of your personal brand, and the first writing sample a potential employer will see. Add to that one more challenge: your materials must be concise, and yet also comprehensive. If accomplishing all these tasks at once feels daunting, you are not alone.

The aim of this chapter is to ease your mind and demystifying the job application process by giving you some core principles to follow. Whether you are applying to be an administrative assistant or an engineer, a web developer or a caregiver, many of the strategies are the same. As you read through this chapter, keep the following principles in mind:

- The more customized your materials are, the more successful they will be – generic materials are unlikely to capture an employer's attention.
- Your materials should demonstrate not why this job would benefit you, but instead how you, as a unique candidate, can benefit your potential employer.
- Your materials should not simply list every job you've ever held, but emphasize transferable skills, making an argument for how your past accomplishments prepare you for the job you are applying for.

To tailor your materials to a specific audience is to work smarter, rather than harder. In fact, tailoring is one of the core principles of technical writing – a principle you read about in the audience analysis chapter of this text. Imagine yourself in the position of a hiring manager. Would you be more likely to hire a candidate whose generic résumé looks like it has been sent to dozens of similar employers? Or would you be more likely to hire a candidate who has researched your business and understands what the job entails?

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12.1 Preparation

Spending adequate time preparing to write your employment materials can save you many headaches in the drafting process. This section of the chapter covers strategies that can help in your job search.

Finding a Job

Finding a suitable job opening itself can be a time-consuming process. Here are a few resources to get you started:

- **Job boards**: browse sites like Indeed, CareerBuilder, Glassdoor and Monster to search for jobs in your field.
- **Specialty job lists:** look for lists of jobs in specific industries such as food service (Poached), nonprofits (Idealist), or media (MediaBistro)
- **Company, organization and government web sites**: visit the employment section on websites of companies you admire; search federal, state, county, and city websites for job government job postings.
- **Your own network:** talk to friends, past employers, and professors or visit LinkedIn to search for openings at companies in your network.
- **Your college:** visit your college or university placement office/ career center and attend job fairs hosted at your college.

Many job seekers also use craigslist to look for work; just be aware that craigslist postings often lack detail and may come from headhunters or placement agencies, rather than from the direct employer.

Once you have found a job, make sure to print and/or save a copy of the job posting or job description. You will use this document to help you tailor your application materials. Because companies often delete the job posting once they have received sufficient applicants, it is important that you save your own copy of the document by copying the text and pasting it into a new document, or by saving the webpage.

Conducting a Self-Inventory

As you work on your resume, you may worry that you have nothing valuable to include, or you may worry that you are "bragging." One way to get over these hurdles is to allocate pre-writing time to a self-inventory. Brainstorm your skills, accomplishments and knowledge. What did you accomplish at work, school, or a volunteer position? What skills have you learned? What would you tell a friend or family member you were proud of having achieved there? Start writing down key terms and action verbs that describe your experiences and accomplishments, and don't worry yet about putting them into a résumé format.

Try this

For help brainstorming action verbs that describe your skills, browse a key term list such as the one below. First, scan the groupings of skills (Communication Skills, Creative Skills, Financial Skills etc.) for key terms related to skills you have or work you have done. Then, write down 1) categories of skills you have (again, Communication Skills, Creative

Skills, Financial Skills etc.) and 2) action verbs that describe skills you have or work you have done (e.g. analyzed, performed, calculated, advocated, etc.).

Communication/ People Skills	**Creative Skills**	**Management/ Leadership Skills**	**Helping Skills**	**Organizational Skills**
Collaborated	Combined	Assigned	Aided	Arranged
Communicated	Created	Coordinated	Arranged	Categorized
Developed	Developed	Decided	Assisted	Distributed
Edited	Drew	Improved	Contributed	Organized
Incorporated	Illustrated	Led	Cooperated	Recorded
Proposed	Planned	Managed	Encouraged	Responded
Suggested	Revised	Oversaw	Helped	Updated
Synthesized	Shaped	Recommended	Motivated	Tracked
Translated	Crafted	Reviewed	Supported	Monitored
Facilitated	Conceived	Supervised	Prepared	Synthesized
Mediated	Established	Delegated	Bolstered	Adapted

Table adapted from Creating Resumes I by Roads to Success, licensed under CC BY-SA 4.0.

As you gather information about your work history and skills, double check that your information is accurate and current – gather dates of employment, dates of trainings, lists of activities you have been involved in, academic awards, achievements and special projects. Job descriptions or performance reviews from previous jobs can also include key terms to include on your resume. Finally, ask former coworkers or managers about your significant workplace contributions.

Try this

Get a partner and a piece of paper. Take ten-minute turns speaking and scribing. The speaker should describe past work history and experience, especially as it relates to the job at hand. The scribe should take notes while listening to her partner's description, taking care to note any key terms she hears. The scribe should also ask questions that help the speaker go into detail about the experience (who, what, when, where, why?). Finally, the scribe should help identify any skills or achievements the speaker may not realize he or she has; sometimes we have a skill that we don't recognize, because we assume it is something *everyone* can do. Then, switch.

Researching Your Potential Employer

It is important that you research your potential employer as well as the job for which you're applying. The easiest way to research a potential employer is to visit the company's website. Look for an "about us" page or a "mission statement," and observe how the company describes its goals and values.

Try to answer the following questions about the company or organization:

- Whom does this company serve?
- Who are this company's partners or competitors?
- What technologies would I use at this company?
- What is the tone of this company's materials (formal, conservative, humorous, "cutting edge," etc.)?
- How would you describe this company's brand?

Here are a few more ways to research a company: search for its name on LinkedIn and other social media sites, browse for news articles about the company or press releases written by the company, speak with friends or colleagues who work for the company, or call the company to request an informational interview.

As you research, look for ways to connect with the company:

- What do you admire about the company?
- Where do your values and interests overlap with those of the company?
- What makes this company a good fit for you?

Try to summarize your connection to the company in one sentence. Remember that your potential employer is also your audience, and adapt your tone, examples, and level of technicality accordingly.

Researching the Potential Job

To research the job itself, take advantage of the job description you have found. The job description is your secret weapon; in this document, you are told what the employer is looking for in a candidate.

Print out the job description and annotate it; get into a conversation with it:

- **Highlight or underline any qualifications that you hold** – any skills you have, technologies you've used, etc.
- **Make note of any past achievements that relate to any of the preferred qualifications.** For example, if the job description seeks a candidate who can diagnose and solve technical problems, write down an example of a specific time in which you did so in a professional or academic setting.
- **Circle any key terms you might use in your own materials**. Using the same terms as a potential employer demonstrates to that employer that you are able to "speak their language."
- **Note any questions/uncertainties and any qualifications you do not have** in order to decide what to highlight and what to downplay in your materials (as well as what you need to learn more about).

Try this

Make a word cloud of your job description, using a site like www.wordle.net (you will cut and paste the text of the job description into a word cloud generator – note that you might have to try a few different programs before you find one that's compatible with your computer.) A word cloud presents text as a visual display, reorganizing content so that the largest words are those that appear most frequently (see Figure 1). A word cloud can be a helpful visual tool to identify key terms to use in your resume and cover letter. You might also be surprised to find that a "big word" (a commonly repeated key term) is one that you would not automatically associate with the job.

In Figure 1, below, we see how some of the words are obvious terms we would expect to find in a children's museum job description – museum, children, exhibits, playing, etc. However, diversity" and "diverse" are both large terms, too. If you were applying for this job, you would now know to talk about your commitment to diversity/ experience working with people from diverse backgrounds.

Figure 1 Portland Children's Museum Experience Facilitator Job Description as a Word Cloud

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12.2 Resume Formats

The purpose of a résumé is twofold:

- A résumé is an overview of your skills, experience, and education as they relate to your career objective, and
- A résumé is a marketing tool that conveys your "personal brand."

All of us want our résumés to stand out from the stack. However, the best way to create an eye-catching résumé is not through gimmicks or flash, but rather through substance and customization.

Formats: Chronological Résumé vs. Functional (Skills) Résumé

Work histories come in a variety of forms; so do résumés. Although career experts enjoy debating which style is the best, ultimately you must consider which fits your current situation. Which style will allow you to best package your work history, and convey your unique qualifications?

The **chronological résumé** is a traditional format whose principal section is the "Employment Experience" section. In the chronological résumé's "Employment Experience" section, jobs are listed in reverse chronological order, and achievements/skills are detailed underneath each position.

In contrast, a **functional (skills) résumé**, features a well-developed "Skills & Achievements" section, in which skills are organized into categories. The functional resume still includes an "Employment Experience" section, but it is streamlined to include only the basic information about each position held.

A **hybrid (or combination) résumé** includes a well-developed "Skills & Achievements" section that highlights the candidate's most important and relevant skills, but it also includes select bullets under each job in the "Employment Experience" section.

The following pages contain examples of chronological, functional (skills), and hybrid résumé formats.

Example of the chronological résumé format

TINA SPARKLES

123 Address | City, State 01234

10.1234.5678 | me@gmail.com

E D U C A T I O N

AAS: Portland Community College 2010 | Sign Language Interpreting

BA: University of Colorado, Boulder 2007 | Psychology

Certifications: Certificate of Interpretation, Registry of Interpreters for the Deaf | Certificate of Transliteration, Registry of Interpreters for the Deaf

E X P E R I E N C E

Staff Sign Language Interpreter | St. Joseph's, Boulder CO | September 2014 – present

Provide Sign Language Interpreting to approximately 15 Deaf adults with pervasive mental illnesses in a Partial Hospitalization setting. Provide interpreting for staff meetings, therapeutic groups, psychiatry sessions, and medication monitoring.

Educational Sign Language Interpreter | Boulder High, Boulder CO | August 2011 – June 2014

Provided Sign Language Interpreting for Deaf and Hard of Hearing High School students in day-to-day activities including academic classes, assemblies, after-school clubs, varsity sports, class trips, and more.

Interpreter Intern | Portland Community College, Portland OR | January 2010 – June 2010

Provided Sign Language Interpreting services for one deaf college student for all of her day-to-day activities including academic classes, after-school clubs, advising sessions, and more.

Customer Service | Kaiser-Permanente Medical Center, Clackamas OR | 2008 – 2010

Provided members with information pertaining to benefits, enrollment, and coverage. Assisted members with benefits-related questions and concerns, resolving problems and supporting members with special needs.

ACTIVITIES

Volunteer | Denver Homeless Family Solutions | January 2016 – present

Prepare and serve meals, collect and sort donations, overnight host.

PROFESSIONAL MEMBERSHIPS

National Registry of Interpreters for the Deaf

National Association of the Deaf

Note that the chronological résumé:

- Lists both work and education in reverse chronological order (starting with the most recent positions/schools and working backward)
- Lists job achievements and skills under each position
- Presents experience under headings by job title, company, location, and dates of employment
- Allows employers to easily determine work performed at each company

Example of the functional (skills) résumé format

Anonymous
Personal Résumé

Downtown,

Portland, Oregon 97035

M 971.123.4567

anonymous@pcc.edu

www.linkedin.com/in/anonymous

Graphic Design major with about 10 years full-service agency experience, from creative marketing material design to print management and coordination with a wide range of clients. A passionate and dedicated designer, capable of handling a large workload and tight deadlines. Working toward B.A degree in Graphic Design.

EXPERIENCE

Print Management

Managed 5000 copies MTT company calendar printing process, from finalizing artwork to output file check, paper stock selection, color proofing, print finishing, and delivery deadline coordination.

Event Management

Designed and organized a company anniversary cocktail event for a new client – INSTINET Hong Kong, receiving positive feedback from client's guest and resulting in 3years event management contract with Pink Tiger Media.

Editorial Design with Collaborative

Designed and collaborated with Prince of Wales Island International School on production of 16pp program book, received positive feedback from every division of the school and resulted in more business to Priority Resources design team.

EDUCATION

Portland State University	B.A Degree Graphic Design – Expected enrollment 2018
Portland Community College	Associate Transfer Degree – 2016-present
Equator Academy of Art	Diploma in Graphic and Multimedia Design – 2004-2006
	EMPLOYMENT
Senior Graphic Designer 2013 – 2015	Priority Resources – Penang, Malaysia *Editorial design, Web interface design, vendor coordination*
Jr. Art Director 2012-2013	Pink Tiger Media – Penang, Malaysia *Team management, Event management, Marketing campaign, Visual communication, vendor coordination*
Graphic Designer 2006-2011	Moonlight Media & Design – Penang, Malaysia *Exhibition design, Branding & Identity design, Print design, Product branding, Typography, Event management*
Trainee Graphic Designer 2006	Dolphin Printing – Penang, Malaysia *Print production, Packaging, Customer service*
	ADDITIONAL
Honors	Awarded $3,000 tuition scholarships from Portland State University (2017-2018)
Languages	English, Bahasa Malay, Chinese: Mandarin, Cantonese, Hokkian, Hakka

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Note that the functional (skills) résumé:

- Focuses on skills and experience, rather than on chronological work history
- Groups functions or skills under categories
- Describes responsibilities, accomplishments, and quantifiable achievements under categories in the skills section
- Typically opens with a *brief* summary/profile detailing strengths (one-three sentences)
- Demonstrates how you match the requirements of your potential job by including *relevant* achievements and accomplishments

Example of the hybrid résumé format

Anthony Swift

1234 Happy Lane, Hillsboro, Oregon 97006 · anthony.swift@gmail.com · 971-555-1212

Summary

Electrical engineering major with experience in testing, *analyzing and developing digital systems. Strong written communication skills and experience working with diverse cultural backgrounds.*

Skills and Abilities

Technical Skills

- Designed and built a pulse and breathing monitor which required over 40 hours of troubleshooting. Involved circuit design and building, and circuit analysis. Required a good knowledge of reading electrical component schematics and basic programming with an Arduino.
- Proficient in Windows, Mac, Office Suite: Word, Excel, PowerPoint, Access.

Organization and Professional Development Skills

- Coordinated finals study sessions with staff of ten math instructors and more than 100 students in attendance.
- Organized and planned community clean-up events while delegating tasks to a team of 15 students.
- Planned S.T.E.M. (science, technology, engineering and mathematics) panel consisting of six professionals from various industries, providing students the opportunity to learn about

different career paths.

Instruction Skills

- Managed foreign teacher organization, communications, and hiring. Introduced innovative teaching methods to staff and created exciting classroom environments for Chinese students.
- Maintained communications between management and foreign staff using Mandarin Chinese while ensuring high teaching standards were maintained. Trained new foreign teachers as well as overseeing three education centers to verify quality of teaching.

Education

Bachelor of Science in Electrical Engineering, Oregon Tech, (2016 – 2019)
Associates of Science Degree, Portland Community College, GPA: 3.8 President's list – 7 quarters (2013-2016)
Chinese Language, Beijing Language University, Beijing, China (2009-2010)

Work Experience

Math Tutor, *Portland Community College*, Portland, Oregon (2014 – 2016)
Gave special instruction to students to help simplify difficult math concepts and walk students through critical thinking process to solve difficult problems. Instructed students working on advanced mathematics courses.

Math Club President, *Portland Community College*, Portland, Oregon (2014 – 2016)
Organized finals study sessions for the college with over 100 students attending each session. Facilitated events with panels of working professionals giving students access to vital information about pursuing specific majors. Hosted weekly study sessions to help struggling students successfully pass math exams.

Data Entry Specialist, *Seamless Systems*, Portland, Oregon (2013 – 2014)
Maintained national database of legal documentation with extensive use of Microsoft Access.

Head Foreign Teacher and Trainer, *KidsCan!*, Beijing, China (2010 – 2012)
Worked with Chinese investors and management to create a training curriculum for the Hubei Province region. Instructed foreign teachers and developed fun team-building activities that created strong bonds between the staff. Mediated between foreign and Chinese staff when language barriers were present.

Anthony Swift Resume is licensed under CC BY-NC 4.0.

There are many reasons to choose one format over another. In brief, the chronological résumé serves candidates with a long/

uninterrupted work history, in fields where the company worked for is of paramount importance. On the other hand, the functional résumé serves candidates who are transitioning between fields, candidates shifting from a military to a civilian career, or candidates who have gained skills in a variety of different settings (workplace, academic, volunteer). The hybrid resume offers the best of both worlds.

Because functional (skills) and hybrid résumé formats are the easiest to customize for a number of different potential employers, the following section of this chapter (Key Sections of a Résumé) will emphasize those formats.

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12.3 Resume Sections and Guidelines

Key Sections of a Résumé

Whatever format you choose, employers will expect to see certain key sections. There is some room for creativity in organization and phrasing, but make sure to be thorough. Each number in the list below corresponds to a section on the sample résumé that follows; as you read through the list, refer to the sample résumé to see how the section appears in context.

1. **Contact Info:** Create a header that includes your address, telephone number, professional e-mail address, and possibly a Linkedin page.
2. **Headline (Also called Summary, Profile or Highlights of Qualifications)**: include a brief summary of your professional self to grab your reader's attention. Think of this section as your "elevator pitch," offering a quick impression of your personal brand. Include a few key (relevant) achievements/strengths (in bullets or sentences). Summary/profile sections are especially useful for candidates with a long work history, or who have experienced job transitions. Here are two formulas for a one-sentence headline:
   – "Accomplished [job title]/Certified [industry] professional holding more than [x] years of experience, specializing in [x,y,z]."
   – "[Field of study] graduate seeking opportunity to focus on [x,y,z,] and promote [desired company's mission or goal]."Have you been starting your résumé

with an **Objective** statement? These days, most experts recommend leaving the objective off your résumé entirely. Objectives too often emphasize what you want from a job, rather than what you can offer an employer, and thus are generally seen as a waste of space.

3. **Skills/Achievements/Qualifications:**
   – Use sub-headers to group skills into skill set headings (management skills, customer service skills, laboratory skills, communication skills, etc.). Use targeted headings based on the qualifications your potential employer is seeking.
   – Include only the most relevant, targeted skills and achievements.
   – Emphasize quantifiable achievements and results: skills, equipment, money, documents, personnel, clients, etc.- Use the active voice (supervised sixteen employees, increased profits, built websites) vs. the passive voice (was responsible for supervising or duties included…)
   – See the "Building a Better Bullet" section below for more information on how to craft an effective "skill bullet."
4. **Employment Experience:**
   – List positions in reverse chronological order (most recent first).
   – Include basic information for each job: job title, employer, dates employed, city/state (and country if outside the U.S.) of employment.- Include internships and skilled volunteer positions (but if you do, title the section "Experience" rather than "Employment").
   – Consider filtering work experience into "Related Experience" and "Experience" instead of one employment section to highlight most relevant jobs (and downplay less significant experience).

5. **Education:**
   – Place your education section after the headline/summary section if it is recent and relevant, after the experience section if your stronger qualification is employment experience.- List the most current degree/school attended first, and proceed in reverse chronological order.
   – Include the following information for each educational item: the name of the school, the school's location, your graduation date or anticipated graduation date, the degree earned (and major if appropriate).- DO NOT include high school if you are in college unless your high school work was outstanding or unique (like a trade/technology/arts high school).
   – DO include trainings and certifications (e.g. first aid certifications, sales seminars, writing groups).
   – Develop this section by adding educational accomplishments:

      o Your GPA (if it is 3.0 or better, and if it is expected in your industry)
      o Relevant courses (if they prepared you for the job)
      o Special accomplishments (conferences, special papers/projects, clubs, offices held, service to the school)
      o Awards and scholarships (could also be separate section – Honors)
6. **Optional Sections (not included in Figure 5):**
   – Volunteer Work: List skilled volunteer work (building websites, teaching classes) under skills, along with your other qualifications, but include general volunteer work (making meals for a soup kitchen, etc.) toward the end of your resume in its own section or

under activities.
– Activities:

o DON'T include a section titled "Hobbies" or "Other," with irrelevant interests.
o DO include interests that may be relevant to the position, but aren't professional skills (sports for Nike, Eagle Scouting for leadership, golfing for business jobs, game design/play for game design jobs, blogging for PR jobs). Market yourself in the best light.
o DO include honors, awards, publications, conferences attended, languages spoken, etc. You may choose to include a separate honors section or fold these into your skills/achievements section.

7. **References:** Do not list references on your résumé. Instead, give a separate sheet at the employer's request. Generally, three references are sufficient. The most important references are your superiors, but you can also use co-workers, clients, or instructors. Contact each person to verify his/her willingness to act as a reference for you. Your reference sheet should match the look of your cover letter and your résumé.

	MIA SANTIAGO	
	123 Four Street · City 10110 · 123.456.7890 you@email.com · www.website.com	← 1
PROFILE	Business student with extensive retail experience and award-winning customer service skills. Successfully implemented social media presence and branding to improve sales. Strong written communication and graphic design background. Fluent in Spanish.	← 2
EDUCATION	**A.A.S.** Business (Will Graduate 2018) Portland Community CollegeAdditional Coursework in Graphic Design Great Sales Seminar, 2015, 2016 Customer Service Training, Macy's, 2015	← 3

SKILLS

Customer Service

- Received “Outstanding Customer Service” Award, 2016
- Assisted up to 100 customers daily in locating merchandise and making purchasing decisions
- Increased monthly sales approximately $1,000 by utilizing add-on sales techniques
- Supported customers by fielding and resolving key concerns
- Effectively handled irate customers and complaints in a friendly, patient manner

Merchandising/Marketing

- Assisted manager in analyzing sales and marketing trends for purchasing seasonal merchandise
- Launched and managed social media presence to increase sales
- Created innovative in-store displays and promotional materials
- Stocked, priced, and inventoried merchandise

Administrative

- Produced daily, weekly, and monthly sales reports
- Balanced cash drawer with consistently high level of accuracy

← **4**

EXPERIENCE	**Retail Associate**, *Macy's*, Portland, OR Dec 15 – present **Sales Representative**, *Target*, Portland, OR Sept 14 – Dec 15 **Server,** *Otis Café*, Lincoln City, OR Jan 12 – Sep 14	←**5**

Resume Guidelines

The following tips will help you write a résumé that adheres to the conventions employers expect while ditching fluff in favor of expertise.

Using "Me" and "I":

The convention in a résumé is to write in sentence fragments that begin with active verbs. Therefore, you can leave out the subjects of sentences. Example: "I eliminated the duplication of paperwork in my department by streamlining procedures" would become "Eliminated paperwork duplication in a struggling department by streamlining procedures."

Quantifiable Skills:

The more you can present your skills and achievements in detail, especially quantifiable detail, the more authoritative you will sound. This means including references to technologies and equipment you have used; types of documents you have produced; procedures you have followed; languages you speak; amounts of money you have handled; numbers of employees you have supervised or trained; numbers of students you have taught; technical languages you know; types of clients you have worked with (cultural backgrounds, ages, disability status – demographic information that might be relevant in your new workplace); graphic design, blogging or social media skills; and so on.

Filler Words (Fluff):

Avoid generic, filler words that can be found on many resumes and don't suggest meaningful skills. Filler words include: "team player," "results-oriented," "duties include," "fast-paced," and "self-motivated." If you MUST use these phrases, find concrete examples to back them up. For example, instead of using "team player," include a time you collaborated with peers to earn a good grade on a project, save your company money, or put on a successful work event.

Results:

In at least one place in your resume, preferably more, make mention of a positive impact (or result) of your skills/achievements. How did you create positive change for your employer, coworkers or customers? Did you resolve a customer complaint successfully? Did you make a change that saved your employer money? Did you build a website that increased traffic to your client? Did you follow procedures safely and reduce workplace injuries?

Building a Better Bullet (Two Skill Bullet Formulas):

Each skill bullet may need to go through a few revisions before it shines. Here are two formulas to help you strengthen your bullets:

Formula 1: Verb + Details = Results

Start your bullet with an action verb describing a skill or achievement. Follow it with the details of that skill or achievement, and then describe the positive impact of your achievement. For example:

- Developed (VERB) new paper flow procedure (DETAILS), resulting in reduced staff errors and customer wait times (RESULT)
- Provided (VERB) friendly customer-focused service (DETAILS) leading to customer satisfaction and loyalty (RESULT)
- Organized (VERB) fundraising event (DETAILS) generating $xxx dollars for nonprofit (RESULT)
- Provided (VERB) phone and in person support for patients with various chronic and acute health issues (DETAILS & RESULT COMBINED)
- Supported (VERB) 8-10 staff with calendaring, files and reception (DETAILS), increasing efficiency in workflow (RESULT)

Formula 2: Accomplished [X] as measured by [Y] by doing [Z]

Develop your bullets by going into detail about how you accomplished what you have accomplished and why it matters to your potential employer. Compare the following three versions of the same skill bullet:

- **First Draft:** Participated in a leadership program
- **Second Draft:** Selected as one of 125 for year-long professional development program for high-achieving business students
- **Final Draft:** Selected as one of 125 participants nationwide for year-long professional development program for high-achieving business students based on leadership potential and academic success

Note how the third version is not only the most specific, but it is the one that most demonstrates the "so what" factor, conveying how the applicant's skills will benefit the potential employer.

Key Terms:

Remember, use key terms you gathered in your pre-writing, preparation phase (from the job description, research into your field, and the "action verb" list presented earlier in this chapter). If your potential employer is using a résumé -scanning program, these key terms may make the difference between getting an interview or a rejection.

Length:

Résumé length is a much-debated question, and guidelines change as the genre changes with time. In general, the length of a résumé should be no longer than one or (at most) two pages (and each page should be full – no 1.5 page résumés). Some fields, however, may have different length conventions (academic resumes, for example, which include publications and conference attendance, tend to be longer). If your resume is on the longer side, your work history should justify the length. Some experts recommend one page per ten years of work history; while that may be extreme, it is better to cut weaker material than to add filler.

Design:

Résumé design should enhance the content, making it easy for the reader to quickly find the most significant and relevant information. See the chapters on Document Design for overall design tips.

A few general guidelines:

- Templates are handy, but bear in mind that if you use a common template, your résumé will look identical to a number of others.
- Use tables to align sections, then hide the borders to create a neat presentation.
- Use ten-twelve point font.
- Don't use too many design features – be strategic and consistent in your use of capitalization, bold, italics, and underline.
- To create visual groupings of information, always use more space between sections than within a section. This way your reader will be able to easily distinguish between the key sections of your résumé, and between the items in each section.
- Use the same font in your résumé and your cover letter to create coherence.

Field-Specific Conventions:

You may find that there are certain conventions in your field or industry that affect your choices in writing your résumé. Length, formality, design, delivery method, and key terms are just some of the factors that may vary across disciplines. Ask faculty or professional contacts in your field about employers' expectations, visit your school's career center, or conduct web research to make informed field-specific choices.

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12.4 Cover Letters

Background

In the era of social media, the idea of writing a cover letter to introduce your resume may seem outdated. However, the cover letter still serves a few critical functions. If the resume is characterized by breadth (giving a broad overview of your qualifications), the cover letter is characterized by depth (choosing a few most significant qualifications to cover in detail). Written in paragraphs rather than bullet points, the cover letter is the first writing sample your employer will see from you. In paragraphed prose, it is easier to market your unique qualifications and how you will fit in with the culture of the company. An effective cover letter will create a picture of you as a potential employee, and inspire a potential employer to learn more about you.

Keep the following tips in mind as you write your cover letter:

- Your cover letter is essentially an argument for why you should be granted an interview. Make sure to support the claim that you are qualified for the position with evidence. Demonstrate your authority by speaking in detail about your qualifications, and SHOW the reader that you have the skills and abilities necessary to do the job at hand. The more detail you offer and the more precise your language is, the more the reader will be able to picture you doing the job. See the sample cover letter below for examples of "showing."
- Use your audience analysis research to help you connect with the company and to choose the appropriate tone, level of formality, and level of technicality.
- Follow the format for professional letters found in the Professional Communications chapter.

Outline

A general outline for cover letters:

1. **Salutation:** Make your best attempt to find a specific name (or at least the job title) of the person to whom you should address this letter. If you cannot find the name, you may address the letter "Dear Hiring Manager."
2. **Opening Paragraph:** State why you are writing, specifically naming the position to which you are applying. Indicate how you learned about the position (networking if you can). In one sentence, use your audience analysis research to establish a connection with the company. Finally, in one sentence, summarize your strongest qualification/s for the job.
3. **Body Paragraph(s):** Build each paragraph around a key qualification or professional strength that relates to the job for which you are applying. Open the paragraph with a claim about this qualification/strength, and then provide a developed illustration of a time in your work or academic history when you used/excelled at this skill, or used it to benefit others. For example, if the job requires excellent customer service skills, you might discuss a time in which you used your customer service skills to diffuse a conflict or increase your company's profits. It can be effective to conclude your middle paragraphs with sentences that express how these past experiences prepare you for the potential job.
4. **Closing Paragraph:** Thank the reader for his or her time and consideration. Gesture towards an interview. You may explicitly request an interview, or you may wish to include a phrase like "I look forward to discussing my qualifications with you in person, soon." If there is any information the reader should know about getting in touch with you, include it; if your phone number and email address do not appear elsewhere in the cover letter, include them here. You may refer the reader

to your enclosed resume.

Sample Cover Letter

12248 SE Wilderness Dr.
Portland, OR 97214April 29, 2017Mr. Doug Jones
Director of Human Resources
EVZ
600 Minnow Lane
Seattle, WA 12345 Dear Mr. Jones:

At Portland State University's computer science job fair on April 9, 2017, I met with your representative, Ms. Karen Lincoln, regarding your entry-level Database Administrator opening. Not only am I a DBA and SQA certified CIS specialist, but I also have over a decade of experience in the steel and manufacturing industry EVZ specializes in. My strong manufacturing and technological background prepares me to help EVZ continue your impressive track record of safety improvements.

From my conversation with Ms. Lincoln and your online information, it's clear you are looking for someone who not only has technical skills, but who understands the steel industry. Within six months at United Steel Mill, I was promoted from Clerk to Machine Operator, largely as a result of my attention to detail and ability to collaborate. In three years, I had worked my way up to Plant Safety Coordinator, Quality Control Database Administrator, and Floor Trainer. While in those roles, I implemented a plant-wide safety program, saving my company roughly $15 million in recovered product, and reducing accidents by over 25%. In addition to demonstrating my understanding of the steel industry, this experience demonstrates the kinds of skills EVZ seeks: accuracy, integrity, and strong problem-solving skills.

I have a BA degree in Computer Information Systems and an AAS in Network Administration; through my experiences, I have become very familiar with all aspects of Database Administration. In my position as Database Intern for Work Inc., I enrolled users, maintained system security, and monitored user access to the database, with 30-40 concurrent users at any given time. At Portland State, I maintained a 4.0 GPA, was admitted to Phi Theta Kappa, and was placed on the President's List every term – a standard I will bring to EVZ.

Introduct
Your intro
following:

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applying

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– A conne
its goals

– How you
position

– How you
achieve its g

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– Specific
in résumé

– How you

Body Para
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– More de

– More de
your experie

– Specific
in résumé

– How you

EVZ has grown rapidly for twenty years, and I would like to speak with you to discuss how my experience can aid your commitment to improving safety, quality and processes as you continue to grow. Enclosed is my resume, and you can reach me at 503-555-6237 or johnice@email.com with questions. Thank you for your time and consideration. I look forward to meeting with you soon.

Closing P
This parag
– State yo
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manner, tha
– Provide
– Provide

Sincerely,

John Ice

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12.5 Next Steps

Submitting Your Materials

Once you are ready to send out your materials, remember the following guidelines:

- **Proofread carefully!** Do not rely on Spell-check alone. Proofread by reading your work backward one sentence at a time (using this strategy helps you focus on sentence-level writing rather than on content and "flow"). Ask a few friends to help you proofread before you send it out.
- Make sure your verb tense, font, and design choices stay consistent throughout.
- If you are submitting your documents as hard copies, use high-quality paper.
- If you are submitting your documents electronically, consider saving your documents as PDF files, so that the formatting is preserved (PDF files are also widely readable).
- If you are e-mailing your materials:
    - Send the materials as attachments to a brief, introductory e-mail.
    - Consider ALSO including the résumé in the body of the e-mail (in case the employer is wary of attachments).
    - Do not replace a job application letter with an e-mail. Job application letters are formal enough to warrant formal letter format.
    - Send a copy to yourself first to make sure it opens and is formatted properly.

Modular Materials

You may be thinking that it sounds like a lot of work to create a new set of employment materials for every job opening you have identified. While it is true that it takes time and effort to customize, you do not have to create a new resume and cover letter from scratch for every job opening. Instead, you can create "modular" materials with moving parts that you can simply adapt and reorganize for each job.

For example, let's say you are a nursing student, and you are looking to work in a related field while you are in school. You might be happy as an administrative assistant in a clinical setting, as a medical translator, or as a biology tutor. If you use the functional (skills) resume format, you might create 3 different "templates" of your résumé that each emphasizes and expands upon different skill categories, administrative, communication, and educational. Each of these résumés, however, would stress your medical background.

The same holds true with the cover letter. Once you have a draft cover letter, you can work with it as a template for numerous other jobs, keeping the overall format but revising some key sentences. It is quite likely that the final paragraph of your cover letters will never change. The central paragraphs, on the other hand, may undergo substantial revision, depending on how different one potential job is from another. Just make sure to always change the name of the potential employer; no matter what the skill level of the potential job, addressing a potential employer by the wrong name is the surest way to remove your application from consideration.

Résumés and cover letters are two documents in an "ecology" of documents related to the employment process: job descriptions, interview questions, the thank-you note you send after an interview, writing samples, and hiring materials are just a few other documents you might find yourself reading and writing as your hiring process moves forward.

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13. COMMUNICATING ACROSS CULTURES

The goal of this chapter is to consider the current cultural perspective where you have been writing and begin to think about readers and colleagues from another culture. This is a start of the conversation, to be sure; it is not meant to be an exhaustive examination of culture(s). Rather, the intent is to start where you are—with a product of technical communication you have created this term, for context, with your own current cultural understanding(s)—and to reconsider your own perspective and how it affects your technical writing process.

This chapter begins with understanding culture as a construct and then examines your own influences and contexts. Later in the chapter, the focus is looking at relationships between cultures and, at times, considering cultural revisions in context of your own writing.

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13.1 Understanding Culture

Let us begin with this working definition:

Culture consists of the shared beliefs, attitudes, behaviors, values, and assumptions shared by an identified group of people.

In technical writing context, an "identified group of people" could be as identified through prewriting work, as in Chapter 2.1 "Types of Audiences".

Try this

For deeper meaning, revisit the definition italicized above after you read each of the following five items. As you do, think about these in terms of classroom expectations. Then, think about these in terms of any workplace experiences you have. Are there any difference or similarities? How did you learn these conventions?

As you work through this chapter, remember these five things about culture:

1. **It is learned.** Geert Hofstede views culture as consisting of mental programs, calling it *softwares of the mind*, meaning each person "carries within him or herself patterns of thinking, feeling, and potential acting which were learned throughout their lifetime." Similarly, Peter Senge argues that mental models lock individuals and groups into a specific perception about the world. Like a computer, we are programed to act or behave in certain ways. The conscious and unconscious learning we undergo, over time, turns into beliefs that we

consider to be valid. We then teach each other that these beliefs are cultural norms, and they are then expressed in our daily lives as behaviors and actions.

2. **It is shared.** Although you may think of yourself as an individual, you share beliefs, rituals, ceremonies, traditions, and assumptions with people who grew up or live in similar cultural backgrounds. It is easier for you to relate to someone who has shared value systems and ways of doing things than someone who does not share the same values. The patterns of culture bind us together and enable us to get along with each other.
3. **It is dynamic.** Culture is dynamic and thus complex. Culture is fluid rather than static, which means that culture changes every day, in subtle and tangible ways. Because humans communicate and express their cultural systems in a variety of ways, it can be hard to pinpoint exactly what cultural dynamics are at play. It is important to pay attention to the cultural context of a communication to understand the depths of its dynamic properties.
4. **It is systemic.** In systems theory, systems are interrelated interconnected parts that create a whole. There are patterns of behavior, deeply rooted structural systems, which are beneath the waterline. What we see at the top of the iceberg are the behaviors; we do not see what contributes to those behaviors. To address the system, one must be able to address the underlining patterns. These patterns, because they are deeply embedded in the system, will take up significant effort, time, and resources. Changes to the system are slow and gradual; visible changes may not appear until months, or even years, later.
5. **It is symbolic.** Symbols are both verbal and nonverbal in form within cultural systems, and they have a unique way of linking human beings to each other. Humans create meaning between symbols and what they represent; as a result, different interpretations of a symbol can occur in different cultural

contexts.

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13.2 Understanding Cultural Context

Before you move forward in addressing other cultures, take a quick survey to see where you identify individually. Erin Meyer, in her book *The Culture Map: Breaking through the Invisible Boundaries of Global Business*, explores not just expectations and understandings informed by culture but also how different cultural context thresholds affect transcultural communication.

For starters, you might take Meyer's self-assessment questionnaire: What's Your Cultural Profile.

Try this

Take a moment to reflect on your results. Is there anything you learned that you did not know about your cultural profile? Is there anything you do not understand about the results? This is a good place to share via discussion with your colleagues about what you found and see if you have any obvious similarities with anyone in your class that you may not have known before.

Now that you have a partial idea of your cultural profile, take a moment to watch these two videos. First, in this YouTube video, Meyer discusses context: "Low Context vs High Context Societies." Next, view this video from Meyer's webpage that discusses "upgraders" and "downgraders" and their role in culture and disagreement: "Lost in Translation."

In technical writing, we often conduct a piece of communication for a given reader, but how often do you think about the primary reader's culture? What would you change the communication if the reader has a different cultural threshold? How much thought do you put into colors, layout, and language? Are there different instances where you need to build a relationship or be more direct, more visual?

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13.3 Deepening Cultural Understanding

In technical writing, it is further important to understand cultural communication because, like other cultural systems, organizational culture controls the behavior, values, assumptions, and beliefs of organizational members. It is a combination of organizational members' own beliefs and the values, beliefs, and assumptions of the organization. It is the role of the organizational leader, as a change agent, to help create a positive organizational culture that meets the demands of a competitive environment, board and shareholder expectations, and employee career satisfaction.

As a professional communicator in contemporary society, you need to be aware that the very concept of community is undergoing a fundamental transformation.

Try this

Think about two different times you have been part of two different communities concurrently (for example, even different classes in the same term). What were some of the differences in how communication functioned in the respective environments? What affected those differences? Subject? Instructor? Peers? Style of class?

Intercultural and international business communication has taken on a new role for students as well as career professionals.

Global business is more than trade between companies located in distinct countries; indeed, that concept is already outdated.

Intercultural and international business focuses less on the borders that separate people and more on the communication that brings them together. Business communication values clear, concise interaction that promotes efficiency and effectiveness. You may perceive your role as a communicator within a specific city, business, or organization, but you need to be aware that your role crosses cultures, languages, value and legal systems, and borders.

However, it is important to know we are still working with human constructs. From the building we erect that represents design values to the fences we install that delineate borders, our environment is a representation of culture, but it is not all that is culture.Culture involves beliefs, attitudes, values, and traditions that are shared by a group of people, as well as the psychological aspects of our expectations of the communication context.

Try this

Pick an assignment from this class that you think might fit for a cultural revision. This might be something you do as an individual or something you select from work a colleague has done.

1. Through research, discussion, or any other method, select a culture that you will want to amend this piece of communication for. In other words, change the culture of the primary reader of your communication.
2. Revisit Chapter 2 "Audience Analysis" from our *Technical Writing* book.
3. Conduct any other research that will allow you to learn more about the changes you might need to make to better allow your new primary reader to take action.

4. What would you change about that document to fit a primary reader from a different culture?

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13.4 Defining Intercultural Communication

In defining intercultural communication, there are eight components of communication to work with and yet the writer still must represent holistic meaning. It may be tempting to consider only the (1) source and (2) receiver within a transaction as a representation of intercultural communication, but doing so could mean missing the other six components—(3) message, (4) channel, (5) feedback, (6) context, (7) environment, and (8) interference—in every communicative act. Each component influences and is influenced by culture. Culture is represented in all eight components with every communication. In this context, all communication is intercultural.

It may be tempting to think of intercultural communication as interaction between two people from different countries. While two distinct national passports may be artifacts, or nonverbal representations of communication, what happens when two people from two different parts of the same country communicate? From high and low Germanic dialects, to the perspective of a Southerner versus a Northerner in the United States, to the rural versus urban dynamic, geographic, linguistic, educational, sociological, and psychological traits influence communication.It is not enough to say that someone from rural Southern Chile and the capital, Santiago, bothspeak *Castellano* (the Chilean word for the Spanish language), so that communication between them must be intracultural communication, or communication within the same culture. What is life like for the rural Southerner? For the city dweller? Were their educational experiences the same? Do they share the same vocabulary? Do they value the same things? To a city dweller, all the sheep look the same. To the rural Southerner, the sheep are distinct, with unique markings; they have value as a food source, a source of wool with which to create sweaters and socks that keep the cold winters at bay, and in their numbers they represent wealth. Even if both Chileans speak the same language, their socialization will influence how they communicate and what they value, and their vocabulary will reflect these differences.

Take this intranational comparison a step further. Within the same family, can there be intercultural communication? If all communication is intercultural, then the answer would be yes. Imagine a three-generation family living in one house. The grandparents may represent another time and different values from the grandchildren. The parents may have a different level of education and pursue different careers from the grandparents; the schooling the children are receiving may prepare them for yet another career. From music, to food preferences, to how work is done may vary across time; Elvis Presley may seem like ancient history to the children. The communication across generations represents intercultural communication, even if only to a limited degree.But suppose you have a group who are all similar in age and educational level. Do gender and the societal expectations of roles influence interaction? Of course. (Revisit the first **Try This** from "Deepening Cultural Understanding.") And so among these students not only do the boys and girls communicate in distinct ways but also not all boys and girls are the same. With a group of sisters, there may be common characteristics, but they will still have differences, and these differences contribute to intercultural communication. We are each shaped by our upbringing and it influences our worldview, what we value, and how we interact with each other. We create culture, and it creates us.

Try this

Revisit the revised audience analysis exercise from the previous **Try This**. For the target assignment and primary reader of a new cultural context, **If you were to have to resubmit this document in a different culture with a different context threshold, what would you do in the revision?**

Now, take it a step further: If you were a supervisor for this document, and the author / writer were of another culture, how would you make your revision suggestions? How would you communicate those decisions across a different context threshold?

Culture is part of the very fabric of our thought, and we cannot separate ourselves from it, even as we leave home, defining ourselves anew in work and achievements. Every business or organization has a culture, and within what may be considered a global culture, there are many subcultures or co-cultures. For example, consider the difference between the sales and accounting departments in a corporation. We can quickly see two distinct groups with their own symbols, vocabulary, and values. Within each group, there may also be smaller groups, and each member of each department comes from a distinct background that in itself influences behavior and interaction. Now, change that context of a piece of communication leaving your computer. Who will read it? Who could read it? What will your colleagues or readers of another culture take from it—intended or not?

Sometimes, the focus of technical communication is quite easy; the primary reader is clearly targeted through demographic research. But, think about how much more effective, more dynamic, a communication could be if the writer considered the potential cultural perspectives at work when the document is read.

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14. THINKING ABOUT WRITING

A lot of people find that they really learn how to be a writer the first time they have a job. They have a boss who is a stickler for proper grammar, they discover that their colleagues think they are too long winded in an email, or they discover that a report they wrote is barely understandable according to the conventions (the "rules") of the field in which they are working. In all these situations, the reason a writer finds that they are really learning how to write is that they are getting immediate real time feedback from a reader–and that is really what distinguishes a lot of the writing that is done in the professions compared to an academic setting.

Unfortunately, this learning process can be a slow one. Although the feedback is immediate, it means that there is not someone necessarily instructing you in how to write. Instead, you yourself must reflect on the reactions that you are getting each time you write and learn how to anticipate those reactions. In other words, you have to become your own teacher.

One of the things you can do to improve your ability to write in workplace settings is to change your mindset. Rather than focus on each individual piece of writing you might need to do, it is worth taking a step back to get a sense of the bigger picture–the context–in which the professional, technical, or workplace writing you need to do takes place. This chapter will teach you to approach learning to write in a new setting as a *writing researcher*, a term that refers to people whose job includes studying why and how people write (and, therefore, how people work and think). This includes technical writers, communications specialists, speech writers, linguists, and rhetoricians, as well as other social scientists.

Why focus on writing researchers? Because the work of these professions can and often is used in developing effective communication and is closely linked to the kind of work that *any* professional whose job includes writing must do in order to be successful (this includes just about everyone!). By approaching writing from their perspective, with their particular "tools of the trade," you will set yourself up to be a successful writer in any context or situation.

First, this chapter will review the important role of *curiosity* in conducting meaningful research. Then, it will define key concepts for research into writing: *genres*, *genre sets*, and *genre systems*. Finally, it will explain various methods that can be used in order to analyze writing in various professional fields.

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14.1 Getting Curious

Imagine you are an engineer tasked with building a bridge–or an architect tasked with designing a building. In either instance, your job will necessarily entail asking a series of questions designed to solve a problem:

- Who are the users?
- What is the purpose?
- What is the budget?
- What materials do I have available to work with?
- What regulations must I follow?
- Who do I have to work with on this project?
    - Who will offer feedback and/or collaborate with me?
    - Who are the decision makers?
    - Who is potentially impacted by the job I do?
- How much time do I have?

The answers to these questions help you to identify information that is crucial to making smart decisions. Most, if not all, the work that you engage in professionally will demand that you be willing to ask questions (a lot of them!) to do your job well.

You will also likely find–if you have not already done so in your current work–that good answers depend on good questions. *Learning*, whether in the classroom or in a professional setting, is most successful when we open ourselves up to being curious about a problem. It also is most successful when we approach situations as problems, or puzzles, to be solved, as opposed to situations that have a single best answer.

The same mindset that applies to a wide variety of professional work applies to the study of writing as well. The main difference is that for the person studying writing, how writing is composed and used is the puzzle or problem to be solved. In other words, a writing researcher is usually studying the *engineer* studying his/her problem and how they used writing as a part of that process. This is one step removed or an example of "metacognition," which is a term you may have heard. A very basic definition of metacognition is "thinking about thinking."

As a student, you practice metacognition any time you sit down to an assignment and, instead of just completing it, you reflect on what is being asked of you, why it is being asked of you, and how you should proceed in order to get the most out of completing the assignment. Taking the time to think about how a situation is both similar to and different from situations you have encountered before is likely to lead you to an awareness of your own learning and communication habits.

At this point, you might be asking yourself: What does this have to do with a technical writing course? When you write in a technical or professional writing course, you are often, essentially, being asked to *work* as a writing researcher. While in some instances you could be putting together a resume for future use on job applications, more often you are not completing assignments that correlate *directly* to some professional work you are doing. In other words, you are writing and examining texts in one context (the classroom) that are actually intended for use in another (the workplace).

It makes sense, then, to spend some time thinking about how you can apply what you learn in one to the other. After all, you all are likely already in or plan to pursue very different careers from one another, and one technical writing course cannot possibly cover every kind of writing you will need to know how to do. What a technical writing course can offer you, though, is a plan for learning all those kinds of writing more quickly, effectively, and efficiently. In the following sections, you will find an overview of different methodologies and principles that underlie the study of writing; such methodologies and principles can comprise a kind of "toolkit" that you can take with you to whatever profession you are pursuing–or that you are currently working in right now.

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14.2 Genre, Genre Sets, Genre Systems

Put simply, writing researchers study *genres*–what they are, and how they are used by people acting in, and interacting with, the world around them. In other words, genres are their main object of study. So what are they? In the following sections I provide some explanation of genres and the different ways that you might encounter them. In a subsequent section, I describe the tools and strategies that researchers use to analyze and understand genres.

Genres: Texts or Actions?

When you hear or read the word "genre," what comes to mind? For most of us, the word makes us think of kinds–or types–of music, books, or films. Typically we use this word to differentiate between country, rock, classical, or hip hop music; between science fiction, romance, biography, or self-help books; between comedies, dramas, action/adventure films, or documentaries. But when writing researchers use the term "genre," they mean something a little different.

For researchers, "genre" refers to a typical way of organizing, presenting, and using language in situations that recur–or repeat–over time. Still confused? Don't despair. Genre is a theoretical term for something that is actually pretty concrete, so let's consider some examples before returning to a working definition:

- A complaint letter
- An insurance claim

- A job description
- An annual review
- A legal brief
- A proposal
- A syllabus
- A receipt or a bill-of-sale
- A resume
- A lab report
- A medical record
- A letter of acceptance
- A personal statement
- A scholarship application
- A restaurant menu
- A to-do list

In every one of the examples above, you can pretty easily imagine who uses the text, where, when, and for what purposes. A job description is created by a company to advertise a particular position and/or to outline the responsibilities for the person applying/hired. It is either an official document (when used for an employee) or it is a tool used to hire somebody (both company/organization and potential candidates use the description to decide if a person is qualified).

In other words, genres are really texts-in-use, or texts that facilitate achieving some kind of purpose or goal for people. They are not just *descriptions*–they are *actions*. So while it is tempting to think of the forms you fill out at the doctor's office describing recent symptoms as just a simple text or a piece of writing, when we really study writing, we have to think about how that piece of writing facilitates the doctor-patient relationship.

Or, take your course syllabus as an example. This genre is used by teachers and students to facilitate communication about course expectations. Students are, then, the *primary* audience for the course syllabus. The syllabus is a way of bringing the course "to life," so to speak. But there are other audiences for the syllabus: other teachers of the course, the instructor's supervisor, administrators . . . the list goes on. This one document is actually responsible for a tremendous amount of work–and it is that work that writing researchers are interested in. The study of genres is at the core of the study of writing. Only by thinking about examples of writing as genres–as actions–rather than as simply documents or forms, can we develop an appropriate stance from which to learn how to *write* them.

Knowing who uses a text and why they use it helps us to figure out what the *content* of a piece of writing needs to be as well as how to *present* that content. Consider the job description again: It typically begins with an overview of the job as well as minimum qualifications. Why does it begin there? Why isn't this information at the end, or in the middle somewhere? The overview acts as a kind of advertisement; it is there to attract candidates to the position. But the minimum qualifications quickly help candidates to consider whether or not they should apply–which in turn saves the company extra work identifying people who do not qualify. In that sense, the minimum qualifications help both the job searcher and the company work more efficiently.

But, some of you might be thinking, sometimes the minimum qualifications *are* found later in the job description. That is true. Can you imagine a reason for that? . . . If so, then you are doing the work of a writing researcher. And, you have identified another important principle that applies to genres: they aren't *formulas*. In other words, there is not *one* exact way to write them. Instead, genres are governed by what are called "conventions" or guiding principles. We can speak *generally* about how to write any given genre, but there are always likely to be exceptions, which is why adopting a curious attitude about writing, instead of simply looking for the "right way" to write something, will serve you better as a writer (and a professional). It will also help alleviate frustration when what you thought was the "right way" to write something ends up requiring editing or modification.

Sidebar

Here is a relatively effective test for identifying a genre: ask yourself, Who uses this text? If you can answer with a particular profession, it is probably a genre. An easy, and maybe familiar, example is "the 5-paragraph essay," which many students learn at some point in their educational careers. If we ask who uses that text, we would have to answer students and teachers–but those are very broad categories, and what the text does is lead to a particular grade. It is not, however, an example of any kind of writing done outside the classroom setting. The text that most closely resembles the 5-paragraph essay but that has real rhetorical purpose is the scholarly research article. Who uses this text? Well, professors, scholars, or researchers write them in order to communicate the results of their research to other professors, scholars, and researchers, and there are all kinds of real-world consequences tied to the publication of those articles: tenure, funding, and professional status, to name a few.

Try this

Make a list of all the different kinds of writing that you do in a day. Then, for each, jot down a note or two about who uses that writing and why. Does every text on your list make the cut for defining a genre?

Workplace Writing

What about an email: is an email a genre? A text message? A tweet? Well . . . maybe. Here is where things can get tricky in the study of writing. An email might contain a job announcement, after all. Or you might use an email to communicate with your doctor about your ongoing symptoms. So while there are "rules" or conventions that apply to an email or a tweet (or a blog or a text message), it is important to realize that often these are simply platforms–or mediums–for communicating a particular genre.

Still, it is worth noting that some of these other platforms or mediums form a large portion of the kind of writing that happens for people in a wide variety of settings. Work simply would not get done without them. So it is helpful sometimes to recognize and differentiate between technical or professional writing (writing that is specific to an industry or job), on one hand, and "workplace writing," on the other hand. Generally speaking, we can refer to emails, notes, and some memos and informal reports as the kind of writing that facilitates the production of other more public or "polished" texts (for external audiences) than we have in mind when we write or say "technical writing."

Comparing Workplace Writing and Technical Writing

Workplace	Technical
Memos	Grant proposals
Progress reports	Use cases
Meeting presentations	Instruction manuals
Emails	Incident reports
Announcements	Technical reports
Letters	Schematics
Statements	White papers
Blogs	Policies & Procedures
Meeting minutes	User Guides

Genre Sets

Genres are at the heart of the study of writing, and another useful way for thinking about them and developing your ability as a writer is to identify which genres "go together." To put it another way, every profession or occupation requires someone to communicate in a number of different genres. The collection of those genres is referred to as a "genre set."

Why might knowing the genre set for a particular job or position be useful? Practically speaking, it is helpful when considering a job to know just what the writing requirements are. Once working in a certain position, taking time to understand the relationship between the different genres can help you to identify areas of overlap and thereby help you to be a more effective and efficient communicator. Furthermore, studying the genre set can help us to understand how the writing in that position upholds the goals of the company or organization—or undermines them.

Below are some examples of some different genre sets to get you thinking creatively about the amount and diversity of writing/communication work that is involved in any profession (even ones we do not typically think of as writing-intensive!).

Teacher/Instructor

- Syllabus
- Course Calendar
- Outcomes
- Lesson Plans
- Assignment Sheets
- Handouts
- Presentations
- Student Assessments/Progress Reports
- Lecture Notes
- Discussion Notes
- Recommendation Letters
- Grading/Feedback
- Reports
- Emails

Nurse

- Shift Report
- Patient Notes
- Charting & Documentation

- Orders
- Incident Reports
- Peer Review
- Emails
- Training/Continuing Education Exams
- Discharge Instructions

Engineer

- Analyses
- Project Descriptions
- Action Reviews
- Progress Reports
- Incident Reports
- Inspections Reports
- Proposals/Plans
- Memos
- Emails
- Recommendations
- Patents
- Meeting Notes
- Presentations

Try this

Find a friend or family member who works in a profession you are not that familiar with. Ask them to try and list all the different kinds of writing they do as part of their job. If they are stumped, you can prompt them with a couple examples, and remind them that any use of language–even if it is filling out a form–"counts" as writing.

Try this

Students are often surprised to find out that an occupation they thought did not require much writing is actually quite writing intensive. Is there an industry or job that you are interested in pursuing as a career? Spend 10-15 minutes on the internet searching for what kind of writing is involved for a professional in that field.

Genre Systems

As Chapter 2, "Audience Analysis," makes clear, the more you can think about writing-in-use (how your writing will be read), the better your writing will be. Imagining your audience is an important part of that process, and so is thinking about the other genres with which your writing will "work" or interact. For example, a job description (genre 1) often prompts a job applicant to put together a resume (genre 2) and cover letter (genre 3). The candidate will be contacted that they have been selected in some fashion–typically a letter (genre 4) and perhaps asked to provide further application materials, such as letters of recommendation or documentation of training/experience (genres 5, 6 . . .).

The term given to the intersecting genres that facilitate a particular kind of work is "genre system." Often this term is used to refer to the genres that work together to form the work of a particular organization–which often involves the intersection of genre *sets*. While you may never actually use the term "genre system," the *idea* of a genre system is something that all writers in workplace settings are aware of to some degree. For example, knowing that a report you create may prompt follow-up documentation can help you craft your writing in a way that helps the company or organization complete its work successfully.

The more you can anticipate all the different contexts and situations that might be impacted by the writing you do, the more quickly you will advance as a writing professional, because you will be able to think critically about the audience for your writing and connect your writing choices to your writing goals.

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14.3 Methods for Studying Genres

The previous section outlined some key terms and definitions for the study of writing. This section builds on that by providing an overview of research tools that can be used to better understand writing-in-context. Some of these tools–like an interview–may seem more familiar to you than others (such as genre analysis). At the same time, an activity you probably engage in every day–observation–achieves importance when done in the context of research and analysis.

There is no one right way to "do" writing research. Choosing the right tools depends on what it is you hope to learn. As you study a genre, whether it is a resume, a report, a procedural, or a complaint letter, think creatively about which of the following methods might help you learn more about it.

Genre/Textual Analysis

If genres are the key object of study for writing researchers, then genre *analysis* is the key tool for studying those objects–for unlocking their meaning. While it is true that we can learn a great deal about genres by observing people using them and even asking their users about them (which I detail in the next section), there is often important meaning that goes unnoticed by the producers and users of a genre. This meaning is what writing researchers try to access by studying the genres themselves. To put it another way, genres often have embedded in them a kind of code or shorthand that can reveal important information about the context in which they are used. As someone learning to write in that context, such information can help you to advance in your writing skills more quickly.

So how do writing researchers do this analysis? In short, genre analysis involves picking apart and noting the various features of a particular text in order to figure out what they *mean* (i.e., why they are significant) for the people who use that genre. In that sense, writing researchers act as detectives, revealing clues in order to then piece them all together and generate a cohesive story about what those clues mean.

It probably will not surprise you to know that, once again, curiosity plays an important role in conducting genre analysis. While it can be tempting when looking at a text to think there is not much to say about it (this is especially true when you take something as everyday as your grocery list or the menu at a coffee shop), when we begin to ask questions, the complexity of a text (and the genre it represents) is pretty quickly revealed.

Sidebar

A precursor to genre analysis is what researchers call "document collection." While it is true that the more samples of a genre you find the more reliable and extensive your analysis can and will be, analyzing even one text can reveal a great deal. So, if genre analysis sounds kind of overwhelming or challenging, start by looking at a single sample text rather than many.

The following questions can get you thinking about (and taking notes on) how you would *describe* a sample text, by focusing on its *content*, its *form*, and its *presentation*:

- Questions of Content

    - Who and what is referenced in the document?
    - What information is included in the document? How much?
    - What is the rhetorical purpose of the document?
- Questions of Form
    - How is information organized, from beginning to end? In other words, what appears where?
    - What kinds of sentences are used (questions, statements, commands, etc.)?
    - What do you notice about the kind of language that is used?
    - How would you describe the tone of the writing?
    - How does the text use rhetorical appeals (ethos, pathos, logos)?
- Questions of Presentation
    - Are section headings used in the document?
    - Does the document include text only, or text and images? What is the layout like?
    - What font size and style is used?
    - How would you describe the "look" of the document?

Figure 1 provides a sample police incident report and is followed by some notes you would be likely to make based on the suggested questions above. Alternate formats: Word version of incident report; PDF version of incident report.

1. Agency	2. Div/Precinct	New York State INCIDENT REPORT	3. ORI	5. Case No.	6. Incident No.
SUNY NP PD	SUB		NY0550400	12-0386	75240

7,8,9. Date Reported (Day, Date, Time)	10,11,12. Occurred On/From (Day, Date, Time)	13,14,15. Occurred To (Day, Date, Time)
WEDNESDAY 04/04/2012 13:25	WEDNESDAY 04/04/2012 13:10	WEDNESDAY 04/04/2012 13:15

16. Incident Type	17. Business Name
DISTURB.-NEIGHBORHOOD TROUBLE	SUNY NEW PALTZ

19. Incident Address (Street Name, Bldg. No., Apt. No.)
SUB BLDG 39
20. City/State/Zip
NEW PALTZ NEW YORK 12561-0000

21. Location Code (TSLED)	23. No. of Victims	24. No. of Suspects	26. Victim also Complainant?
NEW PALTZ VILLAGE 5622	0	0	No

Location Type
COLLEGE

ASSOCIATED PERSONS

25. TYPE	Name (Last, First, Middle, Title)	DOB	Street Name Bldg., Apt.No., City, State, Zip	Res Phone Bus Phone
PERSON REPORTING	, ASHLEY A			
PERSON INTERVIEWED	GRIFFIN, ROBERT			
PERSON INTERVIEWED	PEREZ-ROGERS, RALPH			

NARRATIVE

Date of Action	Date Written	Officer Name & Rank
04/04/2012	04/04/2012	KELSEY, JENELLE (PO)

Narrative

ON THE ABOVE DATE AND TIME, PO KELSEY RESPONDED TO THE STUDENT UNION BUILDING BASEMENT LEVEL NEAR RM62 FOR STUDENT DEMONSTRATORS. UPON ARRIVAL SPOKE TO F/S ASHLEY , WHO STATED THAT A WHITE MALE LEADING THE FOCUS GROUPS IN ROOM 62 FOR SODEXO RIPPED UP ONE OF THEIR SIGNS.

PO KELSEY SPOKE TO MR ROBERT GRIFFIN THE DISTRICT MARKETING MANAGER FOR SODEXO WHO STATED, THE FIRST GROUP IN HIS MORNING SESSION WAS DISRUPTIVE AND HAD THEIR OWN AGENDA. MR GRIFFIN ADMITTED TO BEING FRUSTRATED WITH THE DEMONSTRATORS POSTING PAPERS ON THE WINDOWS OF THE CLASSROOM AND DID RIP UP A SIGN. GRIFFIN REALIZED THAT HIS BEHAVIOR WAS NOT APPROPRIATE AND APOLOGIZED TO MS DRZYMALA AND THE OTHER STUDENTS. MR ROBERT GRIFFEN WAS ADVISED THAT THE UNIVERSITY DOES NOT CONDONE THAT TYPE BEHAVIOR AND WILL NOT TOLERATE IT FROM A VISITOR TO OUR CAMPUS.

RALPH PEREZ THE GENERAL MANAGER FOR SODEXO WAS IN THE AREA AND ADVISED OF THE INCIDENT. MR PEREZ TO HANDLE THE SITUATION THROUGH CORPORATE.

Figure 1: Incident Report. Image credit: "University Police report" by State University of New York University Police Department at New Paltz is in the Public Domain

Case Study, Part One: Notes on the Incident Report

- Content
  - When the incident occurred
  - Where the incident occurred
  - Who was involved

- How many were involved
- Who was interviewed
- What happened (narrative)
- Which precinct is responsible for investigating
- Type of incident, people involved (victims/suspects), and location
- Filing information (case and incident numbers)

- Form
    - Three distinct sections
    - Logistical info appears first, "associated persons" appears second, narrative of the event appears third
    - Narrative uses simple declarative statements, typically with *people* occupying the place of *subject*
    - Use of verbs is active but primarily neutral, with a focus on communication that transpired ("responded," "spoke," "admitted," "realized," "advised"), with two instances of the use of passive voice ("was advised")
    - Narrative is described with a neutral tone and feels formal
    - Focus of narrative is on *actions* taken that
    - Narrative is described in chronological order, beginning with officer responding to incident, moving through the incident, and providing information on follow-up

- Presentation
    - Items used for referential or filing reasons are *numbered*
    - Information is organized into boxes and tables
    - Each section is clearly labeled
    - Abbreviations are used throughout
    - Report is typed

After you have answered these questions, it is time to start looking for patterns and connections that will help you draw conclusions about what these features mean. Doing so involves a kind of creative thinking that is best done by someone who has been involved in studying or practicing the profession under investigation. Generally speaking, it is best to give some consideration to how the features of a particular genre might be connected to goals, objectives, and values of a particular position, organization, and/or context, since it is that context that produced the need for that genre in the first place.

Case Study, Part Two: Analysis of the Incident Report

The content, form, and presentation of the police incident report form work together to present a *verifiable*, *objective* account. Used internally, the design of the form helps to create uniformity by directing the officer to include the information that is likely to prove most salient for police purposes and for easy retrieval should future incidents occur. This streamlined approach to documentation keeps the focus on material and factual evidence, which clearly relates to the fact that this is a document that may be used in a legal context.

Generally speaking, a document that pays little attention to design, but has a great deal of detailed content, might derive from a situation where people place heavy emphasis on the development of ideas but don't necessarily need to *act* on those ideas; on the other hand, if a document makes heavy use of section headings in order to direct the reader more carefully, it might suggest a need for greater efficiency of time and/or a number of readers with different background knowledge. Of course, there are genres that will do both: include a great number of complex ideas, neatly organized into easily accessible sections. No matter what you find, there is an interpretation to be discovered and explained with evidence from the text itself. The connecting of evidence to interpretation/conclusion *is* genre analysis.

[Genre Analysis Essay video without captions; Genre Analysis Essay video with captions]

Interviews

Interviewing is something that happens informally all the time when we query colleagues or supervisors about how to write in a new genre. But a *formal* interview is a particular kind of research method that takes a bit of practice and can be quite difficult if you have never done it before. With a question we ask of a colleague, we usually have something very specific we want to know, but as a research method, interviews are usually used in order to answer a *research question*–and it is that distinction that you need to keep in mind.

A good research question, as you may have already learned in other college-level classes, does not have an easy answer. In fact, it usually does not have a *single* answer either; instead, it is a question that requires interpretation and that might be answered differently depending on who you ask. That said, it *is* answerable, meaning that given the right collection of evidence, you would be able to craft a response of some kind. In writing research, the interview is one way to collect just such evidence, since talking to someone about how, when, and why they use writing in their profession can provide all kinds of insight that you might miss if you were to analyze a text all by itself. Typically, these kinds of questions (of the "how," "when," and "why" variety) help writing researchers to understand the particular importance of writing to a specific profession, industry, organization, or even economy.

It is not uncommon for people in workplace settings not to realize just how much writing is a part of their everyday work practices. In the course of being asked questions, though, they often reveal the way that writing helps them accomplish their jobs successfully and make sure the company or organization runs effectively and achieves its goals. This is true whether you are interviewing a doctor, a firefighter, a restaurant manager, an electrician, a politician, a general contractor, or a computer specialist.

Here are some general advice and reminders for getting organized to conduct an interview:

- Practice good manners when scheduling the interview. This is an opportunity to practice being professional in your communication: everything you know about audience analysis should come into play as you request someone's time and input.
- Be sure to practice your interview questions ahead of time. Questions that seem straightforward to you might not be clear to someone else; alternatively, they might clearly call for a different kind of answer than what you anticipated. The best way to know is to practice them on someone who is *not* your intended interviewee. Then, revise accordingly.
- Request permission to record the interview. You will be glad to have a record to return to if your interviewee says yes. Whether or not you record the interview, though, be sure to take notes in the interview (this is something you can and should practice in your practice interview as well). Recording devices can fail; writing during the interview can also help you to focus on what your interviewee is saying and to think of new, sometimes clarifying questions, as the interview proceeds.

Observation

Another powerful research tool is simply observing *where* the writing of a particular profession takes place. The values of a company or organization, the expectations they hold for their employees and various working conditions are often on display if you only look for them. For example:

- Is the workplace open to the public, or does it require secure entry?

- Do people work in offices or cubicles? Or maybe there is no individual work space at all?
- How many meeting rooms are there? How big are they?
- Are people milling around, or are they mostly on computers?
- How is the workplace decorated?
- What is the dress code?

The answers to these questions can lead to new insight regarding how genres are used and produced and help develop new questions for you to consider. Furthermore, observation also helps with *imagining* texts in use, which is so crucial to an effective analysis of your audience.

Genre Ecology Maps

A Genre Ecology Map, or GEM, is a visual representation of genres in action, interacting with one another. Let's consider an earlier example: the job description. We could explain, using words, that the job description leads to job applications, which (often) lead to interviews and background checks, the hiring of an individual and all the associated paperwork, as well as training materials. But if we wanted to represent that visually, it would look something like Figure 2. Alternate formats: Word version of Job Application GEM; PDF version of Job Application GEM.

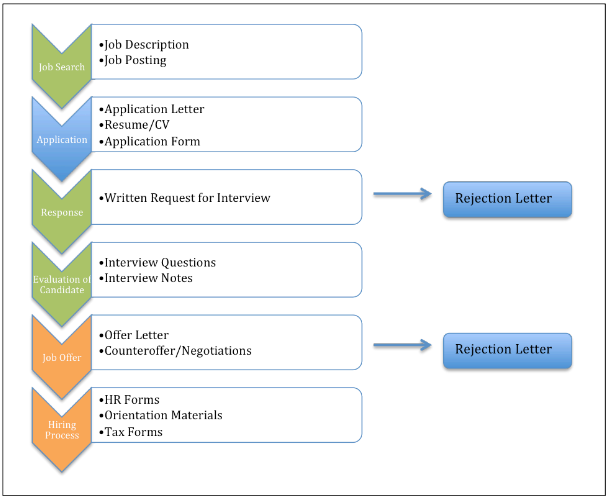

Figure 2: Job Application GEM

All of a sudden, with a visual illustration, we have a slightly different understanding of the complexity involved in the production and circulation of different kinds of writing. Figure 3 provides another example, one that captures the intersection of different writers, positions, and stakeholders (put another way: the intersection of different genre sets in the college classroom). Alternate formats: [Word version of Classroom GEM](); [PDF version of Classroom GEM]().

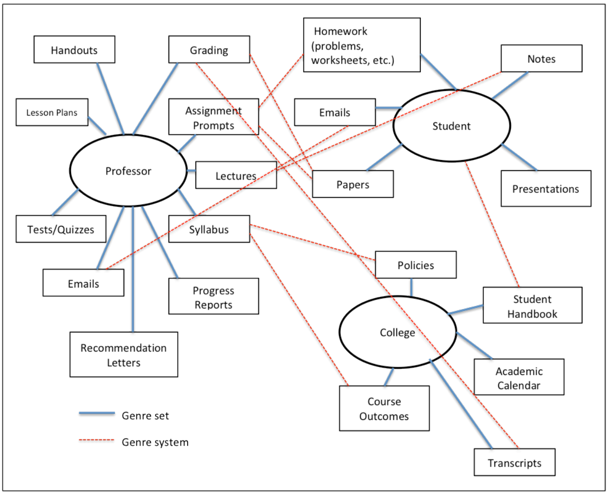

Figure 3: Classroom GEM

Particularly if you are a visual learner, maps like those above can help you to "see" genres in a way you might not otherwise and to reinforce what I have noted in sections above about how writing is not static but actually performs "actions" in various workplace settings.

CHAPTER ATTRIBUTION INFORMATION

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14.4 Conclusion

Whether you are in a class that takes a writing-about-writing approach and asks you explicitly to conduct research or one in which the instruction focuses on writing in specific genres, adopting the habits of a writing researcher will serve you well. For example, if you were asked to research a job that you would like to apply for and then put together a job portfolio, research on what kind of writing that position would require (beyond the information provided in the job description) could help you craft a stronger cover letter. Moreover, the habits of a writing researcher will continue to serve you as you produce writing in your future profession(s). Experienced medical professionals, for example, recognize that the charting they do impacts not only the health of their patients, but also how they are billed by insurance.

The success of all writing requires an awareness of one's audience and context. With a greater understanding of the methods and strategies that professional researchers use to explain how audience and context work around and through different forms of writing or *genres*, you can apply your knowledge *explicitly* in each new setting you encounter rather than assuming that what worked in one situation is likely to work in another. While it is true that many writing principles hold true no matter when and where you are writing, it is also true that the strongest writers know when and how to vary those principles to achieve their objectives.

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