CSCI 5100

Communicating Computer Science Ideas

Coursepack

F23 - W24

This collection of companion materials will support your understanding of the subjects we cover in CSCI 5100 during the 2023 - 2024 terms.

Selected pages are assigned before each lecture on a related topic. These will be itemized on the ***Course Day-By-Day*** page on *Brightspace*. Pages use a three-digit numbering system shown at the lower right of each page.

You will gain the most from each lecture by completing the assigned reading beforehand. There will be an opportunity for questions and answers during each class meeting.

Thanks to the Dalhousie Libraries for sourcing the selected items from the respective publishers. The list of references is at the end.

Andrew Cochran
August 2023

COMPANION MATERIALS FOR

First principles: Receivers, attention, noise

CHAPTER

15

Supercommunicator Basic Guidelines

LEAD WITH THE CONCLUSION

Think about the president of the United States reading through his early morning reports. His daily briefer from the CIA arrives and hands him a stack of reports intended to update him on political upheavals and other issues going on around the world. It would take him hours to read everything that's put before him from start to finish. He's likely to read the summary up front of one document, then continue onto the next. If he engages in an issue of particular importance in one document, he might decide to delve further. The president is getting the most essential information he needs, but is using his time effectively by not reading exhaustive tomes on topics that aren't especially important to him. This is why the first rule on the CIA's list tells you to “put your main idea up front.”

In the not-too-distant past, we were taught to lead people into a discussion with our introduction. We would continue to build on our concept in the body of the document and then conclude with our main idea. With the exception of academic work, this practice is quickly becoming ancient history. Today, we're not sure our information-soaked audience will stick around long enough to get to the conclusion.

This approach is a more effective way of making sure the people you need to reach get your message. They may not read your entire document from start to finish like they would have in the old days, but at least you will have succeeded in getting your most critical ideas across. If your subject is of importance to your reader, then he or she will continue. The body of the document is becoming increasingly used to support claims made in the front part of documents.

Fewer people may be reading the bulk of your document, but that doesn't mean you can take short cuts. If you don't have the goods to back up the claims you make in your introduction, savvy readers will likely see through the veneer. It's just as important today to write a comprehensive document with supporting information as it was in the past.

The Internet is ideally suited to give people essential information up front along with the opportunity to dig deeper if they choose. You can tell users your main ideas up front and include links to text where they can access more information. Most websites you visit offer

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you this option. You scan the page until you see something that strikes your interest, then click to get to the topic that is most relevant to you. But as a content developer, be careful with links. I've seen many eager-to-please types put too many links into their text. When this happens, users can get distracted—and even worse, leave your website.

Some communication pieces, like this book, aren't suited to “leading with a conclusion.” If I were writing a CIA report, a strategic plan for NASA, or any number of different types of documents for a client, I would do what I suggest above. But sometimes a communication opportunity doesn't lend itself so neatly to the “lead with your conclusion” approach. In these cases, I often choose the “lead with a story” plan. Storytelling warrants a chapter of its own. You can find that in Chapter 18.

USE BIG WORDS SPARINGLY

“He is a wonderful orator,” my friend Clarice says of her preacher. Every Sunday she looks forward to his sermon. “He's so capable of engaging his congregation on a variety of topics,” Clarice sings his praises. He's perfect, except for a tiny thing. Her highly educated preacher loves to use big words. One of his favorites is *theoria.* Greek for contemplation, *theoria* was picked up by Christians centuries ago to describe various forms of prayer and the process of coming to know God.[2] *Theoria* is a great word. It defines a specific idea succinctly; that's what good words do. The only problem is that most people in Clarice's parish, educated people but not theologians, don't know what it means. “When he first used the word, my first reaction was to think of a word that rhymed with theoria,” noted Clarice. “Every week it jars me and I lose track of what he's saying because I am thinking of that word instead of concentrating on the sermon.”

It's good to have a strong vocabulary. People with bigger vocabularies tend to do better professionally. But knowing when to toss around big words is a subjective call. Rusty Burke of the Johnson O'Connor Research Foundation says he is aware of the dictum that says you should stick to a sixth-grade vocabulary when writing for a broad audience. “Perhaps this is so,” he notes, “but I think it's more important that one knows more than a sixth grader. The broader your vocabulary, the easier it will be for you to find the right words to communicate clearly with your intended audiences.” So it is good to have a large and exact vocabulary, but that doesn't mean you have to throw every big word you know into your document or conversation.

Confused? The above sentence goes against what many of us have been taught. While research shows that people with strong vocabularies are more successful in business, we also know that people who use big words make lackluster communicators. This is another conundrum. You need good verbal scores on your SATs to get into a topflight university; then, once there, your professors will encourage you integrate these elaborate words into your essays. But continue to use your impressive vocabulary in the workplace and you'll be in for a rude surprise. Elaborate words are ineffective if your audience is thinking more about your vocabulary than what you have to say. As Clarice discovered, big words can disrupt a

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homily—and that holds true for business communications as well.

In most cases you should use shorter, simpler words—unless, of course, you have a stylistic reason for using a bigger word. Don't let your strong vocabulary turn you into an out-of-touch elitist. Most audiences, other than academic elites, find elaborate words off-putting. Make sure you don't use them to impress or show off. People want easy, not imposing.

In Praise of "Plain and Ordinary"

John L. Beckley explains the big word guideline nicely in his classic book The Power of Little Words: *"Whenever you want something to be extremely clear, or something sounds stuffy or stilted, replace the longer, less common word with shorter, simpler expressions. Look for plain, ordinary conversational words that give an immediate, sharp impression."*[3]

COMBAT JARGON ABUSE

When you use jargon, special words, or expressions specific professions or groups use, you're creating a barrier between yourself and your audience. Like membership in a private club, you may feel warm and fuzzy if included, but if you're the person unable to get past the security desk, you may feel purposefully left out. Jargon makes people feel excluded. Communicating the complicated is about inclusivity, not exclusivity. Building a moat around your topic—segregating your ideas only to people who understand your private language—is one of the worst things you can do.

In most cases, people use jargon because that's what's comfortable to them. They probably aren't trying to exclude you, Mr. or Ms. Nonspecialist. But regardless of their intent, that's exactly what they're doing. Jargon is the native language of specialists who live in a bubble. They are unaware that not everyone has incorporated a particular word or expression into their vocabulary, and often they're just saying what comes naturally to them without thinking about how it sounds to others. If a lawyer uses the word *emoluments* several times a day when speaking with peers, she may neglect to remember that nonlawyers may not comprehend that term. She would be better off saying "a person's earnings" instead of that off-putting technical term, which sounds like a chemical used in embalming.

Most cases of jargon abuse aren't intended to be malicious, but *Financial Times* writer Jonathan Guthrie believes some communicators, especially marketers, use jargon purposely to mislead. He describes jargon as "a shrewd device to manipulate competitors, customers and colleagues."[4] Guthrie points to a response to a would-be Virgin Trains traveler inquiring why the company website neglected to display a particular route price. Virgin's response: "Moving forward, we, as Virgin Trains, are looking to take ownership of the flow in question to apply our pricing structure, thus resulting in this journey search appearing in the new category-matrix format."[5] Virgin earned a "Golden Bull" award for its use of jargon for this

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response because it purposely prevented a customer from understanding what it was talking about.

As is the case with "big words," the solution to combat jargon abuse is awareness. Are you using too many industry-specific terms when you communicate to people outside your circle? Have you and your colleagues developed your own special language no one else can understand? Review work you have shared with nonspecialist colleagues with a critical eye. Think about how they see your funny vocabulary. Or better yet, ask them to go over one of your papers and have them point out terms that befuddle them.

The solution to jargon abuse: replace jargon with words that real people use. Invite the outsiders into your club so they can more easily understand your topic and why it is important. In many situations, you can simply replace jargon with more commonly used words and terms. If, however, the insider term used by specialists so accurately describes what you're writing about that you feel you must use it, be sure to explain it clearly to the nonspecialists first. Make them feel like they belong in the conversation.

ACRONYMS: DROWNING IN ALPHABET SOUP

I only survived my first three months at NASA thanks to a site called acronymfinder.com. Like any large bureaucracy, NASA cranks out new acronyms—words formed by the initial letters of other words—on a daily basis. If you work for a scientific or technical organization or a law firm, chances are you're confronted by an endless stream of acronyms used to make life easier for specialists so they can speak and write in shorthand. Think of acronyms as another form of jargon—they can make work more efficient for some, but create confusion for others. Acronyms often exclude nonspecialists from the discussion.

As NASA is both a technical and a scientific organization, the acronym learning curve is rather steep. I had to learn NASA-specific acronyms like SOC (Security Operations Center), SCaN (Space Communication & Navigation), LCROSS (Lunar CRater Observation Sensing Satellite), and EDLR (Entry, Descent and Landing Repository), and also had to figure out information technology industry terms like IMS (Incident Management System), CTAP (Cyber Threat Analysis Program), PaaS (Platform as a Service), FDCC (Federal Desktop Core Configuration), and CAG (Consensus Audit Guideline), to name just a few. Consequently, someone working in climatology at the Agency might not understand an information technology term unless it is properly explained. The climatologist is a specialist—but he's not an IT specialist.

Acronyms become even more confusing when the same set of letters is used to mean different things in another application. I think of an Automatic Teller Machine when I hear "ATM," whereas the Chilean CTO I mentioned in Part II assumes the speaker is talking about Asynchronous Transfer Mode.

Acronyms make specialized material more difficult for nonspecialists to comprehend because as they read or listen they are dedicating energy to understanding the acronym rather than focusing on the content. The official rule most style guides will tell you is to spell out the acronym on first use. You could write "OS (operating system)" then thereafter write only

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“OS.” I don't especially like this rule. I've written many documents with dozens of acronyms…and if the audience is not familiar with them, their workload has been greatly increased. You can't expect nonspecialists to learn ten or twenty vocabulary words up front and then expect them to be able to recall them as they are integrated into your content. Use your judgment when deciding when to use acronyms or when to spell it out. If your document looks like alphabet soup, chances are you need to hold back on the shorthand.

SHORTER SENTENCES, SHORTER PARAGRAPHS, SHORTER CHAPTERS

To enhance the readability of your document, you'd be best served by writing shorter sentences in shorter paragraphs in shorter chapters. Longer sentences and paragraphs may make you appear more educated and sophisticated, but like big words, they create unnecessary roadblocks for readers. Our Internet culture encourages this kind of brevity.

With that said—this brings us to one of those murky areas that mark the difference between rules and guidelines. If this book were written with only short sentences, you'd be bored. Too many short sentences can make content monotonous. Variation is key. Mix up your text by writing a couple of short sentences followed by a more elaborate one. Think about making your text look less dense, but don't sacrifice the quality of your writing.

It's more essential to follow this guideline with more technical documents. Consider an instruction manual or a white paper discussing a scientific discovery—you want those as simple as possible for your audience to access. The longer the sentences, paragraphs, and chapters, the more likely you are to lose them. I've taken some liberty in this book with those issues. I would think differently if I were writing for a corporate client. My belief is that you, my audience, are more likely to be in a relaxed frame of mind—like most people are when reading a book—than if you were perusing a technical document. But note—my sentences, paragraphs, and chapters are much shorter than they would have been if I wrote this book a decade or two ago.

DEVELOP CONTENT THAT SYNCS WITH YOUR AUDIENCE'S CULTURE

Your communication style may require adjustments if you're reaching out to a global audience. When I was working in Chile I struggled with writing business letters at first. Since my Spanish wasn't perfectly fluent, my marketing coordinator, a native Chilean, edited everything I wrote. Her biggest complaint wasn't about my less-than-stellar Spanish, but about my brash style of writing. In New York, I sent out correspondence in a pleasant but direct manner. No chit-chat.

In the United States, executives like to get to the point quickly. In Chile, however, my directness was viewed as rude, not efficient. I can still hear my coordinator saying to me: “Frankie, you must throw them flowers when you write!” I was told to offer the executives receiving my faxes words of respect, if not praise, to blend more effectively into the local

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culture. I quickly learned to add more pleasantries into my correspondence in an effort to be viewed as something other than a rude American.

But you don't need to travel several thousand miles to experience cultural differences. They can occur from one region of the country to the next. They can also be a factor when speaking to people whose worldview is vastly different from yours. You would, for example, probably strike a different style and tone if you were addressing members of the Tea Party one day and the far left faction of the Democratic Party the next day.

As our world becomes more connected, cultural differences are likely to dwindle. Entrepreneur Vinay Rai tells me it's only a matter of time before India, where content tends to be more formal, will fully embrace the increasingly informal digital communication style of the United States. The youth in India are taking on the mobile culture "*like how,*" he tells me via email. "It's all short content, readable only on smartphones. The older generations, like us" (thanks for the reminder of my age, Vinay), "still prefer long text. India is being divided in half but the next generation is winning hands down."

It looks like the days of "throwing flowers" are coming to a close.

MAKE IT ERROR FREE

This is basic communication 101. Errors turn people off. Even if you are a neuroscience genius, you can't expect your audience to appreciate your thoughts if they're presented with error-filled content. Errors can destroy your credibility, no matter how smart you are. Use your spell and grammar check programs, but look out for other problems your personal computer may not catch. Work with a colleague to help you clean up your act.

Multimedia Style Guidelines

The guidelines I provide in this chapter reflect many of the changes occurring in the way we use language in these digitally driven times. Concise, shorter, and more impactful…you get the point. Whether you are writing an old school white paper or producing a more contemporary e-document or web page for your audience, the guidelines don't vary much. People want to get to the information they need faster. Print or digital, we all want efficiency.

The nature of digital media, however, encourages content developers to be so brief it can seem like they are communicating in code. That's not good. Think of what Twitter and other social media platforms have done to our language in a span of a few years. Social media shorthand can be lethal if you're communicating to anyone who's just not hip to nuanced jargon. That's bad because this group often includes senior executives and investors who make decisions that make or break projects. Ironically, this brevity, which is very much in line with the millennial concept of communication, is also very off-putting to some and can further complicate already complex topics.

Be careful not to incorporate too much of a Twitter frame of mind in your next proposal or report. Great if you can use social media to lure the curious in, but beware that many of today's decision makers still like fully developed thoughts and complete sentences. They might be shorter sentences, but they are complete sentences.

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2.1 KEY CONCEPT: Reader-Centred Writing

Writing can be conceptualized as **writer-centred** or **reader-centred**. Things like diaries and journals are primarily writer-centred, in that they are written for the benefit of the writer. Your schoolwork may also have been somewhat writer-centred, in that often your goal was to "show what you know" and thereby "get a good grade." Technical communications require that you shift this mindset and write for the benefit of your reader—or design the content and structure of your communication for your "user." This mindset should be informed by an understanding of your audience. Use these guidelines and ask yourself the following questions:

- **Who is my target audience?** Are they internal or external readers? Upstream, downstream or lateral from you? Do I have multiple readers?
- **What is their perspectives on the topic, on me, and on the document I will write?** What are they expecting to do with the document? What is the document meant to accomplish? Why has it been requested? What is my role and relationship to my readers? What does the reader need to know? Already know? What does my reader NOT need to have explained?
- **What is my goal or purpose in writing to these readers?** What am I trying to communicate? What do I want them to do as a result of reading this document? How can I plan the content to meet my readers' needs?
- **What is my reader's goal?** Why does this audience want or need to read this document?

Getting a clear understanding of your audience is important in communicating effectively. It also enables you to imagine your audience as you write and revise. Keep asking yourself whether what you have said would be clear to your audience. How could you say it better?

EXERCISE 2.2 Audience analysis

Choose one of the topics below. Then perform an audience analysis, using the questions above to gain an understanding of the needs of different audiences. Write a profile of your intended reader(s) and consider what sort of information they will need and why?

1. You have been asked to write a report on **Maintaining Internet Privacy** for
   a) A new internet user who just signed up for internet service
   b) A start up e-commerce website developer
2. Prepare a document on **Food-born Diseases** for
   a) Restaurant workers (servers and kitchen staff)
   b) For a health inspector training course
3. Provide information on a proposed **New Bus Shelter Design** to
   a) Mayor's office

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b) Contractor
c) Newspaper reporter writing an article on the issue

Professional Tone

"Tone" refers to the attitude that a document conveys towards the topic and/or the reader. You have likely read something that sounded angry, or optimistic, or humorous, or cynical, or enthusiastic. These words characterize the tone. Technical communication tends to avoid displaying an obvious emotion, and instead strives for a neutral tone.

Tone is created through word choice (diction), word order (syntax), sentence construction, and viewpoint. Consider a piece of academic writing that you may have read. It creates a formal tone through its use of specialized terminology, sophisticated vocabulary, complex sentence structures, and third person voice. This style suits the genre because it is directed at experts and scholars in the field, and seeks to convey complex information densely and objectively, with an emphasis on reason, logic, and evidence.

Now consider a piece of business writing that you may have read. The tone may be sightly less formal but not colloquial. The language is direct and plain, and the sentences are shorter and more straightforward. It may make use of the second person ("you"). This style suits business writing because it is directed at colleagues, management, or clients who are seeking information clearly and quickly and who may need to take action on it.

Writing Constructively

Striking the appropriate tone involves understanding your purpose, context, and audience. It also involves an understanding that workplaces are often hierarchical, and that cooperation and teamwork are required. Therefore, it is important to consider how you want your reader to feel, and what may make your reader feel that way. Your goal is to write constructively, which means to use positive phrasing to convey your message to your reader. **Table 2.1.1** illustrates the differences between destructive/negative and constructive/positive feelings the reader may experience as a result of the tone used in a document.

TABLE 2.1.1 Differences between destructive/negative and constructive/positive

Negative	Constructive
misunderstood	understood
outraged	conciliatory
disgusted	pleased
guilty	capable
belittled	empowered
patronized	respected
defensive	proud
chastised	valued
humiliated	honoured
excluded	a sense of belonging
resentment	contentment

Considering how your reader may feel after reading your document is an important part of revision. Did your tone come across like you hoped it would? Could it be misconstrued? Often this is where peer reviewing can be helpful. Asking a colleague to review your document before sending it off to its intended audience is a common professional practice.

Sometimes, you will need to communicate information that is unpleasant, such as delivering bad news or rejecting a request. Communicating constructively is possible—and arguably even more important—in these situations. Regardless of message, how can you ensure you are communicating constructively?

- **Adopt an adult-to-adult approach:** that is to say, avoid talking down to your reader in a patronizing tone, and likewise avoid sounding petulant or unwilling to take responsibility. Aim to communicate respectfully, responsibly, confidently, and cooperatively — as one responsible adult to another.
- **Be courteous:** focus on the reader as much as possible. Use "you" unless it results in blaming (one effective use of passive verbs is to avoid assigning blame: "mistakes were made"). Use traditionally accepted forms of courtesy and politeness. Use gender-neutral phrasing and plural forms, unless you are referring to a specific person and you know their gender.
- **Focus on the positive:** emphasize what you *can* do rather than what you can't. Try to avoid negative wording and phrasing (no, not, never, none, isn't, can't, don't, *etc*.). Focus on what *can* be improved.
- **Be genuine:** apologize if you have made a mistake. Take responsibility and promise to do better. Be authentic in your expression. Avoid sounding like marketing material (ad-speak). Make reasonable claims that can be backed with evidence.

Consider the following perspectives:

Writer-Centred (I, we)	Reader-Centred (you)
If I can answer any questions, I'll be happy to do so.	If you have any questions, please ask.
We shipped the order this morning.	Your order was shipped this morning.
I'm happy to report that …	You'll be glad to know that …

Negative Phrasing	Constructive Phrasing
We cannot process your claim because the necessary forms have not been completed	Your claim can be processed as soon as we receive the necessary forms
We do not take phone calls after 3:00pm on Fridays	*You try* …
We closed your case because we never received the information requested in our letter of April …	

EXERCISE 2.3 Revise an email for appropriate tone

A colleague has asked you to review his email before sending. What revisions to content, tone, and style would you suggest?

From: Jake Burns
To: J. Parsons, Project Co-ordinator
Date: 12 December 2015
Subject: Two Problems

Hi Ms. P

Say, we may need to increase the budget on this project by $12,000. Sam screwed up when he calculated material costs. Now we don't have enough budgeted to add the additional G3 servers with the 36GB 15k hot pluggable hard drives. I know you don't know what all that means, but trust me. WE NEED THOSE SERVER UPGRADES!!!

Also, I would like to talk about getting my office moved closer to the rest of the IT department. All the running back and forth is disturbing other employees. I am so far away from everyone that I figure I must need to change deodorant or something. ;)

JB

EXERCISE 2.4 Revise for constructive tone

How do you think the following memo will make the recipients feel? How would you revise the following memo to more constructively address the problem?

From: Ann Onymous
To: All Employees
Date: Feb. 3, 2011
Subject: Littering

For some time now, smoking has been strictly prohibited within five metres of the Main Building entrance. Do NOT smoke anywhere near the doors!

Some of you still insist on smoking and have been doing so inside this area. As a result, the areas near the rear exit and around the picnic tables are constantly littered with smoking-related debris (filter tips, half-smoked cigarettes, empty lighters, etc.), creating an eyesore and making more work for my staff, who have to keep cleaning up this mess.

Starting Monday, sand buckets will be provided outside the read doors and in the picnic area. Use them!

For further reading, see "Communication in the Workplace: What Can NC State Students Expect?" a study based on the responses of over 1000 professionals from various fields, including engineering, on how important business, technical and scientific communication is to their work.

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COMPANION MATERIALS FOR

Becoming a team

Introduction

Much of the work done at Google, and in many organizations, is done collaboratively by teams. The team is the molecular unit where real production happens, where innovative ideas are conceived and tested, and where employees experience most of their work. But it's also where interpersonal issues, ill-suited skill sets, and unclear group goals can hinder productivity and cause friction.

Following the success of **Google's Project Oxygen research** where the People Analytics team studied **what makes a great manager**, Google researchers applied a similar method to discover the secrets of effective teams at Google. Code-named Project Aristotle - a tribute to Aristotle's quote, "the whole is greater than the sum of its parts", (as the Google researchers believed employees can do more working together than alone) - the goal was to answer the question: "What makes a team effective at Google?"

Read about the researchers behind the work in ***The New York Times: What Google Learned From Its Quest to Build the Perfect Team***

Define what makes a "team"

The first step in answering this question of "what makes an effective team?" is to ask "what is a team?" More than an existential thought exercise, actually figuring out the memberships, relationships, and responsibilities of individuals all working together is tough but critical to cracking team effectiveness.

The term team can take on a wide array of meanings. **Many definitions and frameworks exist**, depending on task interdependence, organizational status, and team tenure. At the most fundamental level, the researchers sought to distinguish a "work group" from a "team."

- **Work groups** are characterized by the least amount of interdependence. They are based on organizational or managerial hierarchy. Work groups may meet periodically to hear and share information.
- **Teams** are highly interdependent. They plan work, solve problems, make decisions, and review progress in service of a specific project. Team members need one another to get work done.

Organizational charts only tell part of the story, so the Google research team focused on groups with truly interdependent working relationships, as determined by the teams themselves. The teams studied in Project Aristotle ranged from three to fifty individuals (with a median of nine members).

Define "effectiveness"

Once they understood what constituted a team at Google, the researchers had to determine how to quantitatively measure effectiveness. They looked at lines of code written, bugs fixed, customer satisfaction, and more. But Google's leaders, who had initially pushed for objective effectiveness measures, realized that every suggested measure could be inherently flawed - more lines of code aren't necessarily a good thing and more bugs fixed means more bugs were initially created.

Instead, the team decided to use a combination of qualitative assessments and quantitative measures. For qualitative assessments, the researchers captured input from three different perspectives - executives, team leads, and team members. While they all were asked to rate teams on similar scales, when asked to explain their ratings, their answers showed that each was focused on different aspects when assessing team effectiveness.

Executives were most concerned with results (e.g., sales numbers or product launches), but team members said that team culture was the most important measure of effectiveness. Following the team leads concept of effectiveness spanned both the big picture and the individuals' concerns saying that ownership, vision, and goals were the most important measures.

So the researchers measured team effectiveness in four different ways:

1. Executive evaluation of the team
2. Team leader evaluation of the team
3. Team member evaluation of the team
4. Sales performance against quarterly quota

The qualitative evaluations helped capture a nuanced look at results and culture, but had inherent subjectivity. On the other hand, the quantitative metrics provided concrete team measures, but lacked situational considerations. These four measures in combination, however, allowed researchers to hone in on the comprehensive definition of team effectiveness.

Collect data and measure effectiveness

Using input from executives across the globe, the research team identified 180 teams to study (115 project teams in engineering and 65 pods in sales) which included a mix of high- and low-performing teams. The study tested how both team composition (e.g., personality traits, sales skills, demographics on the team) and team dynamics (e.g., what it was like to work with teammates) impact team effectiveness. Ideas were pulled from existing research as well as Google's own experience with what makes an effective team.

They conducted hundreds of **double-blind** interviews with leaders to get a sense of what they thought drove team effectiveness. The researchers then looked at existing survey data, including over 250 items from the annual employee engagement survey and g2wiki, **Google's longitudinal study on work and life**, to see what variables might be related to effectiveness. Here are some sample items used in the study that participants were asked to agree or disagree with:

- **Group dynamics** | I feel safe expressing divergent opinions to the team.
- **Skill sets** | I am good at navigating roadblocks and barriers.
- **Personality traits** | I see myself as someone who is a reliable worker (informed by **the Big Five personality assessment**).
- **Emotional intelligence** | I am not interested in other people's problems (informed by **the Toronto Empathy Questionnaire**).

Demographic variables like tenure, level, and location were also collected.

Identify dynamics of effective teams

With all of this data, the team ran statistical models to understand which of the many inputs collected actually impacted team effectiveness. Using over 35 different statistical models on hundreds of variables, they sought to identify factors that:

- impacted multiple outcome metrics, both qualitative and quantitative
- surfaced for different kinds of teams across the organization
- showed consistent, robust statistical significance

The researchers found that what really mattered was less about who is on the team, and more about how the team worked together. In order of importance:

- **Psychological safety**: **Psychological safety refers to an individual's perception of the consequences of taking an interpersonal risk** or a belief that a team is safe for risk taking in the face of being seen as ignorant, incompetent, negative, or disruptive. In a team with high psychological safety, teammates feel safe to take risks around their team members. They feel confident that no one on the team will embarrass or punish anyone else for admitting a mistake, asking a question, or offering a new idea.
- **Dependability**: On dependable teams, **members reliably complete quality work on time** (as the opposite - **shirking responsibilities**).
- **Structure and clarity**: **An individual's understanding of job expectations, the process for fulfilling these expectations**, and the consequences of one's performance are important for team effectiveness. Goals can be set at the individual or group level, and must be specific, challenging, and attainable. **Google often uses Objectives and Key Results (OKRs)** to help set and communicate short and long term goals.
- **Meaning**: Finding a sense of purpose in either the work itself or the output is important for team effectiveness. The meaning of work is personal and can vary: financial security, supporting family, helping the team succeed, or what individual goals each individual. For example:
- **Impact**: The results of one's work, **the subjective judgement that your work is making a difference, is important for teams**. Seeing that one's work is contributing to the organization's goals can help reveal impact.

1 **Psychological Safety**
Team members feel safe to take risks and be vulnerable in front of each other.

2 **Dependability**
Team members get things done on time and meet Google's high bar for excellence.

3 **Structure & Clarity**
Team members have clear roles, plans, and goals.

4 **Meaning**
Work is personally important to team members.

5 **Impact**
Team members think their work matters and creates change.

re:Work

The researchers also discovered which variables were *not* significantly connected with team effectiveness at Google:

- Colocation of teammates (sitting together in the same office)
- Consensus-driven decision making
- Extroversion of team members
- Individual performance of team members
- Workload size
- Geography
- Team size
- Tenure

It's important to note though that while these variables did not significantly impact team effectiveness measurements at Google, that doesn't mean they're not important elsewhere. For example, while team size didn't pop in the Google analysis, **there is a lot of research showing the importance of it**. Many researchers have identified smaller teams - containing less than 10 members - to be more beneficial for team success than larger teams (**Katzenbach & Smith, 1993**; **Moreland, Levine, & Wingert, 1996**). Smaller teams also experience better work-life quality (**Campion et al., 1993**), more work outcomes (**Aube et al., 2011**), less conflict, stronger communications more cohesion (**Moreland & Levine, 1992**; **Mathieu et al., 2008**), and more organizational citizenship behaviors (**Pearce and Herlob, 2004**).

Tool: Help teams determine their own needs

Beyond just communicating the study results, the Google research team wanted to empower Googlers to understand the dynamics of their own teams and offer tips for improving. So they created a survey for teams to take and discuss amongst themselves. Survey items focused on the five effectiveness pillars and questions included:

- Psychological safety - "If I make a mistake on our team, it is not held against me."
- Dependability - "When my teammates say they'll do something, they follow through with it."
- Structure and Clarity - "Our team has an effective decision-making process."
- Meaning - "The work I do for our team is meaningful to me."
- Impact - "I understand how our team's work contributes to the organization's goals."

After completing the survey, team leads received aggregated and anonymized scores to share with team members and inform a discussion. A People Operations facilitator would often lead the discussion, or the team lead would follow a discussion guide created by the People Operations team.

MAKE IT YOUR OWN: CUSTOMIZE THE TOOL BELOW

Team Effectiveness Discussion Guide

This discussion guide is focused on the five team dynamics Google found to be important for team effectiveness. The guide can help teams identify areas where they might want to improve and elicit ideas of how to do that.

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Tool: Foster psychological safety

Of the five key dynamics of effective teams that the researchers identified, psychological safety was by far the most important. The Google researchers found that individuals on teams with higher psychological safety are less likely to leave Google, they're more likely to harness the power of diverse ideas from their teammates, they bring in more revenue, and they're rated as effective twice as often by executives.

Organizational behavioral scientist **Amy Edmondson** of Harvard first **introduced the construct of "team psychological safety"** and defined it as "a shared belief held by members of a team that the team is safe for interpersonal risk-taking." Taking a risk around your team members may sound simple. But asking a basic question like "what's the goal of this project?" may make you sound like you're out of the loop. It might feel easier to continue without getting clarification in order to avoid being perceived as ignorant.

To measure a team's level of psychological safety, Edmondson asked team members how strongly they agreed or disagreed with these statements:

1. If you make a mistake on this team, it is often held against you.
2. Members of this team are able to bring up problems and tough issues.
3. People on this team sometimes reject others for being different.
4. It is safe to take a risk on this team.
5. It is difficult to ask other members of this team for help.
6. No one on this team would deliberately act in a way that undermines my efforts.
7. Working with members of this team, my unique skills and talents are valued and utilized.

In **her TEDx talk**, Edmondson offers three simple things individuals can do to foster team psychological safety:

1. Frame the work as a learning problem, not an execution problem.
2. Acknowledge your own fallibility.
3. Model curiosity and ask lots of questions.

In promoting the results of Google's research internally, the research team has been running workshops with teams. In the workshops anonymized scenarios have been used to illustrate behaviors that can support and harm psychological safety. The scenarios are role-played and then the group debriefs. Here's an example scenario:

> Psychological Safety Scenario | Ideas & Innovation
>
> UX is a long time manager known for his technical expertise. For the past two years he's worked as manager of team XYZ, which is responsible for running a large scale project. He upholds very high standards, but in the past few months UX has become increasingly intolerant of mistakes, ideas he considers to be "underpaw", and challengers to his way of thinking.
>
> Recently, UX publically "trounced" an idea offered by an experienced team member and spoke very negatively about that person to the wider team behind their back. Everyone else thought the idea was strong, well-researched, and worth exploring; ideas have since dried up.
>
> UX's ideas drove the recent project proposal, but it was ultimately rejected by the executives because it lacked creativity and innovation.
>
> Debriefing questions:
>
> - What behaviors do you see that reflect psychological safety?
> - What behaviors may signal that psychological safety is lacking in the scenario?
> - Why is psychological safety so important? What difference does it make in a team? What have you seen on your teams?

If you're a manager, consider these recommendations when **coaching** team members and teammates.

MAKE IT YOUR OWN: CUSTOMIZE THE TOOL BELOW

Manager Actions for Psychological Safety

This guide can help managers think about how they model and reinforce psychological safety on their teams. Based on research, this guide offers actionable tips for managers and team members to help create team environments where everyone can contribute.

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Help teams take action

The five key dynamics of effective teams that the Google researchers identified are rooted in the wider world of team performance research. Whether you're coding at Google, **rifling in a writers room**, **preparing for a trip to Mars**, or **skating in a hockey rink** - teams are essential to the work experience and output. At Google, now that the Project Aristotle team has identified what makes for an effective team at Google, they're conducting research to figure out how take the next steps to create, foster, and empower effective teams.

Whatever it is that makes for effective teams in your organization, and it may be different from what the Google researchers found, consider these steps to share your efforts:

1. **Establish a common vocabulary** - Define the team behaviors and norms you want to foster in your organization.
2. **Create a forum to discuss team dynamics** - Allow for teams to talk about subtle issues in safe, constructive ways. An HR Business Partner or trained facilitator may help.
3. **Commit leaders to reinforcing and improving** - Get leadership onboard to model and seek continuous improvement can help put into practice your vocabulary.

Here are some tips for managers and leaders to support the behaviors the Google researchers found important for effective teams. These are based on external research and Google's own experience:

Psychological safety:

- Solicit input and opinions from the group.
- Share information about personal and work style preferences, and encourage others to do the same.
- Watch **Amy Edmondson's TED Talk on psychological safety**.

Dependability:

- Clarify roles and responsibilities of team members.
- Develop concrete project plans to provide transparency into every individual's work.
- Talk about some of the **conscientiousness research**.

Structure & Clarity:

- Regularly communicate team goals and ensure team members understand the plan for achieving them.
- Ensure your team meetings have a clear agenda and designated leader.
- Consider adopting **Objectives & Key Results (OKRs)** to organize the teams work.

Meaning:

- Give team members positive feedback on something outstanding they are doing and offer to help them with something they struggle with.
- Publicly express your gratitude for someone who helped you out.
- **Read the KPMG case study on purpose.**

Impact:

- Co-create a clear vision that reinforces how each team member's work directly contributes to the team's and broader organizations goals.
- Reflect on the work you're doing and how it impacts users or clients and the organization.
- Adopt a user-centered evaluation method and focus on the user.

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Humans in Space

March 22, 2020

An Astronaut's Tips For Living in Space – Or Anywhere

Adapted from a Twitter Thread by astronaut Anne McClain

One thing astronauts have to be good at: living in confined spaces for long periods of time. Here are some tips for all who find yourself in a similar scenario.

Nearly 20 years successfully living on the International Space Station and more than 50 flying in space did not happen by accident. NASA astronauts and psychologists have examined what human behaviors create a healthy culture for living and working remotely in small groups. They narrowed it to five general skills and defined the associated behaviors for each skill. NASA astronauts call it "Expeditionary Behavior," and they are part of everything we do. When it goes well, it's called "good EB."

Here are the five good expeditionary behavior skills.

Skill 1, Communication

Definition: Communication means to talk so you are clearly understood. To listen, and question to understand. Actively listen, pick up on non-verbal cues. Identify, discuss, then work to resolve conflict.

To practice good Communication EB, share information and feelings freely. Talk about your intentions before taking action. Use proper terminology. Discuss when your or others' actions were not as expected. Take time to debrief after success or conflict. Listen, then restate messages to ensure they are understood. Admit when you are wrong.

Skill 2, Leadership/Followership

Definition: How well a team adapts to changed situations. A leader enhances the group's ability to execute its purpose through positive influence. A follower (aka a subordinate leader) actively contributes to the leader's direction. Establish an environment of trust.

To practice good Leadership/Followership EB, accept responsibility. Adjust your style to your environment. Assign tasks and set goals. Lead by example. Give direction, information, feedback, coaching and encouragement. Ensure your teammates have resources. Talk when something isn't right. Ask questions. Offer solutions, not just problems.

Skill 3, Self-Care

Definition: Self-Care means keeping track of how healthy you are on psychological and physical levels. It includes hygiene, managing your time and your stuff, getting sleep, and maintaining your mood. Through self-care, you demonstrate your ability to be proactive to stay healthy.

To practice good Self-Care EB, realistically assess your own strengths and weaknesses, and their influence on the group. Learn from mistakes. Identify personal tendencies and their influence on your success or failure. Be open about your weaknesses and feelings. Take action to mitigate your own stress or negativity (don't pass it on to the group). Be social. Seek feedback. Balance work, rest, and personal time. Be organized.

Skill 4, Team Care

Definition: Team Care is how healthy the group is on psychological, physical and logistical levels. Recognize that this can be influenced by stress, fatigue, sickness, supplies, resources, workload, etc. Nurture optimal team performance despite challenges.

To practice good Team Care EB, demonstrate patience and respect. Encourage others. Monitor your team for signs of stress or fatigue. Encourage participation in team activities. Develop positive relationships. Volunteer for the unpleasant tasks. Offer and accept help. Share credit; take the blame.

Skill 5, Group Living

Definition: Group Living skills are how people cooperate and become a team to achieve a goal. Identify and manage different opinions, cultures, perceptions, skills and personalities. Demonstrate resilience in the face of difficulty.

To practice good Group Living EB, cooperate rather than compete. Actively cultivate group culture (use each individual's culture to build the whole). Respect roles, responsibilities and workload. Take accountability; give praise freely. Then work to ensure a positive team attitude. Keep calm in conflict.

You can be successful in confinement if you are intentional about your actions and deliberate about caring for your team. When we work together, we will continue to be #EarthStrong.

Last Updated: April 9, 2020
Editor: Kelli Mars

Tags: Humans in Space, Moon to Mars

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Team Effectiveness Discussion Guide

Below is a sampling of improvement indicators and guiding questions:

Psychological Safety

Signs that your team needs to improve psychological safety:

- Fear of asking for or giving constructive feedback
- Hesitance around expressing divergent ideas and asking “silly” questions

Questions to ask yourself:

- Do all team members feel comfortable brainstorming in front of each other?
- Do all team members feel they can fail openly, or will they feel shunned?

Dependability

Signs that your team needs to improve dependability:

- Team has poor visibility into project priorities or progress
- Diffusion of responsibility and no clear owners for tasks or problems

Questions to ask yourself:

- When team members say they'll get something done, do they?
- Do team members proactively communicate with each other about delays and assume responsibility?

Structure and Clarity

Signs that your team needs to improve structure and clarity:

- Lack of clarity about who is responsible for what
- Unclear decision-making process, owners, or rationale

Questions to ask yourself:

- Do team members know what the team and project goals are and how to get there?
- Do team members feel like they have autonomy, ownership, and discrete projects?

Meaning

Signs that your team needs to improve meaning:

- Work assignments based solely on ability, expertise, workload; little consideration for individual development needs and interests
- Lack of regular recognition for achievements or milestones

Questions to ask yourself:

- Does the work give team members a sense of personal and professional fulfillment?
- Is work matched to team members based on both skills/ability and interest?

Impact

Signs that your team needs to improve impact:

- Framing work as “treading water”
- Too many goals, limiting ability to make meaningful progress

Questions to ask yourself:

- Do team members see their work as creating change for the better?
- Do team members feel their work matters for a higher-order goal?
- How are current team processes affecting well-being/burnout?

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COMPANION MATERIALS FOR

Overcoming presentation fear

CHAPTER 3
Presenting Confidently

WHAT DOES ANXIETY LOOK LIKE?

Your audience can't feel your physical reactions to anxiety, but they can observe the behaviors that result. From these behaviors, they infer your confidence. So, how does an audience know when a speaker is nervous? Common signs of nervousness when speaking include *disfluencies* (repeating of words, stuttering, using filler words, such as "uh," "you know," and "I mean"), lack of eye contact, fidgety arms and hands, shallow breathing, swaying and pacing, problems with speaking rate (either too fast or too slow), and plumbing reversal—what is usually wet gets dry (e.g., dry mouth) and what is dry gets wet (e.g., sweaty palms and brow). You can categorize these anxiety-produced behaviors as either agitated (involving a lot of movement, fast speech, and multiple disfluencies) or rigid (involving stilted, slow speech and lengthy pauses).

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Certainly, you do not engage in these behaviors on purpose. They arise from the increased *cognitive demand* that results from your speaking anxiety. You simply do not have the mental resources to cover the *leakage* of these anxiety cues. It's similar to what happens when a poker player with a potentially winning hand indicates nonverbally to the other players that she thinks she is going to win. In the case of presenting, the anxiety associated with speaking might lead you to reveal your nervousness.

How Do You Appear Less Nervous?

You can actively work on presenting in a confident manner. In acting, this technique is called "act as if." I affectionately call this approach "**fake it until you make it.**" What follows are suggestions to convey a confident nonverbal presence, regardless of if you really feel confident or not.

Eye Contact

Confident speakers connect with their audiences through sustained eye contact. Audiences see this direct, protracted eye contact as conveying higher status and comfort. Recent scientific evidence suggests that eye contact invokes an "approach motivation" that invites those connected via their eye contact to want to be with each other more. In the West, we have sayings like "look me in the eyes and tell me the truth" or "eyes are the windows to your soul." Moreover, you know that the lack of good eye contact or, worse yet, rapidly darting glances makes you appear nervous, deceptive, or both. Further, not looking at your audience members causes them to feel ostracized, which invites feelings

of resentment toward you. Of course, looking out at your audience members can be quite challenging...if for no other reason than you see them looking back at you. Because evolution has wired us to read a tremendous amount of social information from people's faces (e.g., Are you under threat? Are you making sense? Do people like you?), looking out at your audience can easily distract you and increase your cognitive load. This increased load is why even expert speakers often look up and away when gathering their next thoughts. So, you need to learn to fake good eye contact.

How do you fake eye contact? When 18 inches or farther away from your audience, try looking at that spot between people's eyebrows...you know the place, where if you don't shave or pluck you would end up with a "unibrow." Amazingly, your audience believes you are looking directly at them. Ultimately, you need to develop a degree of comfort looking directly at your audience members' eyes, but this "fake it" technique can help in the meantime.

Once comfortable looking at your audience, you need to spread your eye contact around so that you connect with all of them. However, you need not look at each member, especially if you are in front of a large audience. You are better served to create quadrants and look in those various directions. Moreover, try to avoid repetitive patterns when scanning the room. Finally, I am often asked how long you should look at any one audience member before moving on? I wish I could give an exact timing, but connection is more art than science. You get a feeling of connection and then you move on to someone else.

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Stance, Posture, and Movement

Confident speakers avoid distracting body movements. Swaying or leaning is actually self-soothing—much like when a little child sucks on a thumb, but these behaviors signal nervousness to our audience. To eliminate unneeded and distracting movement, face your feet forward directly under your shoulders, bend your knees slightly, and move one foot an inch ahead of the other. From this position, it is very hard to sway or lean.

In addition, nervous speakers retreat and make themselves smaller by stepping back or leaning while keeping their hands close to their body in front of their chest. Think of a boxer being pummeled by his opponent. He steps back, draws his hands in toward his body, and pulls his head down. This protected position

Figure 1: Stabilizing Presentation Stance

makes sense when threatened by a sweaty, fist-flinging attacker. However, this all-to-common body position is awful for a presenter. To counteract this natural tendency to retreat and protect, you need to stand upright and take one step toward your audience when you begin speaking. Approaching your audience makes you appear confident and embracing. Further, standing tall allows you to breathe fully and maximize your voice. In fact, research suggests that people who maximize the full extent of their bodies and the space around them are seen as more powerful and persuasive. Interestingly, the very act of taking up more space makes you feel more powerful. It turns out that your body releases more testosterone (a neurotransmitter that reduces anxiety) and less cortisol (a neurotransmitter that initiates the fear response) when you stand tall, lean in, and take up more space.

Beyond stepping forward when you commence your presentation, also move when you transition between main points. This movement adds variety to your audience's experience, while allowing you to connect with another part of your audience while not appearing too rigid. There are two tricks to this kind of transitional movement: First, be sure to start with the leg closest to the direction you are walking and be sure not to turn your back on the side of the room you are walking away from (i.e., avoid having your shoulders directly face the wall you are walking toward, rather face your shoulders at a 45-degree angle). Second, be sure to land your movement in the feet parallel stance mentioned above to help you avoid reverting back to a rocking or swaying position.

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Gestures

Poised and polished speakers stand balanced and connect with their audiences through extended gestures. When gesturing forward, reach out and away from your body—get your elbows out, off of your body. Avoid what a client of mine called the "T-Rex" position, in which your elbows are in tight next to your sides and your hands are making small gestures in front of your chest. Think of extending your arm like when you shake someone's hand. When gesturing to the sides, be sure to go beyond your shoulders. Again, expansive gestures take up more space and reduce the protective positioning nervous speakers hold. Remember, extension toward your audience or beyond your shoulders is seen as confident and embracing.

Figure 2: Extend Gestures Away from Your Body

If gesturing is difficult for you, start by practicing *descriptive gestures* when you present. That is, have your gestures mimic what you are describing with your words. For example, if you refer to your company's growth, you can represent this growth by moving your hand and arm up and to the right. Once you are more comfortable gesturing, you can consider *emphatic gestures*, which add emphasis to your points. However, you should not script emphatic gestures to correspond with specific words or phrases. Scripted emphatic gestures are distracting and make you appear less authentic. One helpful way to practice gesturing is to **audio record yourself delivering your presentation**, and then play the recording back while you stand and practice your gestures. Since you do not have to think about what to say, practicing in this manner allows you to focus on your gestures and other nonverbal behaviors.

Interestingly, research suggests that purposeful gesturing is a great way to reduce a speaker's *cognitive load*, which allows you to focus more on what you are saying. For example, during conversations, you likely gesture naturally. This gesturing lightens your mental effort and allows you to pay attention and learn from those with whom you are speaking.

Voice

When it comes to effective presenting, your voice reigns supreme. This truth is even more critical for those who present virtually via conference call or webinar. The reality is that your audience's attention can easily wander, and once it's gone, you will likely have a hard

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time getting it back. To counter these natural tendencies of your audience, you must employ variety in your voice.

You have likely been the victim of a monotonous speaker who drones on in a flat vocal style much like Ben Stein's character in the classic movie "Ferris Buller's Day Off." Adding variation in your volume and speaking rate serve to keep your audience's attention and motivate them to listen. Further, by speaking expressively, your passion for your topic comes through. However, for many presenters, this type of speaking is not natural. What follows are three tips for speaking in a more expressive and varied manner.

I often instruct less vocally varied speakers to infuse their presentations with emotive words, such as "excited," "valuable," "challenging," and to inflect their voice to reflect the meaning of these words. If you are speaking about a big opportunity, then speak "big" in a big way. At first, using emotive words in this manner can seem forced and overdramatic, but over time, you will feel more comfortable with this type of vocal variation. In addition, choose emotive words that are natural and comfortable for you to speak and be mindful that your emotive words are congruent with the tone you intend to convey. An added bonus to using emotive words is that your audience will likely be more interested in what you have to say and they will likely remember it longer.

Most speakers stick to a comfortable vocal range, which often limits their vocal variety. A very useful and fun way to expand your vocal range is to read young children's literature out loud. These stories and poems

are often written in a very expressive manner. By reading these aloud, you gain valuable practice expanding your vocal range. I like to say that this vocal workout is akin to going to the gym to get stronger: To gain increased muscle mass, you lift weights that are slightly heavier than you can comfortably lift. To increase your vocal variety, you must extend beyond your comfortable vocal range. Of course, I am not suggesting that your next pitch should sound like you're reading a Dr. Seuss book, but by reading a Dr. Seuss book or two out loud prior to your pitch, you will likely be more engaging to listen to.

Reading out loud has an additional benefit: Since most of us are not used to speaking for long periods of time, you also need to build vocal stamina and support your voice with proper breathing. The single best technique to improve your speaking endurance is to read out loud for 10–15 minutes at a time starting at least a week prior to your presentation. Not only will this reading aloud help you to develop an appropriate speaking stamina, it also helps you find a natural cadence and breathing rhythm.

The proliferation of apps for smartphones and tablets has included very useful tools for presenters. I have found a number of tools that visually display your vocal variation in real time. These apps are typically designed for singers who wish to monitor the frequency of the notes they sing. Whenever I deliver a webinar, I have an app running on my smartphone that I place next to my computer screen. Through brightly colored undulating bars displayed on my phone, I can see if my tone is flat lining and, thus, adjust it. Other tools show your

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vocal intensity via sine waves or colors. For large enterprises with many employees presenting via phone or web, tools exist that can provide real-time feedback and guidance on speakers' vocal variation as well as historic comparisons.

Fixing Vexing Verbal and Vocal Issues

Unfortunately, several verbal and vocal habits can undermine your confidence in the eyes of your audience. These include hedges, tag questions, disfluencies, and up-talking.

Hedges are a matter of word choice. Rather than declare something authoritatively, hedges soften your position. Phrases such as "I think," "sort of," or "kind of" litter many a presentation. In interpersonal communication, phrases such as these might help by allowing you to appear less dogmatic and open to collaboration. However, in public presentations, this hedging reduces your authority and can make you seem wishy-washy.

The best way to address hedging is via substitution. **Find words to replace less assertive and confident phrases.** For example, "I think" becomes "I believe" or "I know." "Kind of" and "sort of" can be replaced with "one way" (e.g., "This approach should sort of help" becomes "One way to help is…"). Finding more assertive substitutions affords you a way to make your point more clearly and definitively.

Tag questions occur when you add a question to the end of a phrase, such as "This is a good hamburger, isn't it?" Again, in interpersonal situations, tag questions invite participation from your fellow speaker, but when presenting before an audience, tag questions diminish

your potential impact. Tag questions should simply be eliminated. Removing them altogether will take practice for those in the habit of using them, but the benefit to you is a stronger, more assertive speaking style.

Disfluencies, sometimes referred to as "verbal graffiti" or "vocal tics," appear to be universal—academics have found that people in every culture have them and that they can make up to 20 percent of what is spoken in everyday conversation. What people say when they fill their pauses vary, though. North Americans tend to say "um" and "uh," while those from Asia are more likely to say "ah" and "oh."

Regardless of what you say or where you are in the world, you don't plan to use disfluencies when presenting. They are the unconscious byproducts of thinking while speaking, and they happen much more frequently if that thinking occurs when you are speaking in more formal presentation situations. While "um's" and "uh's" occur in casual conversation, they are far more frequent in public speaking. Unlike conversation, where we share the speaking duties with others, the pressure of having everyone listening to us seems to invite us to fill our thinking pauses.

However, not all disfluencies are experienced in the same way by your audience. "Um's" and "uh's" within sentences are not perceived as frequently, nor are they as bothersome as those that occur between thoughts. Your audience often skips over mid-sentence disfluencies because they are more focused on your content than your verbal delivery. Yet, as you move from one point to the other, disfluencies stand out because your audience is no longer "distracted" by what you are saying.

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In essence, you are violating your audience's expectation of a silent pause by filling the silence.

Verbal graffiti littering your presentations leads your audience at a minimum to perceive you as nervous. However, many disfluencies also lead to perceptions of deceit or being unprepared. Also, disfluencies can be very distracting for your audience. They begin to count your disfluencies, rather than focus on what counts—namely your content. So, you need to reduce disfluencies to be seen as a more confident, credible communicator and to help your audience focus on your message.

The following two techniques will assist you in eliminating disfluencies:

First, **gain conscious control over using disfluencies.** To do this, you need someone to notify you every time you say "um" or "uh" while presenting. This notification can come in the form of a raised hand, a clap, or in my case, a request for service bell like those found in hotels. By notifying you of your disfluencies immediately after you speak them, you begin to become consciously aware of saying them. Once aware, and over time, you can begin to reduce the frequency of your disfluencies because they are more under your control.

Try

Try this: When practicing a portion of your presentation, have a friend raise his or her hand to **notify you when you speak a disfluency.** Rather than stopping your speech, continue your presentation and just make a mental note that the disfluency occurred.

Second, while ending your sentences, especially your major points, do so on an exhalation. This type of breathing I term "landing" your sentences and phrases. Rather than inhaling close to the end of your sentences, focus on exhaling completely as you finish your thought (Note: this does not mean get quiet, but rather empty out your breath while maintaining your volume). By landing your sentences and phrases, you must necessarily start your next thought with an inhalation. It is impossible to say "um" while inhaling. A useful way to practice this is to read out loud while placing a hand on your belly. If you land your phrase, your belly will extend at the end of your sentence.

In addition to eliminating between-thought disfluencies, your inhalation brings a pause with it. This unfilled pause has the added benefit of giving your audience a break to process your ideas, while fulfilling their expectation that you will briefly stop speaking prior to moving on.

Finally, the midsentence inhalation that invites disfluencies is also responsible for up-talking. If you are an up-talker, then the ending of your sentences rises in pitch. Essentially, your declarative sentences end up resembling questions. Nothing can be more confusing (and annoying) to an audience as when a speaker makes an important point like "our profits are expanding," yet it sounds like "our profits are expanding?" Your goal as a speaker is to use vocal variation to help your audience understand your message, not to confuse them. Like managing disfluencies, up-talking can best be corrected if you focus on your breathing. If you are an up-talker,

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then you likely take a quick inhalation prior to the end of your sentences. Unlike the mid-sentence inhalations of disfluent speakers, up-talkers have a rise in pitch with their inhalations. Practice the same breathing techniques discussed previously for managing verbal graffiti.

Try

Try this: Practice exhaling completely at the end of your spoken sentences by reciting a list of sentences (e.g., walk through the steps of a recipe or your favorite things to do on a weekend). As you end each sentence, be sure to exhale completely. For example:

- I enjoy making peanut-butter sandwiches (exhale completely).
- First, I toast the bread (exhale completely).
- Next, I spread the peanut butter evenly on both sides of the toast (exhale completely).
- Finally, after combining the halves, I enjoy the sandwich with a cold drink (exhale completely).

As a speaker, you want your audience to be compelled by your message and not distracted by your vocal delivery. You want them to see you as confident, not nervous or deceitful.

A strong nonverbal presence will help you appear confident, and by covering up or faking your way through your nervousness, you allow for a counterintuitive psychological truism to take effect: Your actions can lead to your feelings. In other words, act in a competent

manner, and you will begin to feel competent and reduce your anxiety. Additionally, since your audience does not know you are faking behavior that makes you appear competent and confident, they treat you as if you are naturally confident and competent, which in turn fuels your feelings of competence and confidence. Try it! Fake it until you make it really work.

Try

Try this: Observe carefully the behaviors of competent and confident speakers. Note their use of eye contact and their stance, movement, voice, and gestures. Practice mimicking some of these actions and see how you feel. Over time, as you engage in competent speaking behaviors, you will begin to feel more confident and competent. A great source to watch authentic, confident speakers can be found at www.ted.com.

Key Take Aways

- If you present confidently—regardless of your actual anxiety level—your audience will see you as confident and they will treat you as if you are confident.
- Stand in a balanced manner with your feet firmly planted parallel under your feet. Keep your weight evenly spread over both legs.
- Nonspurious movement is beneficial. Move toward your audience when you commence a presentation and walk side-to-side as you transition between your points.
- Gesture forward and laterally toward your audience. Keep your elbows off your body and gesture beyond your shoulders.
- Make your eye contact purposeful to connect with your audience. If necessary, look at the spot between their eyebrows to fulfill the expectation of eye contact.
- Vary your voice and rate to keep your audience engaged.

Activity

Using a digital camera or smartphone, video record your full body while you give a brief presentation on a topic you know well. Later, review your presentation three times. First, only watch your presentation (no audio). Second, listen to your presentation (no video). Finally, both watch and listen.

Write a brief evaluation of what you notice after each review.

Video only:

_____

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Audio only:

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COMPANION MATERIALS FOR

Writing to strangers

Technical Sentences

In this chapter you will learn

- how to focus sentences on their real subjects and verbs
- how to rid your writing of meaningless words and expressions
- how to develop a confident, active, professional tone
- how to convey your meaning clearly and concisely.

Introduction

If we want our documents to be as direct, concise, and clear as possible, it stands to reason that our sentences—the basic building blocks of those documents—should be as well. Yet we frequently encounter examples like the following:

> Also reviewed was the root barrier installation on the upper roof decks, which was progressing during our inspection. It was observed that the root barrier was installed; however, correction of the irrigation scuppers and waterproofing of the anchor back plates were not carried out. (44 words)

If you were familiar with the terms and processes, you might not have a problem figuring out what was meant. Even so, you'd have to agree that the following revision is a dramatic improvement:

> The root barrier on the upper roof decks was being installed during our inspection; however, the irrigation scuppers had not yet been corrected, nor had the anchor back plates been waterproofed. (31 words)

This second version is far clearer and easier to understand. It is also about a third shorter, which is no coincidence.

While the first example is decipherable with modest effort, ask yourself whether a reader would rather struggle through a 44-page report written in this manner or breeze through a 31-page report written in the revised manner. Now consider that some of the documents you will produce in the workplace will run to hundreds of pages.

But take heart: the rest of this chapter provides a step-by-step strategy to make your writing clear, direct, simple, and effective. After writing your first draft (without stopping) and then completing your substantive editing, as described in Chapter 1, edit your sentences in the following sequence:

1. Find the real subject.
2. Find the real verb.
3. Edit for conciseness.
4. Edit for clarity.
5. Edit for inclusive language.
6. Check the grammar and mechanics.

Eventually, of course, these strategies will become automatic and your first drafts will require less and less revision.

Find the Real Subject

The word "subject" has two meanings in relation to a sentence. The first is grammatical. The subject of a sentence is the thing that makes the action, the verb, happen. But the subject of the sentence also refers to the *topic* of a sentence: what the sentence is about. As a guideline, but not an absolute rule, a sentence works best when the main grammatical subject also defines the topic of the sentence.

A sentence generally also works best if the subject appears at the start of the sentence, just as documents should begin with the summary, and paragraphs should begin with a topic sentence (Chapter 3). That way, readers know right at the start what the sentence is about, making it easier to interpret.

The following subsections describe techniques for finding the real subjects of sentences.

Be as Direct as Possible

The secret to writing effective sentences is to be direct and say what you mean. So, as you are editing your sentences, ask yourself, "What is this sentence really about? What is its real subject? What is really driving the action?" Begin with that.

The decision of the engineers was to double the chlorine concentration in the water treatment process.
The engineers decided to double the chlorine concentration in the water treatment process.

The drainage of runoff should be directed onto pervious ground.
Runoff should be directed onto pervious ground.

Whenever possible, make the subject a real person or something concrete, not an abstraction—that is, an engineer instead of a decision, or runoff (water) instead of drainage (a concept).

Avoid Meaningless Sentence Starts (Weak Expletives)

Weak expletives are expressions such as "there are" and "it is" that take the place of the main noun and the main verb at the beginning of the sentence. Unless the "it" refers to a specific antecedent, these expressions are completely meaningless.

There are eight hoisting points that need to be reinforced.
Eight hoisting points need to be reinforced.

It is not expected that we pay immediately.
We are not expected to pay immediately.
We don't need to pay immediately.

While it is not always wrong to use a weak expletive, try to avoid it. However, if the resulting sentence sounds worse, reinsert the weak expletive. Often, using a weak expletive is the best way to settle an is-there-or-isn't-there question.

No reason exists to keep him on staff. (Ugh! This sounds terrible.)
We have no reason to keep him on staff. (Correct, but the emphasis is weak.)
There is no reason to keep him on staff. (This is better.)

Use the Active Voice

In the active voice, the subject (agent) performs the action and precedes the verb:

The technologist carefully calibrated the instrument.
The tree shaded the room.
The puppy licked my face.

In the passive voice, the subject (agent) is not performing the main action in the sentence and, if it appears at all, follows the verb:

> The instrument was carefully calibrated by the technologist.
> The room was shaded by the tree.
> My face was licked by the puppy.

Technical people overuse the passive voice because they think it makes them sound more objective. But the voice in which an opinion or fact is expressed doesn't alter its validity or the writer's intent. What the passive voice will do, however, is make the writing faceless, frustrate the reader's desire to visualize an agent for an action, and force the writer into awkward, tangled sentence constructions.

> The investigation into the Johal noise complaint was conducted on May 15. Noise measurements were taken at 50 m intervals in a direct line from the wind turbine toward the Johal residence. This line was deviated from at the pond, at which point measurements had to be taken around the perimeter of the pond until the original line of travel was able to be resumed. (passive voice)

Here is the same report excerpt in the active voice:

> We investigated the Johal noise complaint on May 15, taking noise measurements at 50 m intervals in a line from the wind turbine toward the Johal residence. We had to deviate from this line at the pond, taking measurements around its perimeter until we were able to resume the original line of travel. (active voice)

Note how much more clear and concise the active voice is. It also makes the writer sound more competent, forthright, confident, and professional.

So, make the active voice your default, except when what you are writing about is, in fact, passive. For instance, if you are writing a description of a room, then as part of that description, you might write, "The room is shaded by the tree." The room is the subject of the sentence or paragraph, not the tree.

The other times you would use the passive voice are when you don't care who the agent is ("The building was erected in 1960"—in this sentence we're not at all concerned by whom), when you don't know who the agent is ("The report was sent to WikiLeaks anonymously"), or when you have something to hide and don't want readers to know who the agent is ("Mistakes were made . . . Papers were shredded . . . Relevant emails were deleted").

If you require more persuasion to use the active voice as your default, consider the following: if three of the four reasons for using the passive voice are that you don't know, don't care, or have something to hide, what sort of impression are you making on readers when you use the passive voice unnecessarily?

Address Readers Directly

One trick for writing actively is to address readers directly as "you." Writers often go out of their way to avoid writing "you" and end up with convoluted, passive sentence structures.

If a leak is detected . . .
If you detect a leak . . .

Do not open any fitting unless accompanied by qualified personnel and it has been ascertained that the component is not pressurized.
Do not open any fitting unless you are qualified to do so and are certain that the component is not pressurized.

Don't refer to "one"; use "you."

One must read all safety rules and instructions before beginning work.
Read all safety rules and instructions before you begin work.

The second of these two sentences is written in the imperative mood, described in more detail below.

Use the Imperative Mood

Often as a professional you'll find yourself giving advice or providing instruction. Don't be shy about using the command voice, called the imperative mood by grammarians, or the "you-understood" voice by laypersons. The imperative mood complements the active voice.

No tie-ins should be performed during summer months.
Do not perform tie-ins during the summer months. ("you" understood)

All efforts should be made to ensure that water is discharged onto landscaped or pervious areas.
Discharge water onto landscaped or pervious areas. ("you" understood)

If this seems too curt or peremptory, feel free to preface your request with a "please." This is a perfectly polite way to tell people what to do.

Please have that on my desk by 0800 tomorrow morning.

Find the Real Verb (Avoid Nominalizations)

Starting a sentence with the real subject does not guarantee that the sentence will continue with the real verb.

The programmers made a modification to the software after the technical writers had completed the documentation.

The programmers modified the software after the technical writers had completed the documentation.

The chemistry professor gave a demonstration of cold fusion.

The chemistry professor demonstrated cold fusion.

When you turn a good, strong, clear verb such as "modify" into a long, weak verb phrase like "made a modification to," you create a nominalization. The following table provides a short list of common nominalizations and their hidden verbs.

REPLACE	WITH
are in agreement with	agree
carry out an analysis	analyze
come to a conclusion	conclude
conduct an investigation/inspection/installation/review	investigate/inspect/install/review
give an indication of	indicate
give assistance to	assist
have a discussion about	discuss
make arrangements/decision	arrange/decide
perform a demonstration	demonstrate
place an order for	order
take into consideration	consider
take the measurement	measure
undertake a review	review

To check for nominalizations, look for broad, general-purpose verbs—such as "carry out," "perform," "conduct," "undertake," "give," or "make"—where specific actions are being described. Chances are you'll find a following noun that can be translated into the specific verb you need. On longer documents, consider using the "Find" function in your word-processing program to help you find all instances of these verbs.

Edit for Conciseness

To be clear and easy to understand, sentences should be short. They should express one main thought only, with perhaps a couple of supporting thoughts.

As a rough guideline, make your sentences no more than 20 words long, on average, and make your paragraphs no more than 7 lines long, again, on average. Don't be

afraid to use sentences that are much shorter, though if you use too many of them in a row, your paragraph will be choppy.

The following subsections describe techniques for creating concise, clear sentences.

Avoid Wordy Expressions

Replace long expressions with shorter ones if they express the same idea.

REPLACE	WITH
a decreased number of	fewer
a large number of	many
a long period of time	a long time
a majority of	most
adjacent to	near, next to
an increased number of	more
as well as	and, also
at a rapid rate	rapidly
at this point in time	at this point, now
by means of	by
causal factor	cause
comply with	follow
due to the fact that	due to, because
during the month of April	during April, in April
during the period of	during
for the purpose of	for, to
gain access to	access, get, obtain
has a tendency to	tends to, may
in a timely manner	on time, promptly
in addition to	besides
in close proximity	near, next to
in connection with	about
in excess of	more than
in lieu of	instead
in most cases	usually

REPLACE	WITH
in order to	to
in regards to	as for, about
in short supply	scarce
in the absence of	without
in the course of	during
in the event of	if
in the event that	if
in the near future	soon
involves the use of	uses
is capable of	can
it can be seen that	—delete altogether—
it has been noted that	—delete altogether—
it is recognized that	—delete altogether—
it is necessary that we	we must/we need to
not later than	by, before
on a daily/weekly/regular basis	daily/weekly/regularly
on a timely basis	on time
on numerous occasions	often
prior to	before
pursuant to	by, following, as per, under
with reference to	about
with regard to	about, as to
years of age	years old

Avoid Redundancies

Avoid careless or useless repetition of the same idea or meaning:

We used (already) existing technologies.

We won't proceed at (the) present (time).

We started (out) in the morning.

If the symptoms (still) persist, call me.

The transcripts are complete (and unabridged).

The chemist mixed (together) the reagents.

Watch out for these other common redundancies:

a crisis (situation)	(absolutely) essential	(actual) experience	(advanced) planning
(all time) record	(basic) essentials	blue (in colour)	(close) proximity
(complete) stop	(completely) destroy	(currently) available	(different) varieties
(each and) every	eliminate (completely)	(end) result	estimated at (about)
(exactly) identical	(falsely) misrepresent	(final) outcome	(flatly) deny
(future) outlook	glance (briefly)	(honest) opinion	(in-depth) study
(integral) part	introduced a (new)	(meaningful) dialogue	(mutual) co-operation
(near) proximity	never (before)	(new) innovation	none (at all)
(past) history	period (of time)	(personal) friend	(personal) opinion
(posted) sign	(pre-)planning	(private) industry	(rate of) speed
(self-)confessed	(separate) entities	severe (in nature)	small (in size)
start (out)	(terrible) tragedy	triangular (in shape)	(true) facts
(uniformly) consistent	(very) unique		

Edit for Clarity

Break Up Chains of Nouns

Sometimes writers string nouns into long chains to come up with a name for something. But if these chains become difficult to understand, break them up:

The deadline for the municipal groundwater level investigation completion report is Monday morning.

The deadline for the completion report on the investigation into the municipal groundwater table is Monday morning. (revised)

The completion report on the investigation into the municipal groundwater table is due on Monday morning. (best)

Even though the revised sentence turned out to be longer, it is clearer, and clarity is always the first priority in a professional document.

Use Simple Language

Big words won't impress readers, but they may puzzle readers. Always use the simplest word that will convey your meaning.

On the other hand, always use the word that most accurately expresses what you need to say, even if the word may not be generally known. If it is a technical term, you may want to define it. If it is a general word, let your readers look it up in a dictionary. Just don't force them to do so unnecessarily.

REPLACE	WITH
accomplish	do
acknowledge	admit, concede
additional	more, extra, added
administer	manage, run
advocate	support, call for
alternative	other, choice
amendment	change
approximately	about
ascertain	determine, learn, find out
attempt	try
beneficial	good for, useful
bona fide	real
characteristic	trait, feature
commence	start, begin
communicate	tell, inform, write
complimentary	free
comprise	consist of, be made up of
conspicuous	obvious
constitute	make up
criterion	test, rule, standard
deem	consider
development	change, growth
duplicate	copy, repeat
endeavour	try
endorsement	support, backing
envisage	foresee
exonerate	clear, acquit
expenditure	cost, expense
expiration	end

REPLACE	WITH
facilitate	make easier, encourage, promote
forward	send
fundamental	basic, real
illumination	light, insight
illustration	example, picture
inaccuracy	mistake, error
inadvertent	careless, accidental
incorrect	wrong
indispensable	vital, essential, crucial
initial	first
injunction	ban, order
latitude	scope, range
locality	place, site
methodology	method
minuscule	tiny
mitigate	ease, temper
modification	change
necessitate	need, call for
nominal	small, token
notification	warning, notice
numerous	many
objective	aim, end, goal
obligation	duty
observation	remark, comment
obtain	get, gain
participate	take part, join in
perception	view
permission	consent
pertaining to	about, of, on

continued

prerogative	right
presently	soon
prioritize	rank
probability	chance, likelihood
procure	get, buy, order, find
prohibit	ban
proliferation	spread
purchase	buy
rationale	reason, theory
recuperate	recover
reiterate	repeat
render	make, give
require	need, ask for
restrain	stop
retain	keep
saturate	soak
stringent	strict
substantiate	prove, back up
sufficient	enough
systematic	orderly, regular
technicality	detail, minor point
terminate	end
therein	there
thereof	of it, of that
transform	alter, change
transmit	send
transparent	clear, lucid
unfavourable	poor
unmistakable	clear, plain, evident
unpretentious	modest, humble
unveil	announce
utilize	use
vacillate	waver, falter, hesitate
validity	truth, proof
velocity	speed
verbatim	exact, exactly, word for word
vicinity	area, region
visualize	see, picture
withstand	bear, endure, resist

Avoid Jargon

The terms and expressions unique to a discipline or profession are called *jargon*. Within those disciplines, jargon serves as technical shorthand and is extremely useful. But when jargon is misapplied outside of its specific technical application, it is inexact and irritating.

I've made some improvements to the user interface. (appropriate use of jargon)
We need to interface about that. (annoying use of jargon)

REPLACE	WITH
access (as a verb)	find, get, buy, obtain, get to
address (as a verb)	discuss, study, consider, deal with
aggregate	total, whole
characterize	describe, specify
concurrence	agreement
continuum	scale, series

dialogue	discussion, talk
elect	choose
enhance	improve, increase
expedite	hasten, speed up
facilitate	help, allow, permit, start, carry out
feedback	response, reaction, results
functionality	feature
impact (as a verb)	affect, increase, reduce
implement	begin, set up, do, carry out, start
input	information, figures, opinion (or be specific about what the input is)
interface (as a noun)	connection, contact
interface (as a verb)	meet, work with, talk to
liaise	meet, work with, talk to, coordinate
network (as a verb)	meet, work with, talk to
optimal	best
optimize	improve, increase
optimum	best, most, greatest
parameters	factors, guidelines, variables, limitations
posture	opinion, position
pursuant to	according to, following
regarding	about, as for
requisite	necessary
scenario	situation, events
source (as a verb)	find, locate
synergy	joint efforts, common goals, compatibility
thrust (as a verb)	project, move, attempt
upgrade	improve, better
utilization	use
value added	value
value proposition	business proposition
viable	possible, feasible, workable, practical
vis-à-vis	about, of

Check for Inclusive Language

Use inclusive pronouns to refer to the subjects of your sentences, unless you can be sure of the subject's gender ("Please tell Mike that he must apply before the deadline"). But avoid those awful-sounding "he/she" and "him/her" constructions.

> When the taxpayer is filing his/her return by himself/herself, he/she should keep all of his/her receipts for seven years.

Instead, change the sentence to use a plural subject. This is good practice for all general or universal references.

> When taxpayers file their returns by themselves, they should keep all their documentation for seven years.

Or address readers directly using "you" and "your":

> When you file your tax return, keep your documentation for seven years.

Alternatively, edit the sentence so that pronouns become unnecessary. This is easiest when you can refer to the subject by a title or designation.

> After filing a tax return, the taxpayer should keep all receipts for seven years.

However, make sure you use non-gendered titles and designations: police officer, firefighter, letter carrier (not mailman), humankind (not mankind, or even "peoplekind"), business person, actor (for both sexes and all genders), supervisor (not foreman), flight attendant (not steward and stewardess), and so on.

You have one more option with the personal pronouns, but you should use it sparingly: if the sentence cannot easily be edited to use one of the strategies employed above, you can use a plural pronoun to refer to a singular subject.

> Ask your technical writing instructor whether they consider using plural pronouns for singular subjects an acceptable strategy in exceptional cases.

In the example above, this strategy is acceptable. You have only one technical writing instructor, but the writer does not know your instructor's gender. This use is also acceptable if the writer knows that the instructor prefers the pronoun "they."

Check the Grammar and Mechanics

The final editing step is proofreading for grammar and mechanics. If you are unsure about either, refer to the Grammar and Usage Handbook at the end of this book. When your instructor labels grammatical and mechanical errors in the margins of your assignment, use the handbook to correct those errors.

FIGURE 2.1 Badly written message. Obviously the writer meant that you can advertise your car for $20 in the newspaper. The phrasing suggests, however, that the sales price of the car is $20. Always make sure that what you've written can't possibly be misinterpreted, accidentally or even wilfully—by a lawyer, for instance.

Source: Courtesy of Andre Lanz

Editing Technical Sentences

When editing your sentences, check for the following:

Subjects and Verbs

- ☐ Are your subjects and verbs focused on what the sentence is actually about?
- ☐ Are your subjects as concrete as they can be and are your verbs as strong as possible?
- ☐ Are the weak expletives necessary to the sentence or just random thought starters?
- ☐ Is your voice active, unless required to be passive by the subject?

Wording

- ☐ Have you used the simplest words and shortest expressions that best convey your intended meaning?
- ☐ Have you ruthlessly eliminated redundancies, expressions of the obvious, and otherwise unnecessary words?
- ☐ Have you consistently used gender-neutral language except where you can be sure of the gender of your reader or subject?

Grammar and Mechanics

- ☐ Have you checked the Grammar and Usage Handbook whenever you're unsure of the punctuation, capitalization, or other fussy correctness of your sentences?

COMPANION MATERIALS FOR

Optimizing a job application

Harvard
Business
Review

Cover Letters

How to Write a Cover Letter

by Amy Gallo

February 04, 2014, Updated December 23, 2020

nicolas_/Getty Images

Summary. Perhaps the most challenging part of the job application process is writing an effective cover letter. And yes, you should send one. Even if only one in two cover letters gets read, that's still a 50% chance that including one could help you. Before you start... **more**

No one likes job hunting. Scouring through online job listings, spiffing up your résumé, prepping for grueling interviews — none of it is fun. For many, the most challenging part of the process is writing an effective cover letter. There's so much conflicting advice out there, it's hard to know where to start. Do you even need one, especially if you're applying through an online system?

What the Experts Say

The answer is almost always yes. Sure, there will be times when you're submitting an application online and you may not be able to include one, but whenever possible, send one, says Jodi Glickman, a communications expert and author of *Great on the Job*. "It's your best chance of getting the attention of the HR person or hiring manager and an important opportunity to distinguish yourself from everyone else." And in a tight job market, setting yourself apart is critical, says John Lees, a UK-based career strategist and author of *Knockout CV*. Still, as anyone who's ever written a cover letter knows, it's not easy to do well. Here are some tips to help.

Do your research first. Before you start writing, find out more about the company and the specific job you want. Of course, you should carefully read the job description, but also peruse the company's website, its executives' Twitter feeds, and employee profiles on LinkedIn. This research will help you customize your cover letter, since you shouldn't send a generic one. It'll also help you decide on the right tone. "Think about the culture of the organization you're applying to," advises Glickman. "If it's a creative agency, like a design shop, you might take more risks, but if it's a more conservative organization, like a bank, you may hold back."

If at all possible, reach out to the hiring manager or someone else you know at the company before writing your cover letter, advises Lees. You can send an email or a LinkedIn message "asking a smart question about the job." That way you can start your letter by referencing the interaction. You might say, "Thanks for the helpful conversation last week" or "I recently spoke to so-and-so at your company." Of course, it's not always possible to contact someone — or you may not get a response. That's OK. It's still worth a try.

Focus it on the future. While your résumé is meant to be a look back at your experience and where you've been, the cover letter should focus on the future and what you want to do, says Glickman. "It can be helpful to think of it as the bridge between the past and the future that explains what you hope to do next and why." Because of the pandemic there is less of an expectation that you'll be applying for a job that you've done before. "There are millions of people who are making career changes — voluntarily or involuntarily — and need to pivot and rethink how their skill set relates to a different role or industry," says Glickman. You can use your cover letter to explain the shift you're making, perhaps from hospitality to marketing, for example. Think of it as an opportunity to sell your transferrable skills.

Open strong. "People typically write themselves into the letter with 'I'm applying for X job that I saw in Y place.' That's a waste," says Lees. Instead, lead with a strong opening sentence. "Start with the punch line — why this job is exciting to you and what you bring to the table," says Glickman. For example, you might write, "I'm an environmental fundraising professional with more than 15 years of experience looking for an opportunity to apply my skills in new ways, and I'd love to bring my expertise and

enthusiasm to your growing development team." Then you can include a sentence or two about your background and your relevant experience, but don't rehash your résumé.

Read more about
How to Write a Resume That Stands Out

Chances are the hiring manager or recruiter is reading a stack of these, so you want to catch their attention. But don't try to be funny. "Humor can often fall flat or sound self-regarding," says Lees. Stay away from common platitudes, too. "Say something direct and dynamic, such as 'Let me draw your attention to two reasons why I'd be a great addition to your team.'"

If you have a personal connection with the company or someone who works there, also mention it in the first sentence or two. And always address your letter to someone directly. "With social media, it's often possible to find the name of a hiring manager," says Glickman.

Emphasize your personal value. Hiring managers are looking for people who can help them solve problems. Drawing on the research you did earlier, show that you know what the company does and some of the challenges it faces. These don't need to be specific but you might mention how the industry has been affected by the pandemic. For example, you might write, "A lot of health care companies are overwhelmed with the need to provide high-quality care while protecting the health and safety of their staff." Then talk about how your experience has equipped you to meet those needs; perhaps explain how you solved a similar problem in the past or share a relevant accomplishment. You want to provide evidence of the things that set you apart.

Lees points out that there are two skills that are relevant to almost any job right now: adaptability and the ability to learn quickly. If you have brief examples that demonstrate these skills, include those. For example, if you supported your team in the shift to remote work, describe how you did that and what capabilities you drew on.

Convey enthusiasm. “When you don’t get hired, it’s usually not because of a lack of skills,” says Glickman. “It’s because people didn’t believe your story, that you wanted the job, or that you knew what you were getting into.” Hiring managers are going to go with the candidate who has made it seem like this is their dream job. So make it clear why you want the position. “Enthusiasm conveys personality,” Lees adds. He suggests writing something like “I’d love to work for your company. Who wouldn’t? You’re the industry leader, setting standards that others only follow.” Don’t bother applying if you’re not excited about some aspect of the company or role.

Watch the tone. At the same time, don't go overboard with the flattery or say anything you don't mean. Authenticity is crucial. "Even if you've been out of work for months, and would take any job at this point, you want to avoid sounding desperate," says Lees. You don't want your tone to undermine your message, so be professional and mature. A good rule of thumb is to put yourself in the shoes of the hiring manager and think about "the kind of language that the hiring manager would use with one of the company's customers." Of course, it can be hard to discern your own tone in writing, so you may need to ask someone to review a draft (which is always a good idea anyway — see advice below). Lees says that he often cuts outs "anything that sounds like desperation" when he's reviewing letters for clients.

Keep it short. Much of the advice out there says to keep it under a page. But both Glickman and Lees say even shorter is better. "Most cover letters I see are too long," says Lees. "It should be brief enough that someone can read it at a glance." You do have to cover a lot of ground — but you should do it succinctly. This is where asking a friend, former colleague, or mentor to review your letter can be helpful. Ask them to read through it and point out places where you can cut.

Get feedback. In fact, it's a great idea to share your cover letter with a few people, says Lees. Rather than sending it off and asking, "What do you think?" be specific about the kind of feedback you want. In particular, request two things. First, ask your friend if it's clear what your main point is. What's the story you're telling? Are they able to summarize it? Second, ask them what's wrong with the letter. "Other people are more attuned to desperation, overselling, over-modesty, and underselling," says Lees, and they should be able to point out places where the tone is off.

When you can't submit a cover letter. Many companies now use online application systems that don't allow for a cover letter. You may be able to figure out how to include one in the same document as your résumé, but that's not a guarantee, especially because some systems only allow for data to be entered into specific boxes. In these cases, use the format you're given to demonstrate your ability to do the job and your enthusiasm for the role. If possible, you may try to find someone to whom you can send a brief follow-up email highlighting a few key points about your application.

Principles to Remember

Do:

- Have a strong opening statement that makes clear why you want the job and what you bring to the table.
- Be succinct — a hiring manager should be able to read your letter at a glance.
- Share an accomplishment that shows you can address the challenges the employer is facing.

Don't:

- Try to be funny — too often it falls flat.
- Send a generic cover letter — customize each one for the specific job.
- Go overboard with flattery — be professional and mature.

Advice in Practice

Case Study #1: Demonstrate an understanding of what the company needs. Michele Sommers, the vice president of HR for the Boys & Girls Village, a nonprofit in Connecticut, recently posted a job for a recruiting and training specialist. "I was looking

for someone with a strong recruiting background who could do everything from sourcing candidates to onboarding new hires," she says. She also wanted the person to hit the ground running. "We're a small team and I can't afford to train someone," she says.

More than 100 candidates applied for the job. The organization's online application system doesn't allow for cover letter attachments, but one of the applicants, Heidi (not her real name), sent a follow-up email after submitting her résumé. "And it's a good thing she did, because she would've been weeded out otherwise," Michele says.

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Heidi's résumé made her look like a "job hopper" — very short stints at each previous employer. Michele assumed she was a poor performer who kept getting fired. She was also the only candidate who didn't have a four-year college degree.

But Heidi's email caught Michele's eye. First off, it was professional. Heidi stated clearly that she was writing to double-check that her application had been received. She went on to explain how she had gotten Michele's name and information (through her husband's boss, who was on the board) and her personal connection to Boys & Girls Village (her father-in-law had done some work with the organization).

What really stood out to Michele, though, was Heidi's understanding of the group and the challenges it was facing. She'd done her research and "listed some things she would do or already had done that would help us address those needs," says Michele.

"The personality and passion she conveyed in the cover letter came through during her phone screening," Michele says. Heidi ended up being more than qualified for the job. "I wanted this role to be bigger from the get-go, but I didn't think that was possible. When I met her, I knew we could expand it." Three weeks later Michele offered Heidi the job and she accepted.

Case Study #2: Catch their attention. Over the past four years, Emily Sernaker applied for multiple positions at the International Rescue Committee (IRC). She never gave up. With each application, she sent a personalized cover letter. "I wanted my cover letter to highlight my qualifications, creative thinking, and genuine respect for the organization," she says.

Sarah Vania, the organization's regional HR director, says that Emily's letters caught her attention, especially because they included several video links that showed the results of Emily's advocacy and fundraising work at other organizations. Emily explains, "I had prior experience advocating for former child soldiers, human trafficking survivors, vulnerable women, and displaced persons. It's one thing to make statements in a cover

letter, like 'I can make a pitch, I am a creative person, I am thoughtful,' but showing these qualities seemed like a better way of convincing the recruiter that the statements were true."

This is what Emily wrote to Sarah about the video:

> Here is a short video about my story with activism. The nonprofit organization Invisible Children made it for a youth conference I spoke at this year. It is about four minutes.
>
> As you'll see from the video, I've had a lot of success as a student fundraiser, raising over $200,000 for Invisible Children. I've since gone on to work as a consultant for Wellspring International and have recently concluded my studies as a Rotary International Ambassadorial Scholar.

In each of the cover letters, Emily also made clear how much she wanted to work for IRC. "To convey enthusiasm is a vulnerable thing to do and can come off as naivete, but, when it came down to it, my enthusiasm for the organization was genuine and expressing it felt right," she says.

This is how Emily conveyed her interest in working for IRC:

> You should also know that I have a sincere appreciation of the IRC. I have enjoyed learning about your programs and have personally visited your New York headquarters, the San Diego New Roots farm, the We Can Be Heroes exhibit, and the Half the Sky exhibit in Los Angeles. The IRC is my top choice and I believe I would be a valuable addition to your fundraising team.

Emily learned throughout the process that the organization had hundreds of applicants for each position and it was extremely competitive. “I appreciated that I wouldn’t be the best for every opening but also remained firm that I did have a significant contribution to make,” she says. Eventually, Emily’s persistence paid off. She was hired as a temporary external relations coordinator, and four months later she moved into a permanent role.

Editor’s note (2020): The author updated this article, which was originally written in 2014, to reflect the latest advice from the experts and the reality of job-seeking during the pandemic.

LAND THE JOB

'Avoid these 2 resume words at all costs,' says career expert—here are 35 power verbs to use instead

Published Wed, Aug 31 2022•9:38 AM EDT • Updated 3 Hours Ago

Ken Coleman, Contributor
@KENCOLEMAN

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You only get less than 7.5 seconds to grab a hiring manager's attention when they read your resume for the first time.

As a career coach who has helped hundreds of people polish their resumes and land jobs, I've seen too many candidates

focus mostly on formatting, such as the font, spacing and page count.

But words matter more. According to Harvard resume experts, your chances of getting noticed are much higher when you use strong, actionable and confident verbs.

This also means knowing what to keep off, and the two words I always tell people to remove from their resumes are: "responsible for."

"Responsible for": Avoid these 2 resume words at all costs

Being responsible for something is just a circumstance. Saying you were "responsible for [X]" is a weak and generic way to describe your abilities and accomplishments.

Of course you had responsibilities. Doesn't everyone? And if not, then did you really bring any value to the company?

I also advise staying away from general office buzzwords and confusing phrases. These are words that you might hear people say all the time, but are often incredibly vague.

A few examples:

- Deep dive
- Drill down
- Flesh out
- Game plan
- Hard worker
- Move the needle
- Moving parts
- Synergize
- Team player
- Think outside the box

Power words that do belong on your resume

Here are 35 strong, confident and truly descriptive resume words that companies want to see:

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1. Directed
2. Managed

3. Spearheaded
4. Supervised
5. Trained

Resume words *teamwork*

6. Collaborated
7. Contributed
8. Joined
9. Integrated
10. Synchronized

Resume words for *achievement*

11. Accomplished
12. Completed
13. Delivered
14. Established
15. Formulated

Resume words for *communication*

16. Authored
17. Connected
18. Defined
19. Illustrated
20. Presented

Resume words for *improvement*

21. Advanced
22. Boosted
23. Enhanced
24. Increased
25. Maximized

Resume words for *research*

26. Assessed
27. Identified
28. Mapped
29. Tested
30. Verified

Resume words for *creativity*

Resume words for creativity

31. Built
32. Constructed
33. Designed

34. Developed
35. Inspired

Ken Coleman *is the bestselling author of "From Paycheck to Purpose" and host of "The Ken Coleman Show." Known as "America's Career Coach," he helps people discover how to do work they love and produce impactful results. Follow him on Twitter @KenColeman.*

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Acing the Online Job Interview

A handful of classic techniques and some tips unique to the work-from-home era can help you land that next job.

Jeshee Yoon

By Julie Weed

Aug. 5, 2020, 5:00 a.m. ET

The in-person job interview went away when offices emptied this spring because of the coronavirus pandemic. On the plus side, no more flying out to company headquarters and staying at a hotel, just to spend a day of meetings in an uncomfortable suit and then heading right back home. On the downside, common technical snafus and fewer body language clues can make the online process feel fraught. To successfully make the jump to team member from virtual job seeker, brush up on classic interview techniques and adapt them to the new world of internet interviews.

Research the Company and Your Interviewer

Interview basics still apply, so start by learning about the company, delving deeply into its website, related news coverage and employee reviews like those on Glassdoor or Indeed. Know why you want to work there because you are sure to be asked.

To research publicly traded companies, Amelia Ransom, senior director of engagement and diversity at the tax compliance software company Avalara, suggests examining their online 10-K forms, which summarize annual performance, paying close attention to the "risk factors" section that describes the key challenges a company is facing. "Connect how hiring you can help them solve those challenges," she said.

Check out your interviewer's LinkedIn profile, to understand his or her background and perhaps find things in common. Make sure that your own LinkedIn profile is up-to-date and that you've asked paint managers to post a recommendation in case your interviewer is checking you out, too.

Set the Scene

For video interviews, make sure your lighting, camera angle, outfit and background all help you look polished. Best bets for lighting are sunshine from a window that's facing you, a lamp bouncing light off a wall that reflects softly, computer screen clip-on lights, or an inexpensive ring light. The New York Times Wirecutter site provides a video with more details.

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Place your computer's camera at eye level or slightly above and tilted down (a stack of books underneath can help). Wear a professional-looking top that makes you feel confident.

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Virtual backgrounds can be tricky, so it's best to find a clean uncluttered space, with nothing to distract the interviewer. Shut the door in case someone walks by.

"Do the best with what you have," Ms. Ransom said, "but don't worry too much about it." Recruiters understand the limitations of home-based interviews. "Don't beat yourself up" if your child wanders by looking for a snack or the dog barns in, she said. The interviewer is sitting at home "dealing with the same things."

Double-Check the Tech

Technical difficulties are understandable, but do all you can to avoid them, said Eliot Kaplan, a former vice president of talent acquisition at Hearst Magazines who is now a career coach. Start by ensuring your Wi-Fi is as strong and reliable as possible. That might mean setting up your video call in the part of your home that gets the best reception, asking housemates to stay off the network during your interview or even paying for better Wi-Fi for a few months while you are job hunting.

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Make sure your laptop is fully charged. Keep your cellphone by your side (on "do not disturb") with the interviewer's phone number handy in case you need a backup communication method. Close other apps on your computer so you are not distracted by pop-ups. Double-check what will be in sight because video software programs differ in how they crop web camera views.

Practice Your Answers and Your Presence

Think ahead about common questions and how you will answer (without sounding too rehearsed). So-called behavioral questions are in vogue: asking for examples from your experience, like a time you overcame an obstacle, led a team or creatively solved a problem. It's important to answer concisely and listen closely, especially on a phone interview because you can't see the interviewer's responses and other visual cues, said Karen Amatangelo-Block, a talent acquisition executive at a global hotel company and a private coach. "You'll definitely lose them after five to seven minutes."

Practice your posture as well, Ms. Block said, because it's important to communicate that you are engaged in the video conversation and excited about the opportunity. A tip Ms. Block learned from newscasters is to "sit on the edge of your seat," which helps you to sit up straight. Pull your shoulders back to convey confidence, she said.

Even phone interviews should be conducted this way. "If you don't think about your presence," she said, "you'll be more likely to start slouching, feel less engaged and be more likely to ramble."

Set up a video call with a friend to check on setting, posture and to practice questions.

Convey Your Value

Think of the three things about yourself that you can bring to the job that are not on your résumé, Ms. Ransom said, and communicate those. "Maybe you are going for an engineering job but are also a great public speaker." As interviewer, Ms. Ransom said, she wants to know the candidate beyond the résumé page and understand "their motivations and communication style, their personality. How will they expand the company culture?"

Some of the qualities that companies have traditionally looked for — adaptability, flexibility, showing up as a self-starter and an independent worker — are more important than ever in a work-from-home world in which the boss isn't around to see what you are doing, Mr. Kaplan said. One way to demonstrate those qualities in the interview is to talk about what you've done during the pandemic. "If you've used the extra time to pick up a new skill or take on extra work responsibilities to help out your team, let the recruiter know," he said. If you relearned 10th-grade geometry to help your high schooler pass their math class, that's impressive, too.

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Questions for the Interviewer?

Interviewers often conclude by asking "Do you have any questions for me?" Let your curiosity shine through and ask something that will help you decide if the position will be a good match for you, Ms. Ransom said. "Asking something like 'Tell me how you got to where you are' feels like a template question" and won't help your decision-making process, she said.

After You Hang Up

Always send your interviewer a thank-you email and make it as specific as possible, mentioning a topic you discussed or something that inspired you. If you don't have the interviewer's contact information, send the email to your recruiter and ask her or him to pass it along.

Each Experience Helps Prepare You for the Next

Emily Chang, a recent graduate of Duke University, interviewed with 10 companies by phone or video before recently accepting an offer to work as a researcher for Rubius Therapeutics, a cell therapy biotechnology company in Cambridge, Mass. She said she was nervous when she began interviewing and after each interview would "think of something that could have been done better and file it away for the next time."

Ms. Chang said signing into the interview web link 10 or 15 minutes in advance to make sure it was working, and to take some time to collect her thoughts, helped her avoid feeling rushed. She also placed a glass of water just off-camera and set up slips of paper she could glance down at with notes she had prepared, such as how her skills matched the job requirements. After getting interrupted a few times, Ms. Chang started letting her household know when she would be interviewing, so they would be quiet. Specifically, "I had to ask my dad not to play the piano," she said.

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The Science of Strong Business Writing

by Bill Birchard

From the Magazine (July–August 2021)

Martina Paukova

Summary. Brain scans are showing us in new detail exactly what entices readers. Scientists can see a group of midbrain neurons—the "reward circuit"—light up as people respond to everything from a simple metaphor to an unexpected story twist. The big takeaway?... **more**

Strong writing skills are essential for anyone in business. You need them to effectively communicate with colleagues, employees, and bosses and to sell any ideas, products, or services you're offering.

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Many people, especially in the corporate world, think good writing is an art—and that those who do it well have an innate talent they've nurtured through experience, intuition, and a habit of reading often and widely. But every day we're learning more about the science of good writing. Advances in neurobiology and psychology show, with data and in images, exactly how the brain responds to words, phrases, and stories. And the criteria for making better writing choices are more objective than you might think.

Good writing gets the reader's dopamine flowing in the area of the brain known as the reward circuit. Great writing releases opioids that turn on reward hot spots. Just like good food, a soothing bath, or an enveloping hug, well-executed prose makes us feel pleasure, which makes us want to keep reading.

Most of the rules you learned in school—"Show, don't tell" or "Use the active voice"—still hold. But the reasons they do are now clearer. Scientists using MRI and PET machines can literally see how reward regions clustered in the midbrain light up when people read certain types of writing or hear it spoken aloud. Each

word, phrase, or idea acts as a stimulus, causing the brain to instantly answer a stream of questions: Does this promise value? Will I like it? Can I learn from it?

Kent Berridge, a pioneering University of Michigan psychologist and neuroscientist, notes that researchers originally believed that the reward circuit largely handled sensory cues. But, he explains, "it's become clear in the past 50 years from neuroimaging studies that all kinds of social and cultural rewards can also activate this system."

Whether it's a succinct declarative statement in an email or a complex argument in a report, your own writing has the potential to light up the neural circuitry of your readers' brains. (The same is true if you read the words to an audience.) The magic happens when prose has one or more of these characteristics: It's simple, specific, surprising, stirring, seductive, smart, social, or story--driven. In my work as an author and a writing coach for businesspeople, I've found those eight S's to be hallmarks of the best writing. And scientific evidence backs up their power.

Simplicity

"Keep it simple." This classic piece of writing advice stands on the most basic neuroscience research. Simplicity increases what scientists call the brain's "processing fluency." Short sentences, familiar words, and clean syntax ensure that the reader doesn't have to exert too much brainpower to understand your meaning.

By contrast, studies have shown that sentences with clauses nested in the middle take longer to read and cause more comprehension mistakes. Ditto for most sentences in the passive voice. If you write "Profits are loved by investors," for example,

instead of “Investors love profits,” you’re switching the standard positions of the verb and the direct object. That can cut comprehension accuracy by 10% and take a tenth of a second longer to read.

Martina Paukova

Tsuyoshi Okuhara, of the University of Tokyo, teamed with colleagues to ask 400 people aged 40 to 69 to read about how to exercise for better health. Half the group got long-winded, somewhat technical material. The other half got an easy-to-read edit of the same content. The group reading the simple version—with shorter words and sentences, among other things—scored higher on self-efficacy: They expressed more confidence in succeeding.

Even more noteworthy: Humans learn from experience that simpler explanations are not always right, but they *usually* are. Andrey Kolmogorov, a Russian mathematician, proved decades ago that people infer that simpler patterns yield better

predictions, explanations, and decisions. That means you're more persuasive when you reduce overdressed ideas to their naked state.

Cutting extraneous words and using the active voice are two ways to keep it simple. Another tactic is to drill down to what's really salient and scrap tangential details. Let's say you have researched crossover markets and are recommending options in a memo to senior leaders. Instead of sharing every pro and con for each market—that is, taking the exhaustive approach—maybe pitch just the top two prospects and identify their principal pluses and minuses.

Specificity

Specifics awaken a swath of brain circuits. Think of "pelican" versus "bird." Or "wipe" versus "clean." In one study, the more-specific words in those pairs activated more neurons in the visual and motor-strip parts of the brain than did the general ones, which means they caused the brain to process meaning more robustly.

Years ago scientists thought our brains decoded words as symbols. Now we understand that our neurons actually "embody" what the words mean: When we hear more-specific ones, we "taste," "feel," and "see" traces of the real thing.

Remarkably, the simulation may extend to our muscles too. When a team led by an Italian researcher, Marco Tettamanti, asked people to listen to sentences related to the mouth, hand, and leg—"I bite an apple"; "I grasp a knife"; "I kick the ball"—the brain regions for moving their jaws, hands, and legs fired.

Using more-vivid, palpable language will reward your readers. In a recent letter to shareholders, Amazon CEO Jeff Bezos didn't say, "We're facing strong competition." Channeling Tettamanti's research, he wrote, "Third-party sellers are kicking our first-party butt. Badly."

Another specificity tactic is to give readers a memorable shorthand phrase to help them retain your message. Malcolm Gladwell coined "the tipping point." Management gurus W. Chan Kim and Renée Mauborgne came up with "blue ocean strategy"; essayist Nassim Nicholas Taleb, "black swan event."

Surprise

Our brains are wired to make nonstop predictions, including guessing the next word in every line of text. If your writing confirms the readers' guess, that's OK, though possibly a yawner. Surprise can make your message stick, helping readers learn and retain information.

Jean-Louis Dessalles, a researcher in artificial intelligence and cognitive science at Télécom Paris, conducted an experiment that demonstrated people's affinity for the unexpected. He asked participants to read short, unfinished narratives and consider different possible endings for each. For example, one story read: "Two weeks after my car had been stolen, the police informed me that a car that might be mine was for sale on the internet....The phone number had been identified. It was the mobile phone number of...." The choices were (a) "my office colleague," (b) "a colleague of my brother's," or (c) "someone in my neighborhood." For 17 of 18 stories, the vast majority of people preferred the most unexpected ending (in this example, the work colleague). They didn't want a story that fulfilled their predictions.

So reward your readers with novelty. Jonah Berger and Katherine Milkman, of the Wharton School, saw the impact of surprising content when they examined nearly 7,000 articles that appeared online in the *New York Times*. They found that those rated as surprising were 14% more likely to be on the newspaper's "most-emailed" list.

Readers appreciate unusual wordplay, too. A good example is John McPhee's characterization of World War II as a "technological piñata." Or consider how a Texas-based conglomerate described itself in its 2016 shareholder letter: "Think of Biglari Holdings as a museum of businesses. Our preference is to collect masterpieces."

Stirring Language

You may think you're more likely to persuade with logic, but no. Our brains process the emotional connotations of a word within 200 milliseconds of reading it—much faster than we understand its meaning. So when we read emotionally charged material, we reflexively react with feelings—fear, joy, awe, disgust, and so forth—because our brains have been trained since hunter-gatherer times to respond that way. Reason follows. We then combine the immediate feeling and subsequent thought to create meaning.

How sensitive are we to emotion? Experiments show that when people hear a list of words, they often miss a few as a result of "attentional blinks" caused by limits in our brain processing power. But we don't miss the emotionally significant words. With those there are no blinks.

When we read emotionally charged material, we reflexively react with feelings—fear, joy, awe, disgust, and so forth. Reason follows.

So when you write your next memo, consider injecting words that package feeling and thought together. Instead of saying "challenge the competition," you might use "outwit rivals." In lieu of "promote innovation," try "prize ingenuity." Metaphor often works even better. Canadian researchers Andrea Bowes and Albert Katz tested relatively bland phrases like "What a very good idea!" and "Be careful what you say" against more-evocative expressions like "What a gem of an idea!" and "Watch your back." Readers reacted more strongly to the latter.

Just a small touch can drive the neural circuits for emotion. So before you start composing, get your feelings straight, along with your facts. Zeal for your message will show through. And if you express your emotion, readers will feel it.

Seductiveness

As humans, we're wired to savor anticipation. One famous study showed that people are often happier planning a vacation than they are after taking one. Scientists call the reward "anticipatory utility." You can build up the same sort of excitement when you structure your writing. In experiments using poetry, researchers found that readers' reward circuitry reached peak firing several seconds before the high points of emphatic lines and stanzas. Brain images show preemptive spikes of pleasure even in readers with no previous interest in poetry.

You can generate a similar reaction by winding up people's curiosity for what's to come. Steve Jobs did this in his famous "How to Live Before You Die" commencement address to Stanford University's class of 2005. "I never graduated from college," he began. "Truth be told, this is the closest I've ever gotten to a college graduation. Today I want to tell you three stories from my life. That's it. No big deal. Just three stories." Are you on the edge of your seat to hear what the three stories are?

So start a report with a question. Pose your customer problem as a conundrum. Position your product development work as solving a mystery. Put readers in a state of uncertainty so that you can then lead them to something better.

Smart Thinking

Making people feel smart—giving them an "aha" moment—is another way to please readers. To show how these sudden "pops" of insight activate the brain, researchers have asked people to read three words (for example, "house," "bark," and "apple") and then identify a fourth word that relates to all three, while MRI machines and EEGs record their brain activity. When the study participants arrive at a solution ("tree"), brain regions near the right temple light up, and so do parts of the reward circuit in the prefrontal cortex and midbrain. The readers' delight is visible. Psychological research also reveals how people feel after such moments: at ease, certain, and—most of all—happy.

How can you write to create an aha moment for your readers? One way is to draw fresh distinctions. Ginni Rometty, formerly IBM's CEO, offered one with this description of the future: "It will not be a world of man versus machine; it will be a world of man plus machine."

Another strategy is to phrase a pragmatic message so that it also evokes a perennial, universal truth. The late Max De Pree, founder and CEO of the office furniture company Herman Miller, had a knack for speaking to employees this way. In *Leadership Is an Art* he wrote: "The first responsibility of a leader is to define reality. The last is to say thank you. In between the two, the leader must become a servant and a debtor." That's wisdom not just for business managers but for parents, teachers, coaches—anyone in a guiding role.

Social Content

Our brains are wired to crave human connection—even in what we read. Consider a study of readers' responses to different kinds of literary excerpts: some with vivid descriptions of people or their thoughts, and others without such a focus. The passages that included people activated the areas of participants' brains that interpret social signals, which in turn triggered their reward circuits.

We don't want just to read about people, though—we want to understand what they're thinking as quickly as possible. A study led by Frank Van Overwalle, a social neuroscientist at Vrije Universiteit Brussel, found that readers infer the goals of people they're reading about in under 350 milliseconds, and discern their character traits within 650 milliseconds.

One way to help readers connect with you and your writing is to reveal more traces of yourself in it. Think voice, worldview, vocabulary, wit, syntax, poetic rhythm, sensibilities. Take the folksy—and effective—speeches and letters of Berkshire Hathaway CEO Warren Buffett. His bon mots include "Someone's sitting in the shade today because someone planted a tree a long

time ago," "It's only when the tide goes out that you discover who's been swimming naked," and "Beware of geeks bearing formulas."

Remember also to include the human angle in any topic you're discussing. When you want to make a point about a supply-chain hiccup, for example, don't frame the problem as a "trucking disconnect." Write instead about mixed signals between the driver and dispatcher.

Another simple trick to engage readers is to use the second person ("you"), as I've done throughout this piece. This can be particularly helpful when you're explaining technical or complicated material. For example, psychologist Richard Mayer and colleagues at the University of California, Santa Barbara, ran experiments with two versions of an online presentation on the respiratory system. Each included 100 words of spoken text paired with simple animations. But one version used the impersonal third person ("During inhaling, *the* diaphragm moves down, creating more space for *the* lungs..."), while the other was more personal ("*your* diaphragm" and "*your* lungs..."). People who listened to the latter scored significantly higher than their counterparts on a test that measured what they had learned.

Storytelling

Few things beat a good anecdote. Stories, even fragments of them, captivate extensive portions of readers' brains in part because they combine many of the elements I've described already.

Research by Uri Hasson at Princeton reveals the neural effect of an engaging tale. Functional MRI scans show that when a story begins, listeners' brains immediately begin glowing in a specific

pattern. What's more, that grid reflects the storyteller's exactly. Other research shows that, at the same time, midbrain regions of the reward circuit come to life.

Experiments by behavioral scientists at the University of Florida produced similar results. Brain images showed heightened activity in reward regions among people who read 12-second narratives that prompted pleasant images. (A sample narrative: "It's the last few minutes of the big game and it's close. The crowd explodes in a deafening roar. You jump up, cheering. Your team has come from behind to win.")

When you incorporate stories into your communications, big payoffs can result. Consider research that Melissa Lynne Murphy did at the University of Texas, looking at business crowdfunding campaigns. She found that study participants formed more-favorable impressions of the pitches that had richer narratives, giving them higher marks for entrepreneur credibility and business legitimacy. Study participants also expressed more willingness to invest in the projects and share information about them. The implication: No stories, no great funding success.

...

The eight S's can be your secret weapons in writing well. They're effective tools for engaging readers because they trigger the same neural responses that other pleasurable stimuli do. And you probably understand their value intuitively because millions of years of evolution have trained our brains to know what feels right. So cultivate those instincts. They'll lead you to the writer's version of the Golden Rule: Reward readers as you would yourself.

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Business Review.

Bill Birchard is a business author and book-writing coach. His *Writing for Impact: 8 Secrets from Science That Will Fire Up Your Reader's Brain* will be published by HarperCollins Leadership in April 2023. His previous books include *Merchants of Virtue, Stairway to Earth, Nature's Keepers, Counting What Counts,* and others. For more writing tactics, see his website .

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2.2 Communicating with Precision

So far we have discussed the importance of writing with the reader in mind; of striking the right tone for your audience, message, and purpose; of writing constructively; and of writing persuasively. Now we move onto the actual writing itself. Two key characteristics of professional technical communication are that it is precise and concise. This precision and concision must be evident at all levels, from the overall document, to paragraphing, to sentence structure to word choice, and even to punctuation. Every word or phrase should have a distinct and useful purpose. If it doesn't, cut it or revise.

The 7 Cs of Professional Writing

The 7 C's are simply seven words that begin with C that characterize strong professional style. Applying the 7 C's of professional communication will result in writing that is

- Clear
- Coherent
- Concise
- Concrete
- Correct
- Complete
- Courteous.

CLEAR writing involves knowing what you want to say before you say it because often a lack of clarity comes from unclear thinking or poor planning; this, unfortunately, leads to confused or annoyed readers. Clear writing conveys the purpose of the document immediately to the reader; it matches vocabulary to the audience, avoiding jargon and unnecessary technical or obscure language while at the same time being precise. In clarifying your ideas, ensure that each sentence conveys one idea, and that each paragraph thoroughly develops one unified concept.

COHERENT writing ensures that the reader can easily follow your ideas and your train of thought. One idea should lead logically into the next through the use of transitional words and phrases, structural markers, planned repetition, sentences with clear subjects, headings that are clear, and effective and parallel lists. Writing that lacks coherence often sounds "choppy" and ideas seem disconnected or incomplete. Coherently connecting ideas is like building bridges between islands of thought so the reader can easily move from one idea to the next.

CONCISE writing uses the least words possible to convey the most meaning while still maintaining clarity. Avoid unnecessary padding, awkward phrasing, overuse of "to be" forms (*is, are, was, were, am, be, being*), long preposition strings, vagueness, unnecessary repetition and redundancy. Use active verbs whenever possible, and take the time to choose a single word rather than a long phrase or cliched

expression. Think of your word count like a budget; be cost effective by making sure every word you choose does effective work for you. Cut a word, save a buck! As William Zinsser asserts, "the secret of good writing is to strip every sentence to its cleanest components."[1]

CONCRETE writing involves using specific, precise language to paint a picture for your readers so that they can more easily understand your ideas. If you have to explain an abstract concept or idea, try to use examples, analogies, and precise language to illustrate it. Use measurable descriptors whenever possible; avoid vague terms like "big" or "good." Try to get your readers to "see" your ideas by using specific terms and descriptions.

CORRECT writing uses standard English punctuation, sentence structure, usage, and grammar. Being correct also means providing accurate information, as well as using the right document type and form for the task.

COMPLETE writing includes all requested information and answers all relevant questions. The more concrete and specific you are, the more likely your document will be complete as well. Review your checklist of specifications before submitting your document to its intended reader.

COURTEOUS writing entails designing a reader-friendly, easy-to-read document; using tactful language and appropriate modes of addressing the audience; and avoiding potentially offensive terminology, usage, and tone. As we have discussed in an early section, without courtesy you cannot be constructive.

In some cases, some of these might come into conflict: what if being too concise results in a tone that sounds terse, or an idea that seems incomplete? **Figure 2.2.1** illustrates one method of putting all the 7Cs together.

Figure 2.2.1 *Putting all the 7Cs together* [2] *[Image description]*

Be mindful of the tradeoffs, and always give priority to being **clear**: writing that lacks clarity cannot be

understood and therefore cannot achieve its purpose. Writing that adheres to the 7 C's helps to establish your **credibility** as a technical professional.

EXERCISE 2.5 Revise for clarity

Remember the librarian's "garbled memo" from the Case Studies in Chapter 1.4? Try revising it so that it adheres to the 7 Cs; make it clear, coherent, concrete and concise, while also being complete, courteous and correct.

MEMO

When workloads increase to a level requiring hours in excess of an employee's regular duty assignment, and when such work is estimated to require a full shift of eight (8) hours or more on two (2) or more consecutive days, even though unscheduled days intervene, an employee's tour of duty shall be altered so as to include the hours when such work must be done, unless an adverse impact would result from such employee's absence from his previously scheduled assignment.

Sentence Variety and Length

While variety makes for interesting writing, too much of it can also reduce clarity and precision. Technical writing tends to use simple sentence structures more often than the other types. That said, simple does not necessarily mean "simplistic," short, or lacking in density. Remember that in grammatical terms, simple just means that it has one main clause (one subject and one predicate). You can still convey quite a bit of concrete information in a simple sentence.

The other consideration for precise writing is length. Your sentences should vary in length just as they can vary in type. However, you want to avoid having too many long sentences because they take longer to read and are often more complex. That is appropriate in academic writing but less so in technical writing. The goal is to aim for an average of around 20 to 30 words per sentence. Reserve the short sentences for main points and use longer sentences for supporting points that clarify or explain cause and effect relationships. If you feel the sentence is too long, break it into two sentences. You do not want your reader to have to read a sentence twice to understand it. If you make compound or complex sentences, ensure that you use appropriate coordinating or subordinating strategies to make the relationship between clauses perfectly clear. See Appendix E to review specific information on simple, compound, and complex sentence structures.

Precise Wording

Technical writing is precise writing. Vague, overly general, hyperbolic or subjective/ambiguous terms are simply not appropriate in this genre. You do not want to choose words and phrasing that could be interpreted in more than one way. For example, if you asked someone to define what makes a "good dog," you might get responses like "obedient, effective hunter/retriever, well-behaved, affectionate, loyal, therapeutic, goofy" and "all dogs are good!" Choose words that most precisely, concisely, and accurately convey the idea you want to convey. Below are some guidelines and examples to follow for using precise wording.

1. Replace abstract nouns with verbs.

Verbs, more than nouns, help convey ideas concisely, so where possible, avoid using nouns derived from verbs. Often these abstract nouns end in ***–tion*** and ***–ment***. See examples in the following chart.

Abstract Noun	**Verb**
acquisition	acquire
analysis	analyze
recommendation	recommend
observation	observe
application	apply
confirmation	confirm
development	develop
ability	able, can
assessment	assess

2. Prefer short words to long words and phrases.

The goal is to communicate directly and plainly so use short, direct words whenever possible. In other words, don't use long words or phrases when short ones will do. Write to *express*, not impress.

Long	Short
cognizant; be cognizant of	aware, know
commence; commencement	begin, beginning
utilize; utilization	use (v), use (n)
inquire; make an inquiry	ask
finalize; finalization	complete, end
afford an opportunity to	permit, allow
at this point in time	now, currently
due to the fact that	because, due to
has the ability to	can

3. Avoid clichés.

Clichés are expressions that you have probably heard and used hundreds of times. They are over-used expressions that have largely lost their meaning and impact.

Clichés	Alternatives
as plain as day	plainly, obvious, clear
ballpark figure	about, approximately
few and far between	rare, infrequent
needless to say	of course, obviously
last but not least	finally, lastly
as far as ___ is concerned	?

4. Avoid cluttered constructions.

This category includes redundancies, repetitions, and “there is/are” and “it is” constructions.

Redundancies		
combine/join ~~together~~	fill ~~completely~~	unite ~~as one~~
finish ~~entirely~~	refer/return/revert ~~back~~ to	emphasize/stress ~~strongly~~
examine (closely)	~~suddenly~~ interrupt	~~better/further~~ enhance
~~eventually~~ evolve ~~over time~~	~~strictly~~ forbid	rely/depend ~~heavily~~
plan ~~ahead~~	~~harshly~~ condemn	protest ~~against~~
~~completely~~ surround ~~on all sides~~	estimate/approximate ~~roughly~~	gather/assemble ~~together~~
~~clearly~~ articulate	~~carefully~~ consider	~~successfully~~ prove
~~future~~ plan	~~mutual~~ agreement	years ~~of age~~
in ~~actual~~ fact	~~positive~~ benefits	~~end~~ result/product

5. Use accurate wording.

Sometimes this requires *more* words instead of fewer, so do not sacrifice clarity for concision. Make sure your words convey the meaning you intend. Avoid using words that have several possible meanings; do not leave room for ambiguity or alternate interpretations of your ideas. Keep in mind that readers of technical writing tend to choose literal meanings, so avoid figurative language that might be confusing (for example, using the word "decent" to describe something you like or think is good). Separate facts from opinions by using phrases like "we recommend," "we believe," or "in our opinion." Use consistent terminology rather than looking for synonyms that may be less precise.

Qualify statements that need qualifying, especially if there is possibility for misinterpretation. Do not overstate through the use of absolutes and intensifiers. Avoid overusing intensifiers like "extremely," and avoid absolutes like "never, always, all, none" as these are *almost* never accurate. Remember Obiwan Kenobi's warning:

"Only a Sith deals in absolutes."[3]

We tend to overuse qualifiers and intensifiers, so below are some that you should be aware of and consider whether you are using them effectively.

Overused Intensifiers					
absolutely	actually	assuredly	certainly	clearly	completely
considerably	definitely	effectively	extremely	fundamentally	drastically
highly	in fact	incredibly	inevitably	indeed	interestingly
markedly	naturally	of course	particularly	significantly	surely
totally	utterly	very	really	remarkably	tremendously

Overused Qualifiers					
apparently	arguably	basically	essentially	generally	hopefully
in effect	in general	kind of	overall	perhaps	quite
rather	relatively	seemingly	somewhat	sort of	virtually

For a comprehensive list of words and phrases that should be used with caution, see Kim Blank's "Wordiness, Wordiness, Wordiness List." [4]

6. Prefer the active voice.

The active voice emphasizes the person/thing doing the action in a sentence. For example, *The outfielder throws the ball*. The subject, "outfielder" actively performs the action of the verb "throw." The passive voice emphasizes the recipient of the action. In other words, something is being done to something by somebody: *The ball was thrown (by the outfielder)*. Passive constructions are generally wordier and often leave out the person/thing doing the action.

Active	Passive
S →V →O	**S ←V ←O**
Subject → actively does the action of the verb → to the object of the sentence	Subject ← passively receives the action of the verb ← from the object
Subject → acts → on object	Subject ← is acted upon ← by the object

While the passive voice has a place—particularly if you want to emphasize the receiver of an action as the subject of the sentence, or the action itself, or you want to avoid using first person—its overuse results in writing that is wordy, vague, and stuffy. When possible, use the active voice to convey who or what performs the action of the verb.

Precise writing encapsulates many of the 7 C's; it is clear, concise, concrete, and correct. But it is also accurate and active. To write precisely and apply the 7 C's, it is important to look critically at your sentences, perhaps in a way you may not have done before. You need to consider the design of those sentences, from the words to the phrases to the clauses, to ensure that you are communicating your message effectively.

Image descriptions

Figure 2.2.1 image description:

A priority list of the 7 Cs.

1. Clear: Plan ahead! Know your purpose and convey your ideas in a unified manner.

2. Coherent: Organize your thoughts in a logical, structured progression.
3. Concise: Budget your words wisely; ensure your writing contains only what's necessary.
4. Concrete: Use specific and precise language, use measurable descriptors and avoid vague language.
5. Correct: Adhere to proper grammar, punctuation, and document structure.
6. Complete: Give all the important information and answer all relevant questions.
7. Courteous: Format so that the document is easy to read. Use appropriate and tactful language.

[Return to Figure 2.2.1]

Notes

1. W. Zinsser, "Simplicity," [Online]. Available: http://www.geo.umass.edu/faculty/wclement/Writing/zinsser.html
2. Figure 2.2.1 created by Alyssa Zicari and Jenna Hildemann; used with permission
3. *Star Wars: Episode III - Revenge of the Sith* (2005). [Film]. Directed by G. Lucas
4. K. G. Blank, "Wordiness list," Department of English, University of Victoria [Online]. Available: http://web.uvic.ca/~gkblank/wordiness.html

3.3 Lists

Lists, when used correctly, can be a technical writer's—and reader's—best friend. Lists allow you to emphasize important ideas. They also increase the readability of text by simplifying long sentences or paragraphs and adding aesthetic passive space to make reading more pleasant. However, using the wrong kind of list or poorly formatting a list can create confusion rather than enhance readability. Therefore, it is important to understand the various types of lists and how and why to use them.

Guidelines for Creating Lists

Adhere to the following guidelines when creating lists of any kind:

- **Include** between 2-8 items in a list. You must have at least two items in a list (or it's not a list; it's just an item). Avoid having more than 8 items in a list, as too many items can have the reverse effect. If you emphasize too many ideas, you end up emphasizing nothing. NASA recommends no more than 8 steps in an emergency procedure; more than 8 can be overwhelming in a crisis situation.
- **Try to avoid** splitting a list over two pages if possible.
- **Avoid overusing** lists. A list should always have explanatory text around it to indicate what this is a list of and why it is needed. A series of lists does not give a reader adequate information and context.
- **Adjust** spacing before, after, and within lists to enhance readability. Avoid having a list of information all scrunched up into a dense block of text; this defeats the purpose of enhancing readability.
- **Capitalize** the first letter of each list item.
- **Use** parallel phrasing for each listed item (note that each item in this list starts with a verb that is bolded only to catch your attention, not as a style you must follow).
- **Never use** a heading to introduce a list.

Each kind of list is suited for specific purposes. All lists must conform to a set of rules of construction and formatting. Learning to use the **Paragraph** formatting tool in Word (see **Figure 3.3.1**) is crucial to designing effective lists.

Figure 3.3.1 *Screenshot of* ***Paragraph*** *tools in Word 2010; you can auto-create lists using the top left buttons.*

NOTE: If you are making lists by hitting ENTER then TAB and then a dash, you are doing it wrong, and this will make future editing and maintaining readability very difficult if not impossible. Especially when writing documents collaboratively that will need extensive revision and editing, you *must* make sure to use the correct formatting tools.

Common Types of Lists

Just as bar graphs serve a different purpose than pie charts, different kinds of lists also serve different purposes. This section will describe when and how to use the following five commonly used types of lists:

- **Bullet Lists**: use when order of listed items is not important
- **Numbered Lists**: use when order is important, such as steps in instructions
- **In-sentence Lists**: use when you want to maintain sentence structure and paragraphing, and have a short list (2-4 items)
- **Labelled Lists**: use when the listed items require some explanation or amplification (like this one)
- **Nested Lists**: use when listed items have sub-lists (list within a list).

BULLET LISTS

Bullet lists are the most commonly used kind of list. They are effective when

- You want to emphasize two or more items
- You can place the items in any order (no particular order is required)
- You want to add white space to your document to enhance readability.

Bullet list items should generally be short (a word or a phrase). If you find your bulleted items are longer than this, consider using another kind of list, such as a labelled list or a nested list.

NUMBERED LISTS

Use numbered lists when the order of the listed items is important and ideas must be expressed in chronological order. For example, use a numbered list when you must enumerate a series of steps in instructions, or when you are introducing ideas that will be discussed in a certain order in the following text. If you have a list of more than 8 items, consider breaking up the list in two or more stages or categories (Steps in Stage 1, Steps in Stage 2, *etc*.).

Sample Numbered List

Revision of your document should be undertaken in 4 stages done in the following order:

1. Check formatting for readability
2. Review content to ensure the document contains all necessary information
3. Edit sentence style and structure to ensure ideas are clearly and correctly expressed in a formal and precise manner
4. Proofread for grammar, spelling, punctuation and usage errors.

***NOTE*:** The 4 steps in the sample numbered list each begin with a verb (*check*, *review*, *edit*, and *proofread*), indicating what the reader should do, and the numbers indicate the order in which these steps should be performed.

IN-SENTENCE LISTS

Use in-sentence lists when you want to (a) keep paragraph style, (b) to avoid having too many lists on one page, and (c) when the list items are relatively short and can be expressed in a sentence clearly without creating a run-on. The previous sentence is an example of an in-sentence list. Note that a bracketed, lower-case letter introduces each listed item.

Typically, in-sentence lists have 2-4 items. Generally avoid putting more than 4 items in this kind of list (unless they are very short), or your sentence might become difficult to read.

LABELLED LISTS

Use a labelLed list when you are listing items that need further explanation. These can be bulleted or numbered. Start the list item with the word or term (the “label” portion), placed in italics and/or bold, and followed by a colon. After the colon, write the explanation or amplification of the term or concept in normal body text.

Sample Labelled Lists (one numbered, one bulleted)

The course assessment plan includes three main written assignments given in the following order:

1. *Report One*: an internal proposal written in Memo format
2. *Report Two*: an internal proposal written in Short Report format
3. *Report Three*: A comparative recommendation report written for an external client in Long Report format.

The plan also includes two oral presentations:

- **Presentation 1**: Individual or pair presentation on a technical writing topic (worth 5%)
- **Presentation 2**: Team presentation giving a progress report on Report 3 (worth 10%).

Make sure the label portions (before the colon) are phrased consistently and either italicized or bolded (or both!) for emphasis; try to make the explanations that follow roughly equal in length and detail.

NESTED LISTS

A "nested" list is a list-within-a-list or a list with sub-listed items. These can be useful for avoiding overly long bullet lists by categorizing items into sub-lists. Note the long bullet list on the left does not effectively categorize items, so emphasis is lost. The Nested List on the right is more effective.

Sample Bullet List (too long)	Sample Nested List

Every restaurant should contain the following beverage containers:
• Coffee cups/mugs
• Latte bowls
• Tea cups
• Travel mugs
• Water glasses
• Red Wine glasses
• White wine glasses
• Beer glasses
• Beer steins
• Cocktail glasses
• Shot glasses
• Reusable plastic cups.
(12 items is too many for one list!)
	Every restaurant should contain the following kinds of beverage containers:
	• Hot beverage containers
	  ◦ Coffee mugs/cups
	  ◦ Latte bowls
	  ◦ Tea cups
	  ◦ Travel mugs
	• Cold beverage containers
	  ◦ Water glasses
	  ◦ Red wine glasses
	  ◦ White wine glasses
	  ◦ Beer glasses
	  ◦ Beer steins
	  ◦ Cocktail glasses
	  ◦ Shot glasses
	  ◦ Reusable plastic cups.

This is not an exhaustive list of the kinds of lists you may run across in your technical reading. These are simply the most common kinds of lists, and ones you should be able to identify and use effectively in your technical writing assignments to enhance readability.

A Note on Punctuating the End of List Items

Conventions for punctuating list items vary depending on the context. Legal writing tends to use more punctuation than technical writing (list items often end in semicolons and the final item is introduced by an "and"). In technical documents, because this style favours simplicity, you typically place a period only after the final item in your list. If each listed item has complete sentences within it, then you will place a period at the end of each list item. If you have a simple bullet list, you may omit the final period.

EXERCISE 3.3 Identify the document design errors in the following example

Five Kinds of List:

1. Bullet lists
2. numbered lists.
3. Lists can be written within a sentence using bracketed letters to introduce the list items.
4. nested list
    - Also called a "list within a list"
5. Labelled List

Integrating Lists into Body Text

Just as there are rules for constructing lists, there are rules for how to incorporate them into your text. Most importantly, a list must be introduced by a lead-in sentence (or clause) that contains both a subject and a verb. Technical writers often use the expression "the following" somewhere in the lead-in sentence to clearly indicate that a list of items will follow.

If the lead-in is a complete sentence that contains both a subject and verb (*ie*. it could end in a period), it should end in a colon that introduces the listed items. If the sentence is not a complete thought, (*ie*. you could *not* put a period there) the lead-in should not end in any punctuation, and each listed item must be able to grammatically complete the lead-in sentence.

Example Lead-in Sentences for Lists

Complete lead-in sentence (*ends in a colon*)

The term design project must allow students to incorporate **the following** elements into their solution:

- Mechanical engineering principles
- Electrical engineering knowledge
- Software/programming basics.

Partial lead-in sentence (*no punctuation after lead-in*)

The term design project must allow students to design a solution using

- Mechanical engineering principles
- Electrical engineering knowledge
- Software/programming basics.

GRAMMAR TIP: One of the most common errors found in technical reports has to do with the introduction of lists and how these are punctuated. Here are some additional examples of how—and how NOT—to introduce lists.

Don't use a colon before a list **unless** the introduction to the list is a complete thought, that is, an **independent clause**. Remember this rule: if you can't put a period there, then you can't put a colon there.

In some cases, a list might not be helpful and instead might just over-complicate your document. In such cases, list your ideas in sentence form, within the paragraph, as in the final panda example below. A page with too many lists looks like an outline instead of a coherently expressed series of ideas.

Pandas have the following traits:? • Black and white fur • Vegetarian diet • Excellent problem-solving skills. Common characteristics of pandas include: × • Black and white fur • Vegetarian diet • Excellent problem-solving skills.	Pandas are: × • Black and white • Vegetarian • Intelligent. Pandas are ? • Black and white • Vegetarian • Intelligent. Pandas have black and white fur, eat a vegetarian diet, and can solve difficult problems. ?

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10 Nonverbal Cues That Convey Confidence At Work

Jacquelyn Smith Forbes Staff
Editor's note: Jacquelyn Smith is the author of the book *Pitch Perfect*.

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What you do appears to say louder than what you say. Photo by Jonathan Pozniak

Imagine your co-worker storms into her office after lunch. She's red-faced, fidgety and speaks to no one. She throws her briefcase on the desk, plops down in her chair and glares out the window. Sure, "we you all right?" You may touch her on angry tears, "I'm fine!"

Which message do you believe: the nonverbal cues, or her verbal one? Most people would say the nonverbal message, says Darlene Price, author of *Well Said: Presentations and Conversations That Get Results*.

Price says research shows that 93% of communication is a mismatched message—where nonverbal and verbal messages are incongruent—cryptic almost always hints the predominant nonverbal message over the verbal one. "In other words, how we say something is more impactful than what we say," she explains. "In some studies, nonverbal communication is 10 times more impactful than what the spoken words impart that the actual words appear superfluous when the message involves emotional meaning and attitudes," she adds.

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Gallery: 10 Nonverbal Cues That Convey Confidence At Work
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Patti Wood, a body language expert and author of *Snap: Making the Most of First Impressions, Body Language, and Charisma*, says it boils down to how interaction with people makes someone feel. "Most people want to be in the company of people who are comfortable and confident that communication is so easy that we can teach more telling than the few words you could utterings in the same amount of time."

What is a nonverbal cue, exactly?

Wood says nonverbal cues include "all the communication between people that do not have a specific verbal component. They are "body movements, body orientation, tones of the voice, facial expressions, details of dress, and choice and movement of objects that communicate." Time and space can also be perceived as having nonverbal cues.

"Simply put, nonverbal cues include all the ways you present and express yourself, apart from the actual words you speak," Wood says. "Nonverbal cues are important at work and in business because perception is reality."

She says Fredrick Nietzsche was spot on when he said, "All credibility, all good conscience, all evidence of truth come only from the senses."

"How others 'sense' or perceive you significantly impacts your credibility and success at work," she explains. "Research shows people with great ideas and exceptional talent are often misjudged, misdiagnosed, and overlooked because of their ineffective nonverbal communication.

Because nonverbal cues are sent primarily from the "emotional brain" rather than the neocortex, they more easily honest and revealing messages, Wood says. "Nonverbal cues can help business people determine others' motivations and analyze business interactions with much more richness. Nonverbal cues can also come from simply telling us spoken or printed words.

Professionals who understand nonverbal cues can evaluate what their clients, customers and co-workers are really telling them in order to know how to better meet their needs. "Employees can evaluate the messages their managers are sending to customers, clients or fellow workers and know whether that employee is feeling or helping business," Wood says. "And employees can learn to read the subtle signals a boss is sending in order to adjust their behavior accordingly."

In power-differential relationships, such as with superiors and subordinates, nonverbal communication is critical, she says, because it can help one read and body language. Wood explains, "Superiors need to know how to make their subordinates comfortable while communicating their desires in order to get results. Subordinates need to know how to read the boss's subtle signals to discern the best way to approach professional situations."

Effective nonverbal communication is critically important for career advancement, Price adds. "Among the top traits employers look for in job candidates are communication skills and interpersonal skills, professionalism and enthusiasm. Expressing these and other leadership traits requires sending the right nonverbal cues."

In Photos: 10 Nonverbal Cues That Convey Confidence at Work

You cannot avoid sending nonverbal messages to others, however, it is possible to train yourself to send the right ones. Here are ten nonverbal cues that convey confidence and credibility in the workplace.

Good eye contact. Eye contact is your primary tool for establishing nonverbal connection with others, Price says. "It communicates your level of involvement, interest and warmth. When speaking to others, ideally look them in their eyes at least two to three seconds before looking away or glancing at something else. Eye contact should be steady and for one second or less to become an eye duel and unnecessarily intensity, anxiety or evasive." The next time you're in a meeting or giving a speech, see if you can learn how long you look at specific individuals and if you visually engage with everyone in the room.

A confident handshake. Communicating through touch is another important nonverbal behavior. "Always put your hand out to shake hands," Wood says. "A firm, good handshake is one with full palm to palm contact."

In business, the handshake is often the only appropriate "permissible touch" between people, Wood says. "It is a good way to establish a positive connection with a full and firm handshake with palms embraced with its web. Shake up and down once or twice, coupled with a sincere smile and eye contact. Avoid the extremes of either a weak limp handshake or an aggressive crushing grip. Both are off-putting and communicate that the survey candidates (or) matched to the strength of the other person. Treat men and women with equal respect when shaking hands. Gender makes no difference, and either may initiate the handshake."

Effective gestures. A gesture is any physical movement that helps express an idea, opinion or emotion. "Strive to punctuate your words with movements that is natural, lively, purposeful and spontaneous," Price says. "In general, gestures should be made in front of your body and should be made with open palms and fingers pointing upward. Avoid pointing, fidgeting, scratching, tugging, playing with hair, wringing hands, and touching a ring."

Dressing the part. Shakespeare asserts in Hamlet, "For the apparel of proclaims the man." For men and women, clothing speaks volumes in the workplace, Price says. "Make sure business casual is not 'business-casual.' Choose high quality, well-tailored garments that convey professionalism. Remember that clothing communicates your mood and state of heart (which for important meetings and presentations, especially with senior leaders and customers. Avoid sleeve accessories, bare patterns, tight garments and revealing necklines." Dress for the job you want, not the job you have. If you are a manager or supervisor, dress for the next professional promotion in the workplace.

To complement your business attire, take steps to control perspiration, avoid cologne or perfume (as it offers possible allergies and sensitivities to smell), ensure fresh breath, and keep nails and hands neatly manicured.

Authoritative posture and presence. "Take up space," Wood says. Get the arms on the chair, or stand with your feet a bit apart. "A female big stance in North America is with the feet typically, a bit inches apart, and a male power stance starts with the feet more than 6 inches apart."

Price adds, "When you stand up tall and straight, you send a message of self-assurance, authority and energy." Whether standing or sitting, imagine a string gently pulling your head and spine toward the ceiling. Your weight is evenly balanced, your chest is lifted, your head is held high and your shoulders are relaxed. "Good posture creates a dynamic commanding presence and an attitude of leadership. Conversely, bad posture signals to others that you lack confidence and have low self-esteem or low energy levels."

Appropriate facial expressions. Faces speaking with a picture, point your ears and square your shoulders toward them, Price says. "This conveys attentiveness and creates open body language." Avoid angling your body away from them. Lean forward, not backward, and avoid crossing your arms or legs. Hence, "Nonverbal cues clearly convey your mood, your honest and appreciate the opportunity to meet with them. Make eye contact now and hugs are nonverbal. Also, avoid multi-tasking during the interaction. Don't check e-mail, look at your phone, write notes, check the screen, or disengage in any way. It shows disinterest and disrespect."

Responding to others' nonverbal cues. When leading a meeting, speaking to a group, or interacting one-on-one, pay close attention to the nonverbal cues of your co-workers or boss. Price says, "Listen with your ears. Nonverbal cues can tell you when they have a question, want to say something, agree or disagree, need a break, require more explanation, or have an emotional response." By responding appropriately to others' cues, you not only convey an understanding for yourself, you show a high level of empathy, sensitivity and care for those which holds trust.

In Photos: 10 Nonverbal Cues That Convey Confidence at Work

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Jacquelyn Smith

Follow

I began writing for Forbes in 2010. It was just as the economy was starting to perk up and is fascinating time to cover this... **Read More**

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Stemming The Flow: How To Keep Women In Finance

Erin Gentile Board Contributor
Deloitte DEVELOPING | Tax Partner Leadership

Jan 25, 2022, 7:00pm EST

According to Deloitte's *Women at Work 2022: A Global Outlook* report, the number one reason women recently left their jobs was a lack of advancement opportunities. This trend is particularly alarming in the U.S. where women are accepted by women within financial services institutions (FSIs) as of 2021, women held just 4% of CEO positions, 19% of C-suite roles, and 21% of board seats.

Our recently published *Advancing more women leaders in financial services: a global report*, part of Deloitte's Within much series addressing gender equity, found that although FSIs have taken some steps in the past decades to retain women, the industry still lags behind. The report also assesses the status of gender diversity in FSIs around the globe—identifying lessons learned that can help these organizations advance equity, drawing on stakeholders and actions from both inside and outside financial services.

Gender equity and the spheres of influence

FSIs cannot operate in a vacuum when it comes to gender equity. Their sphere of influence extends far and wide—beyond the various "spheres of influence"—the workforce, the marketplace, and society—challenge and bolster their organization's ability to promote of gender equity goals.

- **Workforce:** An encouraging finding of the advancing more women study is that, across all geographies, respondents agreed that gender diversity in the workplace enhances are more engaged, productive, and loyal to their organizations. FSIs that implement policies that support inclusivity are more likely to foster this culture. Some notable examples of this can be found in Hong Kong, where the reporting field expanding to include non-binary and transgender employees. FSIs in Hong Kong are offering solutions such as flexible working hours, technology-enabled remote work, and mentoring and sponsorship programs. Similarly, in South Africa, some FSIs have set internal gender diversity targets and have linked them to executive pay.
- **Marketplace:** External FSI stakeholders—such as investors, customers, and regulators—are increasingly focused on how organizations are working to improve women's representation on boards and in executive leadership. These stakeholders are looking for transparency as well as holding organizations accountable for their commitments. In the recent study of institutional investors, more than 60% of respondents considered a company's diversity metrics, with both reporting that diversity within a company's board impacted their trust. Around the globe, the marketplace is moving in influence on gender equity. In Japan, where gender diversity is still nascent, organizations are being encouraged to disclose their compensation based on the Gender Gap Index. Firms are required to publish their diversity policies and goals. In addition, many of Australia's leading employers are including their clients, suppliers, industry associates, and cross-competitors in their gender equity efforts.
- **Society:** With equity focusing on increasing women representation in leadership roles, society plays a greater role in shaping diversity efforts in the private sector. In some countries—such as France and the Netherlands—legislative actions have had a direct impact on the number of women leadership roles, particularly on boards. In the United Kingdom, Parliament has drafted a bill with the goal to increase prioritize and advance gender equity by developing programs and initiatives that support private sector efforts. For example, in Singapore and other countries in Asia, the government is working to provide gender equity via such actions as low-cost childcare and parental leave programs. In Australia, the federal government is supporting gender equity by requiring transparency from companies, including publishing the number and percentage of women on boards and in executive positions.

Taking action

So what can FSIs do to improve gender equality? Based on lessons learned from around the world and current efforts of influence, FSIs should consider:

- Addressing persistent challenges such as childcare needs and remote work options—both amplified during the pandemic.
- Ensuring FSI leaders offer continued support through sponsorship, mentoring, and offering programs for women at all levels; and
- Evaluating and refining succession planning and promotion practices to ensure each open position is pulling from a diverse slate of candidates. This can help build a diverse pipeline of future leaders.

There are regions and countries around the world that have made some good strides in terms of gender equity. For example, in the U.S., the number of women in leadership roles is up 5% in only a few years from 14% to 19%. While that's great news, taken as a whole, many countries remain far from the 50% threshold most often considered the tipping point for driving real change across an organization.

In reality, it's a vicious cycle: the more women there are in leadership positions, the more there will be going forward. According to Deloitte's research, it has shown that for each woman added to the C-suite, the number of women added to the organization increases exponentially. Women at work: This can only happen when FSIs continue to build on recent success and ponder in the future forward.

For more gender equity reports, Deloitte's Women at Work, please see the Deloitte website. Advancing more women leaders in financial services: a global report and Women at Work 2022: A Global Outlook as well as our series, Within much.

Erin Gentile

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Introduction

This short chapter explains the four basic principles in general, each of which will be explained in detail in the following chapters. But first I want to tell you a little story that made me realize the importance of being able to name things, since *naming* these principles is the key to having power over them.

The Joshua tree epiphany

Many years ago I received a tree identification book for Christmas. I was at my parents' home, and after all the gifts had been opened I decided I would identify the trees in the neighborhood. Before going out, I read through some of the identification clues and noticed that the first tree in the book was the Joshua tree because it only took two clues to identify it. Now, the Joshua tree is a really weird-looking tree and I looked at that picture and said to myself, "Oh, we don't have that kind of tree in Northern California. That is a weird-looking tree. I would know if I saw that tree, and I've never seen one before."

So I took my book and went outside. My parents lived in a cul-de-sac of six homes. Four of those homes had Joshua trees in the front yards. I had lived in that house for thirteen years, and I had never seen a Joshua tree. I took a walk around the block, and there must have been a sale at the nursery when everyone was landscaping their new homes—at least 80 percent of the homes had Joshua trees in the front yards. And I had never seen one before! Once I was conscious of the tree—once I could name it—I saw it everywhere. Which is exactly my point: Once you can name something, you're conscious of it. You have power over it. You're in control. You own it.

So now you're going to learn the names of several design principles. And you are going to be in control of your pages.

Good Design Is As Easy as 1-2-3

1. Learn the principles.
They're simpler than you might think.
2. Recognize when you're not using them.
Put it into words -- name the problem.
3. Apply the principles.
You'll be amazed.

typefaces
Times New Roman
Regular and **Bold**

Good design
is as easy as...

Learn the basic principles.
They're simpler than you might think.

Recognize when you're not using them.
Put it into words—name the problem.

Apply the principles.
Be amazed.

typefaces
Brandon Grotesque Black,
Regular, and *Light Italic*

Train your Designer Eye: Find at least five differences that help to make the second example communicate more clearly. (Suggestions on page 225.)

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Suggestions

The four basic principles

The following is a brief overview of the basic principles of design that appear in every well-designed piece of work. Although I discuss each one of these principles separately, keep in mind they are really interconnected. Rarely will you apply only one principle.

Contrast

The idea behind contrast is to avoid elements on the page that are merely *similar.* If the elements (type, color, size, line thickness, shape, space, etc.) are not the *same,* then make them **very different.** Contrast is often the most important visual attraction on a page—it's what makes a reader look at the page in the first place. It also clarifies the communication.

Repetition

Repeat visual elements of the design throughout the piece. You can repeat colors, shapes, textures, spatial relationships, line thicknesses, fonts, sizes, graphic concepts, etc. This develops the organization and strengthens the unity.

Alignment

Nothing should be placed on the page arbitrarily. Every element should have some visual connection with another element on the page. This creates a clean and sophisticated look.

Proximity

Items relating to each other should be grouped close together. When several items are in close proximity to each other, they become one visual unit rather than several separate units. This helps organize information, reduces clutter, and gives the reader a clear structure.

Umm . . .

When distilling these four principles from the vast maze of design theory, I thought there must be some appropriate and memorable acronym within these conceptual ideas that would help people remember them. Well, uh, there is a memorable—but rather inappropriate—acronym. Sorry.

Although you can now find this acronym in relation to design all over the web, this book is its origin.

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and just
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3.4 Figures and Tables

Visual elements such as graphs, charts, tables, photographs, diagrams, and maps capture your readers' attention and help them to understand your ideas more fully. They are like the illustrations that help tell the story. These visuals help to augment your written ideas and simplify complicated textual descriptions. They can help the reader understand a complicated process or visualize trends in the data. The key concept to remember here is that visuals *clarify*, *illustrate*, and *augment* your written text; they are not a replacement for written text. The old adage, "a picture is worth a thousand words" does not hold true in technical writing, but adding visuals may save you a hundred words or so of additional explanation and clarification. If you have visual elements in your document, they must be based on and supplement your written content. Throwing in "gratuitous graphics" just to decorate or take up space can confuse your reader.

It is important to choose the right kind of visual to convey the story you want your reader to understand. If visuals are poorly chosen or poorly designed for the task, they can actually confuse the reader and have negative consequences. For example, it's very likely that the first thing you noticed when you opened this page was the image above. Did you wonder why is it there? Has it distracted you?

Conventions for Integrating Visuals in your Document

Each style of visual has its own conventions that you will recognize after you have seen enough of them. In addition, different publications have different style guides that dictate the specifics of how to format and integrate visual elements. In general, however, whenever you integrate any kind of visual, you should adhere to five key rules.

Five Rules for Integrating Visual Elements into your Document
• Give each visual a numbered caption that includes a clear descriptive title • Refer to the caption number within the body text and discuss its content • Label all units (x and y axes, legends, column box heads, parts of diagrams, etc)

- Provide the source of the data and/or visual image if you did not create it yourself
- Avoid distorting the data or image.

In addition, visual elements should also be surrounded with sufficient passive space to emphasize the image and enhance its readability. If copying and pasting an image, make sure all elements are clear and the print size is readable. A visual that has been shrunk down to an unreadable size does not help the reader understand your ideas. Whenever possible, try to orient the visual image in the same direction as the body text.

Examine **Figure 3.4.1** below. Do you understand what information it conveys? What story it's trying to tell? What is missing?

Figure 3.4.1 *[Image Description]*

If you look carefully, you might be able to guess what story this graph is telling. However, the lack of a descriptive caption and labelling of axes makes it impossible to know for sure. Compare it to **Figure 3.4.2** below.

Figure 3.4.2 *Water Consumption in Edmonton during the 2010 Gold Medal Hockey Game*. [1] [Image description]

Figure 3.4.2 has a numbered caption (which I have just referred to in my paragraph), a descriptive title, and it has properly labelled x and y axes and legends. With this added information, the story starts to take shape. The graph tells the story of the fluxuating water demand in Edmonton during the 2010 Olympic gold medal hockey game. If you add some context that flushing of toilets is one of the main causes of water demand, the story comes into focus. The figure also cites the source the graph was retrieved from in the caption using an in-text citation, which is linked to a full reference below. Therefore, if you want more information about this data, you can find it. The original image has not been distorted in any way. Thus, **Figure 3.4.2** follows the five key rules listed above.

In addition to those five general rules, there are specific guidelines for implementing them. These are outlined in detail in the Faculty of Engineering Co-op Work Term Report Guideline (.pdf).

Specific Guidelines for Integrating Graphics

Terminology

Visual elements are referred to as either **Tables** or **Figures**. **Tables** are made up of rows and columns and the cells usually have numbers in them (but may also have words or images). **Figures** refer to any visual elements—graphs, charts, diagrams, photos, *etc*.—that are not Tables. They may be included in the main

sections of the report, or if they contain supplemental material they may be contained in an appendix. Try to ensure that figures and tables are not broken over two pages. Tables that require a full page might be best put in an appendix.

Labelling Tables and Figures

Tables and figures must all be labelled with numbered captions that clearly identify and describe them. Figure captions are generally placed below the figures, while table captions must be placed above the tables. This is because we generally read tables from the top down, and therefore want to see the caption at the top. Figures are not always read top down. When you open a page and see a figure, the first thing you want to know is "what is that?" The caption below it should immediately identify what the figure represents for the reader. If you choose to place figure captions above the figures, do so consistently throughout your document.

Use the following conventions to assist the reader in understanding your graphics:

- **Numbering**: Table and Figures are numbered sequentially, but separately

  e.g. Table 1, Table 2, Figure 1, Figure 2, Table 3, *etc*.

- **Captioning**: After the Figure or Table number, add a **descriptive caption** that clearly indicate what the figure or table illustrates without having to read anything else on the page.

There are two systems for numbering figures and tables within your document:

- ***Simple Consecutive Numbering***: All figures and tables are numbered consecutively (Figure 1, Figure 2, Figure 3, Table 1, Table 2, Table, 3 *etc*.) throughout the document regardless of which section they are in.
- ***Section-based Numbering***: Within each section, figures and tables may be numbered sequentially through each section (e.g. Table 1.1 refers to the first table in section 1, Table 2.4 refers to the fourth table in section 2).

If a large number of illustrations are presented, the latter option is the better choice. This can become confusing, however, when using sub-sections.

If the table or figure that you present in your report was not created by you, but comes from other sources, you must include a reference for the original source in your caption: *e.g.*: Figure 1. Network Design [3]. You must ensure that all figures and tables represent data accurately and ethically, and that they do not distort data to create bias.

Using the **Insert → Caption** … function will allow Word to keep track of the Figure and Table numbering for you, and allow you to auto-create a **List of Figures and Tables** at the beginning of your document.

If you don't use the **Insert Caption** function, then you should manually change the font of your captions to distinguish them from body text. Caption font is usually slightly smaller than body font and is often italicized. The numbered portion is often bolded in both the caption and in the in-paragraph reference to the figure or table for ease of cross-referencing.

Referring to Tables and Figures in your Text

Any figures or tables you use in your document must be discussed in your text. Use the following guidelines when discussing and referring to tables and figures:

- Place the table/figure close to where it is first referred to in the text (preferably immediately below the paragraph in which it is first mentioned).
- Refer to tables and figures in your text by their numbers, not their placement in the text. *E.g*, "See Figure 9 for a detailed schematic" (**not** "see the figure below"); "the test results are summarized in Table 1."
- When referring to a figure or table in your body text, it is helpful to place the reference in bold font.

Selecting the Right Visual

Table 3.1.1 lists common kinds of visual elements used in technical writing, along with their general purpose or description (for a more detailed discussion of how and when to use these kinds of visuals, see Graves and Graves.[2] Notice the "box head" on the top and "stubs" on the left are bolded and centred to enhance readability. Tables that have text in the cells instead of numbers can also be referred to as figures. Thus, **Table 3.1.1** could have been captioned as **Figure 3.7** instead.

TABLE 3.1.1 Common types of illustrative graphics

[Skip Table]		
Type of Visual		**Description and Purpose**
Tables		Place detailed data/information in categories formatted into rows and columns for comparison; use when exact figures are important. Label column headings (box heads) and/or rows (stubs).
Graphs	**Bar Graph**	Compare and contrast two or more subjects at the same point in time, or compare change over time.
	Column Graph	Reveal change in a subject at regular intervals of time.
	Line Graph	Show the degree and direction of change relative to two variables; compare items over time, show frequency or distribution, or show correlations.
Charts	**Pie Chart**	Display the number and relative size of the divisions of a subject; shows relation of parts to a whole (parts must sum to 100% to make sense).
	Org. Chart	Map the divisions and levels of responsibility or hierarchy within an organization.
	Flow Chart	Show the sequence of steps in a process or procedure.
	Gantt Chart	Indicates timelines for multi-stepped projects, especially used in proposals and progress reports.
Illustrations	**Diagram**	Identify the parts of a subject and their spatial or functional relationship; emphasize detail or show dimensions.
	Photo	Show what a subject looks like in realistic detail or show it being used.
	Animation	Simulate a process, operation, or incident.
	Film clip	Depict a process, operation, or incident in realistic detail.

For more information on how to format a long report, see the Faculty of Engineering's "Co-op Work Term Report Guidelines." [3]

EXERCISE 3.7 Design a figure to match the data

Using what you have learned about figures and tables, create two different visual representations of the data described in the following paragraph, and caption them as ***Figure 1.*** *Add your descriptive caption.* Explain why you chose those methods and list the pros and cons of each:

We surveyed the students in 3 sections of ENGR 240 (total of 100 students) to gauge which aspect of the

writing process they found most challenging: Pre-writing, Drafting, or Revising. The results among the 3 sections were consistent. Overall 50% of students said that they found the Pre-writing stage to be the most challenging, while 28% found the Drafting stage most difficult and 22% said the Revision stage was most challenging (see **Figure 1)**. These results suggest that we should place more emphasis on teaching and practicing pre-writing strategies during the course.

[create a **Figure 1** and a descriptive caption that illustrates the data above]

Additional Resources

Review the Visuals – Tables and Figures in Reports PowerPoint.

For a look at how professionals can animate data, check out Hans Rosling's "The Joy of Stats" on *YouTube* [Online].

Image descriptions

Figure 3.4.1 image description:

A graph with no figure number or caption and no x or y axis labels, so it is difficult to determine what point it is trying to make. It shows something rising and falling during a hockey game. This thing spikes at the end of each period and drops dramatically when Canada wins.

[Return to Figure 3.4.1]

Figure 3.4.2 image description:

A graph charting water consumption in Edmonton during the 2010 Gold Medal Hockey Game. The graphs shows spikes in water consumption at the end of each period, followed by very low usage periods, especially near the end of the 3rd period, and between the end of the game and the medal ceremony. It also has a line depicting water usage the previous day, which was fairly steady throughout the day.

[Return to Figure 3.4.2]

Notes

1. EPCOR, Edmonton's Water Utility. "Water Consumption in Edmonton during 2010 Gold Medal hockey game," Cited on Flowing Data[Online] Available:https://flowingdata.com/2010/03/09/canada-the-country-that-pees-together-stays-together/
2. H. Graves and R. Graves, "Communicating through visuals," in *A Strategic Guide to Technical Communications*, 2nd ed. Peterborough, ONT: Broadview Press, 2011, pp. 137-148.
3. Engineering Co-op Work Term Report Guidelines (.pdf)

COMPANION MATERIALS FOR

Simplification

CHAPTER 10

Simplification

We've discussed how we all suffer from the curse of knowledge to some degree, in one area or another. One of the most profound products of the curse is the inability to simplify. Although valuable, the knowledge we bring to the table inhibits our ability to predict what will appear simple for others, which then makes our explanations overly complex.

To illustrate this point, consider the concept in computer software called *virtualization*. Most computer users are not familiar with the term and have no need to know it. The people who *do* understand virtualization are often those who work in the computer industry or who take a keen interest in computers; let's call them geeks. This sets up a classic situation in explanation.

We have the geeks at the "Z" end of the scale and the average computer user at the "A" end.

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Lefever, Lee. The Art of Explanation : Making Your Ideas, Products, and Services Easier to Understand, John Wiley & Sons, Incorporated, 2012. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/mansfield-ebooks/detail.action?docID=918226.
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Because this book is about moving people from "A" to "Z," we will zoom in a bit more and consider the role of simplification in this situation.

From the geek perspective, virtualization is a big, complex subject. To understand it, you'd need to be able to grasp several different ideas about software and operating systems. It seems impossible to explain these concepts to a novice computer user because there are so many details and ideas that are prerequisites for understanding virtualization. For them, it looks like this, with numerous ideas, exceptions, and details:

When an idea seems this unattainable, it has an impact on how experts explain the idea. The curse causes explanations to be:

- Accurate, yet incomprehensible
- Detailed to the point of being ineffective
- Filled with unfamiliar words
- Presented without context or application

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Lefever, Lee. The Art of Explanation : Making Your Ideas, Products, and Services Easier to Understand, John Wiley & Sons, Incorporated, 2012. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/mansfield-ebooks/detail.action?docID=918226.
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However, when we consider simplification, we focus on transforming that complex bundle of details into big, understandable ideas that serve as stepping-stones to future understanding.

This is a perfect time for those who already understand virtualization to set guidelines. If you, as an expert, seriously want to help novice users understand concepts like this, you must think a little differently, which means you . . .

- **Do not make assumptions** about what people already know
- Use the **most basic language** possible
- Zoom out and try to see the subject from the **broadest perspective possible**
- **Forget the details** and exceptions and focus on big ideas
- **Trade accuracy for understanding**
- Connect the basic ideas to **ideas the audience already understands**

Inside that big bundle of details and ideas is a single notion that will make the overall concept easier to understand. To get to that core, you can use the aforementioned guidelines like a machete to hack away at all the extraneous knowledge that causes complexity. Soon enough, you will find any complex idea can be made simple. It just takes a new approach.

Meet Steve. Steve has been in the computer industry for years. These days, he's in the business of selling software to big companies, and he's good at it. He knows the details of the software, but he also has a playful personality that attracts people to him. Lately, his company has been selling virtualization software, and he knows more about it than almost anyone at his company. Most days, he's on the phone or at a customer site, singing the praises of virtualization with the IT team and the CIO. They all live in the IT bubble and speak a language that's uniquely technical. This has become second nature for Steve.

Recently, Steve and his family joined cousins at a family reunion and repeatedly had the same conversation. Then, however, he was cornered by his aunt Martha,

(*continued*)

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(*continued*)

who had many questions. She recently bought a computer and has become fascinated with how they work. Not content with small talk, Martha quickly moved into the details of his job. She said "I know you're in the computer industry, but what do you *really* do?"

Steve said he "sells software."

"What kind of software?"

"It's called *virtualization software*." Usually at this point, he expected people to tune out, but not Martha.

"What's virtualization?" she asked. Steve was stunned. How could he possibly answer that question in the middle of a family reunion? Did she even know what an operating system is? He looked for a way out.

In Steve's mind, virtualization was impossibly complex. It took him months to get his head around it himself, and hardly anyone at work knew as much as he. Because he's never tried to simplify it for someone like Martha, he abandoned the effort by telling her that "it's really complex software that's hard to explain." With that, he leaves her standing by the pool, icy beverage in hand.

Later that night, Steve tossed and turned. His interaction with Martha bothered him. He had left her standing there with no answers. Not only was it rude, it showed that he had lost the ability to think about virtualization from a novice's point of view. He resolved that night to solve this problem. His goal was to explain virtualization simply for someone like Martha.

It was all he could think about the next day, so much so that he blocked off his calendar at the end of the week to focus solely on it. As time passed, he started to notice the language he and his colleagues routinely used and thought about Martha. For the first time, he could see that although she was the focus, the goal of simplification could have a positive impact on his work.

Eventually, he invited one of his peers to help simplify virtualization with him. What could he have said to answer Martha's question that would have helped her?

They started with a discussion about what Martha likely already understood about computers, and made the following list:

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- She has a computer and is familiar with software programs
- Her computer has an operating system such as Windows or Mac OS
- She knows that computers have limited resources, such as memory
- She knows that businesses use computers

They also considered language. What words or phrases did they use every day that were likely to sound foreign to her? They listed things such as:

- Virtualization
- Servers
- Platform
- Utility computing
- Processing power
- IT

The next step was to zoom out. Steve and his friend needed to see virtualization from a high level. To do this, they considered why virtualization exists:

- Computers are expensive and need to be maximized
- Virtualization uses computer power more efficiently
- Virtualization reduces waste
- Virtualization increases flexibility
- Virtualization saves money

Now it was time to focus. They needed to boil down everything they knew about virtualization into a few big ideas. This was a challenge because they both had such deep knowledge of the subject. Steve's friend started by asking about which kind of virtualization would be their focus. Platform? Hardware? Desktop? Software? Steve took a deep breath. Figuring this out was a challenge.

(*continued*)

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(*continued*)

They both agreed that the *type* of virtualization didn't matter for Martha. It was a detail that may have stood in their way in the past, but now that Steve was serious about solving this problem, he knew he had to stay focused on the big picture. He must keep in mind that Martha just needed a simple idea.

Soon enough they began to tackle the concept and underlying core of virtualization. They knew that if they could help Martha see the overall concept, she could make sense of the details. Steve had an idea—what if they focused on virtualization on her computer? If she could understand it there, he could build on that knowledge and connect it with how businesses use it.

Steve's friend balked and waved his hand. "It's apples and oranges. The virtualization on *her* computer is not what you're selling."

Steve reminded him that Martha needed to see the *concept*. "For it to make sense, we must forget the details and stay focused on the big ideas. Otherwise, she'll never get it."

For the first time, Steve began to picture it all coming together. He would use Martha's computer to relate the concept of virtualization and then slowly expand the idea to businesses and connect it to his job.

The next weekend Steve asked his wife for Martha's phone number and she chuckled. "You and Martha have a lot in common these days?"

He smiled and said "After today, she will understand my job."

His wife chuckled again and said "Good, maybe she can help me get it!"

Steve made the call and confessed to Martha that her question had been on his mind for a long time. He apologized for not being able to offer her better answers, and let her know that he was now calling to make up for it. Martha was taken aback. She never imagined he would be so considerate and helpful.

Steve was ready for the challenge. He took great care to speak in terms she could understand. Here's what he said:

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"Martha, you have a computer, right? If I'm not mistaken, your operating system is Windows." She confirmed. "Well, that computer has all sorts of powerful tools inside that make it work. When you use your computer, you typically only use part of what it can do. You're actually not even using most of that power. In fact, it's going to waste. My job is to sell software that makes use of that extra power on computers. This way, you'd have Windows, plus another system on the same computer, one that's dedicated to putting that extra power to use without impacting you. It's like having two computers in one. Does that make sense?"

Martha got it. She could imagine her computer being more powerful than she needed, and could see that it was wasteful. She could also envision her computer having room for another system to use that computing power. She wanted him to continue, "Why would I want to add another system to my computer?"

He laughed and said "Good question—let's look at how this idea could be used . . .

"*Your* computer is the only computer in your house. However, many businesses have hundreds, even thousands of computers, including huge, powerful ones. Just like your own, these computers also have extra power that these organizations could put to use. This is a lot of potential power across a big company. The software I sell makes it possible for the company to use that existing power instead of buying and maintaining more computers. That saves them money, and helps me send the kids to college."

Martha was both speechless and satisfied. It all made perfect sense, and she now understood enough about virtualization to explain it to her friends.

But for Steve, it was just the beginning. This exercise in simplification changed his perspective and helped him see that although most of his colleagues might have known about virtualization, they had no idea how to explain it to those who didn't. Now that he had figured out how to make the idea accessible to people outside their bubble, both his marketing team and his CEO wanted to hear his explanation so they could help people like Martha see the big idea.

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Steve was able to simplify the complex idea of virtualization by following a few guidelines:

- **Do not make assumptions about what people already know**.
  He gauged his audience's level of understanding and listed the pertinent subjects they were likely to understand.
- **Use the most basic language possible**.
  He considered his normal language and listed what words, such as *virtualization*, *servers*, and *platform,* would *not* sound familiar to his audience.
- **Zoom out and try to see the subject from the broadest perspective possible**.
  He wrote down statements that reflected the basic ideas of virtualization, such as the fact that computers have extra power that goes to waste and how software can make use of that power.
- **Forget the details and exceptions and focus on big ideas**.
  He chose not to discuss the types of virtualization or even use the word *virtualization* until the end.
- **Be willing to trade accuracy for understanding**.
  He related virtualization to Martha's computer, even though his software would never work for her.
- **Connect the basic ideas to ideas the audience understands**.
  He used her computer as the starting point for understanding virtualization.

The idea at the core of virtualization was rather simple: virtualization puts unused computer power to work. For someone like Martha, this was a graspable idea and one that could be built upon.

Steve realized that his years of experience had led him to see virtualization as a big, complex bundle of ideas. Understanding it required an understanding of IT, computer infrastructure, operating systems, and computer science. But he found that all the details, exceptions, and ideas were just noise—and barriers to understanding—for someone like Martha. To get to the core, he had to eliminate the noise until only the simplest idea remained and could be heard.

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COMPANION MATERIALS FOR

Sources, summarizing, and citing

5.2 Finding and Evaluating Research Sources

In this "information age" when so much information is available at our fingertips on the Internet, it is crucial to be able to critically search through the reams of information in order to select *credible* sources that can provide *reliable and useful* data to support your ideas and convince your audience. In the era of "fake news," deliberate misinformation, and "alternative facts," developing the skill to evaluate the credibility of sources is critical.

From your previous academic writing course, you are familiar with academic journals and how they differ from popular sources, as in **Figure 5.2.1**. If you would like to refresh your memory on this, watch UVic library's video on Scholarly and Popular Sources. These contain peer-reviewed articles written by scholars, often presenting their original research, reviewing the original research of others, or performing a "meta-analysis" (an analysis of multiple studies that analyze a given topic).

Figure 5.2.1 *Examples of Popular vs Scholarly Sources.*[1]

Scholarly articles published in academic journals are usually required sources in academic research essays; they are also an integral part of engineering projects and technical reports. Many projects require a **literature review**, which collects, summarizes and sometimes evaluates the work of researchers in this field whose work has been recognized as a valuable contribution to the "state of the art." However, they are not the only kind of research you will find useful. Since you are researching in a professional field and preparing for the workplace, there are many credible kinds of sources you will draw on in a professional context. **Table 5.2.1** lists several types of sources you may find useful in researching your projects.

TABLE 5.2.1 Typical research sources for technical projects

[Skip Table]

Source Type	Description
Academic Journals, Conference Papers, Dissertations, etc.	Scholarly (peer-reviewed) academic sources publish primary research done by professional researchers and scholars in specialized fields, as well as reviews of that research by other specialists in the same field. For example, the *Journal of Computer and System Sciences* publishes original research papers in computer science and related subjects in system science; *International Journal of Robotics and Animation* is one of the most highly ranked journals in the field.
Reference Works	Specialized encyclopaedias, handbooks and dictionaries can provide useful terminology and background information. For example, the *Kirk-Othmer Encyclopedia of Chemical Technology* is a widely recognized authoritative source. **Do not** cite *Wikipedia* or *dictionary.com* in a technical report.
Books **Chapters in Books**	Books written by specialists in a given field and contain a References section can be very helpful in providing in-depth context for your ideas. For example, *Designing Engineers* by Susan McCahan et al. has an excellent chapter on effective teamwork
Trade Magazines and Popular Science Magazines	Reputable trade magazines contain articles relating to current issues and innovations, and therefore they can be very useful in determining the "state of the art" or what is "cutting edge" at the moment, or finding out what current issues or controversies are affecting the industry. Examples include *Computerworld*, *Wired*, and *Popular Mechanics*.
Newspapers (Journalism)	Newspaper articles and media releases can offer a sense of what journalists and people in industry think the general public should know about a given topic. Journalists report on current events and recent innovations; more in-depth "investigative journalism" explores a current issue in greater detail. Newspapers also contain editorial sections that provide personal opinions on these events and issues. Choose well-known, reputable newspapers such as *The New York Times*.
Industry Websites (.com)	Commercial websites are generally intended to "sell," so you have to select information carefully, but these websites can give you insights into a company's "mission statement," organization, strategic plan, current or planned projects, archived information, White Papers, technical reports, product details, costs estimates, *etc.*

Organization Websites (.org)	A vast array of .org sites can be very helpful in supplying data and information. These are often **public service** sites and are designed to share information with the public.
Government Publications and Public Sector Web Sites (.gov/.edu/.ca)	Government departments often publish reports and other documents that can be very helpful in determining public policy, regulations, and guidelines that should be followed. *Statistics Canada*,[2] for example, publishes a wide range of data. University web sites also offer a wide array of non-academic information, such as strategic plans, facilities information, *etc.*
Patents	You may have to distinguish your innovative idea from previously patented ideas; you can look these up and get detailed information on patented or patent-pending ideas.
Public Presentations	Public Consultation meetings and representatives from industry and government speak to various audiences about current issues and proposed projects. These can be live presentations or video presentations available on **YouTube** or **TED talks**.
Other	Can you think of some more? (Radio programs, Podcasts, Social Media, *etc.*)

The importance of critically evaluating your sources for authority, relevance, timeliness, and credibility cannot be overstated. *Anyone can put anything on the internet*; and people with strong web and document design skills can make this information look very professional and credible—even if it isn't. Since much research is currently done online, and many sources are available electronically, developing your critical evaluation skills is crucial to finding valid, credible evidence to support and develop your ideas. In fact, this has become such a challenging issue that there are sites like this List of Predatory Journals that regularly update its online list of journals that subvert the peer review process and simply publish for profit.

H.G. Wells has been (mis)quoted as stating, "statistical thinking will one day be as necessary for efficient citizenship as the ability to read and write."[3] On the other hand, Mark Twain (supposedly quoting British Prime Minister Benjamin Disraeli) famously said, "There are three kinds of lies: lies, damned lies, and statistics." The fact that the actual sources of both of these "quotations" are unverifiable makes their sentiments no less true. The effective use of statistics can play a critical role in influencing public opinion as well as persuading in the workplace. However, as the fame of the second quotation indicates, statistics can be used to mislead rather than accurately inform—whether intentionally or unintentionally.

When evaluating research sources and presenting your own research, be careful to critically evaluate the **authority**, **content**, and **purpose** of the material, using questions in **Table 5.2.2**.

TABLE 5.2.2 Evaluate the authority, content, and purpose of information

[Skip Table]	
Authority **Researchers** **Authors** **Creators**	Who are the researchers/authors/creators? Who is their intended audience? What are their credentials/qualifications? What else has this author written? Is this research funded? By whom? Who benefits? Who has intellectual ownership of this idea? How do I cite it? Where is this source published? What kind of publication is it? **Authoritative Sources:** written by experts for a specialized audience, published in peer-reviewed journals or by respected publishers, and containing well-supported, evidence-based arguments. **Popular Sources:** written for a general (or possibly niche) public audience, often in an informal or journalistic style , published in newspapers, magazines, and websites with a purpose of entertaining or promoting a product; evidence is often "soft" rather than hard.
Content	**Methodology** What is the methodology of their study? Or how has evidence been collected? Is the methodology sound? Can you find obvious flaws? What is its scope? Does it apply to your project? How? How recent and relevant is it? What is the publication date or last update?
	Data Is there sufficient data here to support their claims or hypotheses? Do they offer quantitative and/or qualitative data? Are visual representations of the data misleading or distorted in some way?

Purpose Intended Use and Intended Audience	Why has this author presented this information to this audience? Why am I using this source? Will using this source bolster my credibility or undermine it? Am I "**cherry picking**" – the use of inadequate or unrepresentative data that only supports my position (and ignores substantial amount of data that contradicts it)? Could "**cognitive bias**" be at work here? Have I only consulted the kinds of sources I know will support my idea? Have I failed to consider alternative kinds of sources? Am I representing the data I have collected accurately? Are the data statistically relevant or significant?

Given the pie chart in **Figure 5.2.2**, if you only consulted articles that rejected global warming in a project related to the issue of climate change, you could be guilty of cherry picking and cognitive bias.

Figure 5.2.2 *The number of articles that reject global warming out of all peer-reviewed climate articles within a 21 year time period.* [4]

Beware of Logical Fallacies

There are many logical fallacies that both writers and readers can fall prey to (see **Table 5.2.3**). It is important to use data ethically and accurately, and to apply logic correctly and validly to support your ideas.

TABLE 5.2.3 Common logical fallacies

[Skip Table]	
Bandwagon Fallacy	Argument from popularity – "*everyone else is doing it, so we should too!*"
Hasty Generalization	Using insufficient data to come to a general conclusion. *An Australian stole my wallet; therefore, all Australians are thieves!*
Unrepresentative Sample	Using data from a particular subset and generalizing to a larger set that may not share similar characteristics. *e.g.: giving a survey to only female students under 20 and generalizing results to all students*.
False Dilemma	"Either/or fallacy" – presenting only two options when there are usually more possibilities to consider *e.g.: You're either with us or against us.*
Slippery Slope	Claiming that a single cause will lead, eventually, to exaggerated catastrophic results.
Slanted Language	Using language loaded with emotional appeal and either positive or negative connotation to manipulate the reader
False Analogy	Comparing your idea to another that is familiar to the audience but which may not have sufficient similarity to make an accurate comparison *e.g.: Governing a country is like running a business.*
Post hoc, ergo prompter hoc	"After this; therefore, because of this" *e.g.*: *A happened, then B happened; therefore, A caused B.* Just because one thing happened first, does not necessarily mean that the first thing caused the second thing.
Begging the Question	Circular argument – assuming the truth of the conclusion by its premises. *e.g.*: *I never lie; therefore, I must be telling the truth*.
Ad hominem	An attack on the person making an argument does not really invalidate that person's argument. It might make them seem a bit less credible, but it does not dismantle the actual argument or invalidate the data.

Straw Man Argument	Making a "straw man" argument means restating the opposing idea in an inaccurately absurd or simplistic manner to more easily refute or undermine it.
Others?	There are many more… can you think of some? For a bit of fun, check out Spurious Correlations.

We all have biases when we write or argue; however, when evaluating sources, you want to be on the look out for bias that is unfair, one-sided, or slanted. Consider whether the author has acknowledged and addressed opposing ideas, potential gaps in the research, or limitations of the data. Look at the kind of language the author uses: is it slanted, strongly connotative, or emotionally manipulative? Is the supporting evidence presented logically, credibly, and ethically? Has the author cherry-picked or misrepresented sources or ideas? Does the author rely heavily on emotional appeal?

Critical thinking lies at the heart of evaluating sources. You want to be rigorous in your selection of evidence, because once you use it in your paper, it will either bolster your own credibility or undermine it.

Notes

1. Cover images from journals are used to illustrate difference between popular and scholarly journals, and are for noncommercial, educational use only.
2. Government of Canada, Statistics Canada [online]. Available: http://www.statcan.gc.ca/eng/start
3. "What is the source of the H.G. Wells quote, 'Statistical thinking will one day be as necessary for efficient citizenship as the ability to read and write/"? *Quora* n.d.[Online]. Available: https://www.quora.com/What-is-the-source-of-the-H-G-Wells-quote-Statistical-thinking-will-one-day-be-as-necessary-for-efficient-citizenship-as-the-ability-to-read-and-write
4. "Why climate deniers have no credibility — in one pie chart," *DeSmog Blog* [Online]. Available: https://www.desmogblog.com/2012/11/15/why-climate-deniers-have-no-credibility-science-one-pie-chart

6.1 Frequently Asked Questions

1. What is IEEE Style and why do I need to use it?

The Institute of Electrical and Electronics Engineers (IEEE) Style is one of many systems for referencing (citing and documenting) sources that you have quoted, paraphrased, or summarized in your documents or presentations. Different disciplines use different styles, as they suit the needs of their users. For example,

- Engineering generally uses IEEE or APA Style
- Social Sciences generally use APA
- Humanities disciplines often use MLA or Chicago Style
- The Sciences generally use CSE.

IEEE is the generally accepted format for writing research papers and reports in technical fields, particularly in computer science. You should always confirm with your instructors which format they expect you to use.

In your assignments and Work Term Reports, you often have to gather information, data, illustrations, theories, interpretations and facts about your assigned topic. These sources often provide the evidence or theoretical framework you need to support and develop your ideas. You must cite information and images that you retrieved from other sources to show that you have done good quality research, and to give credit for the ideas to the original author. Failing to cite the source—whether quoted, paraphrased or summarized—is plagiarism. Citing your sources correctly has the following benefits:

- Provides evidence you need to support your claims and validate ideas
- Shows you have done significant reading and research on your topic, and therefore have a credible level of authority to write or speak on this topic
- Shows that you can synthesize and incorporate information into your own work, combining it with your own ideas; the citations distinguish YOUR ideas from those of your sources
- Allows the reader to find those sources and do further reading
- Allows you to maintain academic integrity (avoid plagiarizing).

2. How do I cite and reference sources properly?

Citing and referencing sources is a two-part process: there is an in-text marker that directs the reader to the complete bibliographical reference at the end of the document. Both elements are essential and missing one or the other can result in plagiarism. This **cross-referencing** system is made up of the following two elements:

1. **In-Text Citations:** when you (a) first refer to a source, (b) quote, paraphrase or summarize a source, or (c) use data or graphics from a source, you must place an in-text citation referring to that source within paragraph. The citation takes the form of a number in a square bracket [1] typed inline with your sentence text (generally not super-scripted). Citations are numbered in chronological order as they appear in your paper. Thus, the first source that you site is [1]. The second source is [2], *etc*. Once a source is given a number, it always retains that number. So if you cite the first source later on in your paper, it is still (and always) cited as [1] throughout your paper.
2. **References List:** include a numbered list of all the sources you have cited in your paper, documented properly in IEEE style, at the end of your paper. A reader familiar with academic conventions will be able to tell what kinds of sources you are referencing, and will be able to find the source based on the information included.

3. In-Text Citations – Where do they go?

It can be tricky to know exactly where to place the in-text citation in your sentence. Generally, the default position for a citation is at the end of the sentence, unless placing it there would create confusion. For example, where should the citation go in the following sentence?

> Smith claims that "insert a quotation here," but other scientists argue that her conclusions are flawed.

If you place the citation for Smith at the end of the sentence, you are saying that Smith acknowledges that many scientists think her conclusions are flawed. That wouldn't make sense. You would have to cite like this:

> Smith claims that "insert a quotation here" [1], but other scientists [2]-[5] argue that her conclusions are flawed.

The citation can be put in several places:

- At the end of the sentence, if the entire sentence is a quotation, paraphrase, or summary of the source's idea: Chan asserts ideas X and Y, and he gives additional examples to illustrate them [3].
- Directly after the name of the source: Chan [1] claims…
- Directly after the quotation: Chan asserts that "insert quotation here" [2], and carry on with *your* idea (your analysis of Chan's assertion).
- After referring to a source or an idea from a source:
    - This theory was first put forward in a 1996 study [4].
    - Several recent studies [3], [5], [9]-[12] have suggested that…

NOTE: Your citation should NOT go inside the quotation marks; it is not part of the quotation. However, **punctuation** must be placed AFTER the citation, as that citation is part of that sentence (or clause), not part of the next sentence. For example

> Author X claims "this idea is a quotation" [1]. The next sentence starts here…
>
> Author X claims "this ideas is a quotation" [1], and I add my interpretation after.

Occasionally, some writers use IEEE citations like this (but I don't recommend it for your university assignments or Co-op Work Term Reports):

> As [1] and [5] have shown, quantum theory has many practical applications in real world settings. [2] disagrees, however, and argues that ….

This is why you must put the period AFTER the citation when a sentence ends with a citation. A citation that comes AFTER the period technically belongs to the next sentence, as [2] does in the preceding example.

4. What about page numbers for quotations?

When citing a quotation from a print source, your citation should indicate the page where that quotation can be found:

> [2, p.7]. or, if referring to several consecutive page [2, pp. 7-12]

If the source is from the Internet or does not have pagination, you don't have to indicate page numbers (or paragraph numbers).

When citing equations, figures, appendices and such, use the same format you use for citing the page number:

> [3, eq. (2)]
>
> [3, Fig. 7.2]
>
> [3, Appendix B]

If you create your own visual (table or graph) based on the data from a source, then your citation should refer to the source. You might include a note such as

> … figure data adapted from [3].

5. Do I need to keep citing the source every time I refer to it?

If you are discussing the ideas in a source at length (for example, in a summary), you do not need to cite every consecutive sentence. Cite the first time you mention the source. As long the following sentences clearly indicate that the ideas come from the same source—for example, you are using **signal phrases**, such as "the author further clarifies the problem by…"—you do not need to keep citing.

If you stop using signal phrases, be sure to include a citation. If you introduce material from another

source or add your own analysis between references to that source, you will have to re-cite the source when you refer to it again. Always make sure your reader knows which ideas come from a source~~,~~ and which come from you, and when you shift from one to the other. If in doubt, cite.

6. What if a source has more than one author?

If the source you are citing has one or two authors, use their names in your signal phrase:

- Brady [5] argues that ….
- Mehta and Barth's study [6] demonstrates that ….

If the source has three or more authors, use the name of the lead author, followed by *et al.*, the Latin term meaning "and the others." Like all Latin words, *et al.* should be italicized:

- Isaacson *et al.*, in their study on fluid dynamics, found that ….

NOTE: in your Reference at the end of your paper, it is a courtesy to list the names of ALL the authors who contributed to the source (rather than using *et al.*). However, if there are 6 or more authors, it is acceptable to use *et al.* in your reference list.

7. How do I figure out what the title of an academic journal is?

Figure 6.1.1 shows a typical .pdf file of a journal article. It will help you determine the various elements of an academic article that must be included in your reference. Note the difference between the database company (such as Elsevier, EbscoHost, JSTOR, etc) and the name of the journal.

Figure 6.1.1 *Elements of an Academic Article.*

8. How do I set up my References list?

Different citation styles use various terms to introduce their list of references, for example, **Bibliography** or **Works Cited**. IEEE style uses the term **References**, or sometimes **Cited References** to distinguish from **General References** (of works that have helped to form the author's ideas, but have not been cited in the document).

At the end of your paper, add a list of all the sources you have cited in your paper, **in the order you have cited them**—that is, in numerical order (not in alphabetical order). Each reference must provide thorough and complete documentation so that readers can identify the kind of source, and retrieve it if they want to read it. **Section 6.2** shows the formats for many of the different kinds of sources you will likely use in your papers and projects. It is important to use the correct conventions for each type of source, as readers familiar with academic conventions will expect this, and they will be able to tell what kinds of sources you are referencing based on what information is included and how it is formatted. If you use conventions incorrectly (such as failing to italicize or use quotation marks around titles to indicate what kind of source it is), you can confuse and mislead your readers.

Format Guidelines for Setting up a REFERENCES List

Here are some general formatting guidelines for setting up your references list:

- Create a bold heading called **References**, aligned with the **left** margin. If you are using headings, make this heading consistent with other first level headings in your document.
- The square-bracketed numbered references should be flush with the left margin, and should form a column of their own, with the text of the references indented so the numbers are easy for the reader to see (use the "hanging indent" function to format this, or use a table with invisible grid lines).
- Give all authors' names (up to five), but only use the first initial. Don't invert the order. Separate names with commas, and include the word "and" before the last author.
- Capitalize only the first word (and the first word after a colon, as well as proper nouns) in titles of **articles** within journals, magazines and newspapers**, chapters** in books**, conference papers**, and **reports**. Only use ALL CAPS for acronyms.
- Capitalize the first letter of all main words in the titles of **books, journals, magazines** and **newspapers**.
- Add a space between references if you single space each reference.

If you use citation software (such as Zotero, Endnote, or Mendeley) to generate a list of references, be sure to review the references it generates for any errors. These programs are not foolproof, and it is up to you to make sure your references conform to IEEE conventions. For example, sometimes the auto-generator will give a title in ALL CAPS or the author's full first name. You will have to revise this. They usually do not give DOIs; you may have to add these.

Sample References List

The sample **References** list below presents shows the preferred formatting. Note the hanging indent that makes the numbers on the left stand out in a highly readable format.

References

[1] M. Ogot and G. Kremer, *Engineering Design: A Practical Guide*, Pittsburgh: Togo Press, 2004.

[2] A. B. Brown, P. D. Adams and J. A. Smith, “Improved procedure for error detection,” *Can. J. of Elec. Engineers*, vol. 9, pp. 545-588, Nov. 1979.

[3] S. McCahan, P. Anderson, M. Kortschot, P. E. Weiss, and K. A. Woodhouse, “Working in Teams,” in *Designing Engineers: An Introductory Text*, Hoboken, NJ: Wiley, 2015, pp. 219-260.

[4] “IEEE Style: A guide to referencing style for Murdoch University students and staff,” *Murdoch University Library*, 6 July, 2017. [Online]. Available: http://libguides.murdoch.edu.au/IEEE

6.2 Setting Up A Reference List - Sample Entries

Below are some examples of how to document the kinds of sources you will typically reference in your academic and technical papers. When possible, include the DOI (Digital Object Identifier) for .pdf and other documents found online through a database, and/or a URL link for other online sources.

* IEEE Reference Guide (.pdf) (2018)[1] indicates that the basic guideline for citing online sources is to follow the standard citation for the print source given previously and add electronic location (URL) or the Digital Object Identifier (DOI) at the end of the citation. Add a URL at the end of the reference if the source is available on the world wide web. If both a URL and a DOI are available, place the DOI last.

Examples of how to reference different kinds of sources

Articles from Journals and Magazines (Things that are published periodically)

Author(s), "Article title," *Journal or Magazine Title*, vol. #, no. #, pp., Mo. year. DOI [If available online, add URL and/or DOI link]

Print

H. Y. Zhou and K. M. Hou, "Intelligent urban public transportation for accessibility dedicated to people with disabilities," *Sensors*, vol. 12, no. 8, pp. xx-xx, Aug. 2012.

Online

M. Sakals, "Eyes in the sky: Unmanned aerial vehicles in the natural resources sector," *Innovation Magazine* [Online], vol. 19, no. 5, pp. 17-19, Sept-Oct. 2015. Available: http://www.digitalityworks.com/Viewers/ViewIssue.aspx?IssueID=140&PageNo=1

Conference Paper

Author(s), "Title of paper," Presented at *Name of Conf.*, City of Conf., Abbrev. State/Prov., year, pp. xxx-xxx. Paper number [If available online, give URL or DOI].

M. Ibrahim, "Creative design dynamics and creative systems," in *Proc. 2009 IEEE Int. Systems Conf.*, Vancouver, BC, 2003, pp. 273-278. DOI: 10.1109/SYSTEMS.2009.4815811.

Newspaper Articles

Author(s), "Title of article," *Title of Newspaper*, Mo. day, year, [Online]. Available: URL [Accessed: Mon. day, year].

Online

C. Wilson-Clark, "Computers ranked as key literacy," *The West Australian*, March 29, 2004. [Online]. Available: http://www.thewest.com.au. [Accessed Sept. 18, 2004].

Print

B. Bart. "Going Faster." *Globe and Mail*, sec. A p.1, Oct. 14, 2002.

Webpage or Website (WWW) (material *only* available online such as blogs, etc.)

Author(s), "Webpage Title," *Website Name* [Type of medium]. Available: URL and date. [Accessed: mo. day, year].

M. Fogarty, "Which versus that," *Grammar Girl*, *Quick and Dirty Tips* [Online]. Available: https://www.quickanddirtytips.com/education/grammar/which-versus-that-0. [Accessed: June 1, 2019].

"IEEE Style: A guide to referencing style for Murdoch University students and staff," *Murdoch University Library*, [Online]. Available: http://libguides.murdoch.edu.au/IEEE

Books

Author(s), *Title of Book*. City: Publisher, year.

M. Ogot and G. Kremer, *Engineering Design: A Practical Guide*. Pittsburgh: Togo Press, 2004.

Chapter in a book

Author(s), "Title of Chapter," in *Title of Book*. City: Publisher, year, pp.

S. McCahan, P. Anderson, M. Kortschot, P. E. Weiss, and K. A. Woodhouse, "Introduction to Teamwork," in *Designing Engineers: An Introductory Text*, Hoboken: Wiley, 2015, pp. 219-260.

Technical Reports (Government, Industry, Organizations)

Author(s), "Title of report," Name of Company/Organization, City, Report. #, year. Accessed: date [Online]. Available: URL or DOI

Delcan, "Johnson Street Bridge Condition Assessment Report," Delcan and City of Victoria, Victoria, B.C., 2009. Accessed: June 14, 2019 [Online]. Available: https://www.johnsonstreetbridge.com/wp-content/uploads/2018/01/johnson-street-bridge-condition-assessment-delcan-engineering.pdf

University of Victoria Campus Planning and Sustainability, "The Grand Promenade: Design Charrette," Campus Greenway, Summary Report 11.2018. Accessed: May 1, 2019 [Online]. Available: https://www.uvic.ca/campusplanning/current-projects/campusgreenway/index.php

Personal Communications (interview, telephone, email, *etc.*)

Author, private communication, Mo. day year.

Patents

Author, "Title of patent," U.S. Patent x xxx xxx, Mo. day, year.

J. P. Wilkinson, "Nonlinear resonant circuit devices," U.S. Patent 3 624 125, July 16, 1990.

Lectures or Presentations

Speaker (Date), "Title of Presentation/Lecture," Occasion and location of presentation. [Type of medium: URL if available online].

J. Dagg (Oct. 22, 2017), "Team Dynamics," ENGR 110 Plenary Lecture, University of Victoria. [PowerPoint slides available: https://coursespaces.uvic.ca/mod/folder/view.php?id=1021973]

Lecture Notes

"Title of class notes," class notes for Course Number, Department, University, Term, year.

"Maxwell's equations and time-varying electromagnetic fields," class notes for ECE 359, Department of Electrical and Computer Engineering, University of Victoria, Winter, 2015.

Reference Works (Encyclopedia, Dictionary, Handbook, etc.)

Author(s). (year). "Chapter title," in *Book Title*, xth ed. [Type of medium]. Editor(s) name(s), Ed(s). Location: Publisher, mo. day, volume or chapter no. (if available), pp. Available: URL [access date].

With an author

D. Hart and A. Bauen. (2002). "Fuel cell fuel cycles," in *Fuel Cell Technology Handbook*. [Online]. G. Hoogers, Ed. Boca Raton, FL: CRC Press. Available: ENGnetBASE [Accessed: Sept. 22, 2008].

A. D. French, N. R. Bertoniere, R. M. Brown, H. Chanzy, D. Gray, K. Hattori, and W. Glasser. (2003). "Cellulose" in *Kirk-Othmer Encylopedia of Chemical Technology.* [Online]. John Wiley & Sons, Inc. DOI: 10.1002/0471238961.0305121206180514.a01.pub2.

No author

"Composite material," in *Wikipedia, the Free Encyclopedia.* [Online]. May 13, 2008. Available: http://en.wikipedia.org/w/index.php?title=Composite_material [Accessed: May 24, 2008].

Image from a print source

Similar to a chapter in a book or article in a print journal:

> Creator of image, "Title of image," in "Title of article" or *Title of Book*, and the rest of the required publication information for an article or book.

Image from an online source

> Creator of image, if available. "Title of the image" if there is one, *Web Site name*, the URL, and the date of access.

Podcast

> A. A. Artist, Credit, and B. B. Artist, Credit, "Title of episode," *Title of Program: Subtitle*, Date of recording, year. Place of recording: Publisher. [Format]. Available: URL. [Accessed: Mo. day, year].

S. Gary, Presenter, "Mars Insight's Drill Fails," *SpaceTime with Stuart Gary*, June 12, 2019. Sydney: SpaceTime. [Podcast episode]. Available: https://megaphone.link/BIT3581656190. [Accessed June 14, 2019].

Others?

See the IEEE style guide from Murdoch University[2] for helpful examples of many other kinds of sources.

Also see IEEE Reference Guide (2018) for a more complete list of various types of sources and how to reference them.

EXERCISE 6.1

Find a variety of sources (at least 5 different types) on a specific topic related to your current course project. Set up a **References** list for them in IEEE Style.

Notes

1. IEEE Editorial Style Manual, IEEE Author Centre [Online]. Available: https://ieeeauthorcenter.ieee.org/your-role-in-article-production/ieee-editorial-style-manual/
2. "IEEE Style: A guide to referencing style for Murdoch University students and staff," Murdoch University Library, 18 May 2018. [Online]. Available: http://libguides.murdoch.edu.au/IEEE

COMPANION MATERIALS FOR

Communicating to persuade

2.3 Writing To Persuade

Sometimes, you may want to persuade your reader to take a particular action or position on an issue. To be effective, you should consider the following elements of persuasion, often referred to as Rhetorical Appeals. The ancient Greek words are *ethos, pathos, logos*, and *kairos*. These concepts are still critical in rhetoric studies today (see **Figure 2.3.1**):

- ***Ethos* – Appeal to Credibility/Authority:** this element of persuasion involves establishing your credibility, expertise, or authority to be making the argument. What experience or expertise do you have? What knowledge or skills do you possess? What's your role within the organization, and/or in relation to the reader? Why should the reader trust you as a reliable, knowledgeable, authoritative, and ethical source of information?
- ***Pathos* – Appeal to Emotion/Interest/Values:** this element involves appealing to the emotions, values, and/or interests of the reader. How does your proposal benefit them? Why should they care about it? How does it relate to the goals of the organization? How can you build "common ground" with your reader? What will make your reader feel "good" about your project? How can you evoke emotions such as pride or outrage?
- ***Logos* – Appeal to Reason/Logic:** this element involves grounding your argument in logic, reason, and evidence. What evidence supports your claims? On what facts and data is your reasoning based? Arguments grounded in reason and evidence are often considered the strongest. Government organizations and companies alike generally like to make "evidence-based decisions."
- ***Kairos* – Appeal to Timeliness/Appropriateness**: using this appeal means being aware of what is appropriate and timely in a given rhetorical situation. Sometimes, a well-crafted argument can fail because it comes at the wrong time. *Kairos* involves knowing what is "in" or "hot" right now, what is an important topic or issue, and how best to discuss it; knowing when it is the "right time" to broach a topic or propose an idea; knowing how to use the appropriate tone, level of formality and decorum for the specific situation.

Finding the appropriate blend of appeals is critical to making a successful argument; consider that when making your case, you often have to "win both hearts and minds"—so you'll need to appeal to both emotions and logic, do whatever you can to show the reader that you are a trustworthy source of information, and present your argument at the most opportune time. In addition to these elements, you should also be mindful of the word choice and tone so that you are presenting a persuasive argument that is also constructive and conveys the appropriate tone for your intended audience, message, and purpose.

Figure 2.3.1 *Using the rhetorical appeals to convince an audience [Image description]*

Avoiding Ad-Speak

"Ad-speak" refers to the kind of language often used in advertisements. Its aim is to convince consumers to buy something, whether they need it or not, hopefully without thinking too much about it. Because we hear this kind of rhetoric all the time, it easily becomes habit to use it ourselves. We must break this habit when communicating in professional contexts.

Ad-Speak tends to use strategies such as

- Emotional manipulation
- Logical fallacies
- Hyperbole, exaggeration, or dishonesty
- Vague claims
- Incomplete or cherry-picked data
- Biased viewpoints
- Hired actors rather than professionals or experts as spokespeople.

As a student in a professionalizing program learning the specialized skills and developing the sense of social obligation needed to become a trusted professional, you should avoid using "sensational" language characteristic of marketing languge. Instead, when trying to persuade your reader, make sure you use **quantifiable, measurable descriptors** and objective language in your writing. You cannot determine how many units of "excellence" something has, or its quantifiable amount of "awesomeness," "fantastic-ness," or "extraordinariness." Describing something as "incredible" literally means it's unbelievable. So avoid using these kinds of words shown in **Figure 2.3.2**.

Figure 2.3.2 *Ad-Speak Word Cloud.*

Find measurable terms like "efficiency" (in time or energy use), "effectiveness" at fulfilling a specific task, measurable benefits and/or costs, or even "popularity" as measured by a survey.

Communicating Ethically

In professional writing, communicating ethically is critically important. Ethical communications involves communicating from a place of accountability, responsibility, integrity, and values. If you are communicating ethically, you are demonstrating respect for your reader, the organizations you work for and with, and the culture and context within which you work. You also foster fairness and trust through honesty. Failure to maintain integrity and ethics can result in consequences ranging from damage to reputation, loss of work, lawsuits, criminal charges, and even tragic loss of life.

This is precisely why many professional associations have guidelines that govern the ethical behavior of their membership. Two such documents that may be relevant to you are the Faculty of Engineering's "Standards for Professional Behavior" (.pdf) and the Association of Professional Engineers and Geoscientists of BC APEGBC Code-of-Ethics (.pdf). For example, take note of the portions of the APEGBC Code of Ethics that relate specifically to ethical communication.

"Members and licensees shall act at all times with fairness, courtesy and good faith to their associates, employers, employees and clients, and with fidelity to the public needs. They shall uphold the values of truth, honesty and trustworthiness and safeguard human life and welfare and the environment…. Members and licencees shall:

- Provide an opinion on a professional subject only when it is founded upon adequate knowledge and honest conviction;
- Conduct themselves with fairness, courtesy and good faith towards clients, colleagues and others, give credit where it is due and accept, as well as give, honest and fair professional comment;
- Present clearly to employers and clients the possible consequences if professional decisions or judgments are overruled or disregarded;
- Extend public knowledge and appreciation of engineering and geoscience and protect the profession from misrepresentation and misunderstanding."

It is important to become familiar with these standards of practice, and to consider how they impact communication practices. Remember that you are communicating in a professional context, and that comes with responsibility. Consider the different rhetorical situations diagrammed in **Figure 2.3.3**, one for a marketer and one for an engineer.

Figure 2.3.3 *Comparison of the rhetorical situation for a marketer vs. an engineer.* [Image Description]

Clearly, there may be some overlap, but there will also be significant differences based on the needs and expectations of the audience and the kind of message being delivered. We hear marketing language so often that it is easy to fall into the habit of using it, even when it's not appropriate. Make sure you are not using "ad-speak" when trying to persuade in a professional context.

Image descriptions

Figure 2.3.1 image description:

Use rhetorical appeals to convince your audience of a claim or recommendation you've made or a position you've taken. From there, you can support your claim using different types of appeals or address and refute opposing ideas.

To support the claim, position, or recommendation, you can use different types of appeals:

- Logical appeals: Use logical reasoning, supporting facts and statistics.
- Emotional appeals: Appeal to sympathy, humour, shared values, evoke pride, anger, guilt, or outrage, etc.
- Credibility appeals: Demonstrate that you are qualified, experienced, reliable, and an unbiased source of information.
- Timing and Decorum.
- Use a combination of appeals to win both "hearts and minds" as well as trust, and deliver your message at the time in the most effective way.

When addressing and/or refuting opposing ideas, it's okay to concede where appropriate. Conceding strengthens credibility appeal by making you seem fair-minded and unbiased. You may need to draw on credibility appeals to show that you are qualified, experienced, and a reliable, unbiased source of information.

Supporting your position using different types of appeals and addressing opposing ideas will allow you to convince your audience.

[Return to Figure 2.3.1]

Figure 2.3.3 image description:

When the marketer is the author, their audience is the consumer and their message is information about the product. When the engineer is the author, their audience could be a client or colleague, and their message is information about the design. There may be some overlap between the messages of the marketer and the engineer.

[Return to Figure 2.3.3]

COMPANION MATERIALS FOR

Presenting as a team

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11 Tips for presenting at a conference

Print this page

Brian Campbell
Publication date: 2014 | Updated 2019

How to deliver an effective conference presentation (and beat those presenting nerves).

Presenting at a conference is a core part of scientific communication for any researcher or academic. Finding the right conference with the right audience and successfully communicating your latest findings is a great way to enhance your career prospects and, in turn, learn about the newest developments in your research field.

Before we jump in, an important note on false conferences. There has been a growth in the number of predatory conferences in recent years, so before you register to attend and present your work at any conference, familiarise yourself with ways to spot a predatory conference from a legitimate one.

Developing a conference presentation is no different to developing any other presentation – you need to be well prepared, consistent throughout and ensure you're able to resonate with your audience.

One of the biggest challenges in giving a good presentation is managing your nerves. Even the most experienced and respected speakers and practitioners get a bundle of nerves before they start, so you're in good company. The good news is that the techniques of an effective presenter can be practised. So how can this be accomplished? Here are 11 tips that will help you give an effective conference presentation.

1. Don't touch that slide deck just yet

The first thing you need to know about creating an effective conference presentation is not to dive head first into your slides.

It's hard to beat the feeling of getting an email letting you know that the proposal you worked tirelessly on for a conference has been accepted. Finding out that your work has been well received by a committee can mean a huge amount, especially when you're driven by your passion for it, like the majority of researchers out there.

So it's super easy to just start adding slide after slide to your presentation. When I first presented at a conference, I ended up with 40 slides for a 15-minute presentation. I was lucky enough to be working with some more experienced researchers that reeled in my confusing and inconsistent slides.

I started again and made a clear outline first. I simply sketched it out, slide by slide and got back into a flow. But this time it was in a much more controlled manner. Take your time and make a strong outline to keep you on track. Use checklists to keep you on the right road.

2. Build your presentation within time constraints

Ensuring your timing is right is so important when presenting at a conference. If you have ten minutes to present, prepare ten minutes of material. No more. If you don't practice your timing, you may not get a chance to highlight your findings and recommendations – the most important part.

In my experience conference organisers are usually quite clear about how much time you have allocated. The best presenters know exactly how much time they have to work with, then they tailor their presentation to fit the time and keep an eye on the time throughout.

And if you are running out of time, stop. Jump past a couple of slides if you need to make one last point.

3. Use visuals to illuminate, not obscure

Images are key elements to any presentation. Whether it's a pie chart to show percentages, or a strong image to convey a point, visuals can be much more effective than words. They help reinforce or complement the ideas or points you're trying to get across. Your audience may be able to understand your message a little easier when it's presented with visuals that relate to it.

But remember to keep your visuals clean and simple. Some of the worst conference presentations I've seen are ones with complex imagery that forces the audience to try and figure out how the image and the speaker's point are related.

4. Aim for simplicity and consistency

Don't be afraid of using some text and bullet points if you need to make a point that isn't easy to communicate visually or if you're discussing steps or sequences.

But use them to communicate your point to the audience, not as a prompt for what you want to say. That's what your speaker notes are for. You want your audience to listen to you instead of reading from your slides, so less is more in terms of the text on the slides.

Inconsistency in slides is a subtle thing but can take away from a presentation very easily. While slides with different colours may look nice, they may be distracting to your audience. Use a consistent template with the same fonts to make it easier for your audience to follow along. And remember, your audience will view your conference presentation from a distance, so use large clear fonts and as few words as possible in your slides.

5. Know your research audience

One of the most common mistakes I have seen being made by conference presenters is presenting a coastal of people with information they already have. A great way to make this mistake is spending the majority of your presentation going over the existing literature and giving background information on your work.

Just like when you're in the audience at a conference, researchers are there to learn about your new and exciting research, not to hear a summary of old work. The worst speakers assume that the audience doesn't know anything and need educating.

Before you begin speaking to a group, find out what they already know and where they are up to with your topic. It's not easy to get details on all delegates but you will know the primary sessions and whatever you have remembered with before this. Most conferences use mobile apps now, and these are a great way to get an insight to exactly who is attending the conference and what their specialty topics are from the programme.

This can give you a good idea of how much background you need to give so that your key presentation points will make sense. A good rule of thumb is that if you're giving a 15-minute presentation, by the 6th minute you should be discussing your data or case study.

6. Rehearse your presentation

I shouldn't even need to include this on the list, but so many people fail to do enough of this. Rehearsing is crucial to making you feel comfortable with every word you are going to say. Rehearse your paper aloud in private and in front of a friend. This can feel a bit embarrassing, but reading it through in your head never corresponds to the time it takes to read it aloud in public. The more times you say the words aloud, the more you will be familiar with it. And if you are familiar with what you're saying, your confidence in your conference presentation will increase.

When I'm practicing for a conference presenting slot, I rehearse out loud in my bedroom. It feels strange for 6 weeks. If you're feeling self-conscious about this (or don't want your housemates to overhear) you could play some music at the same time.

Another strategy that works well is recording yourself. This lets you see where you're doing well and where you need to improve. And if being recorded makes you feel under pressure, this helps mimic the actual feelings you'll have while presenting in front of a real live audience. So you'll get a good idea for how you will perform on the day.

After I've recorded myself, I usually ask a friend or colleague to listen and be critical of my efforts. Getting grilled beforehand really helps ease any presenting nerves or anxiety you will get if you're unlucky enough to get grilled after your presentation.

7. Prepare, prepare, prepare

Preparation for anything is key, especially for conference presentations. You've prepared enough to find the right conference, and to submit a proposal worthy of acceptance, now you need to prepare to present it.

Know your slides inside-out. You should use them as a guide for your presentation, not an autocue.

Think about your clothing. Wear something that makes you feel comfortable when facing your audience. If you're not sure what clothes are appropriate, check the dress code with the organisers or with colleagues.

Conference session rooms can get stuffy, so if you're someone who sweats when they're nervous, choose clothing that won't show it. And don't wear something that's awkward and restrictive, even if you think it will project a confident image. If you're not comfortable, you won't look or feel confident.

Try to get a good night's sleep before your presentation; everything looks better and more manageable when you're well rested.

8. Back up your backup

A good way to think about your presentation technology requirements is this: any tech you want to use can and will fail. It's not beyond the realms of possibility for your memory card or flash drive not to work when the big moment comes. Or for your laptop to decide to reboot. Or for the conference presentation facilities to fail.

Arm yourself with a back-up plan so you aren't left stranded if things go awry. As well as following the conference instructions to submit your presentation online or at their drop-off desk, copy your slides to an online deck service and upload a copy of your presentation to Dropbox. Then email yourself any links you need so they're within arms reach if you need them. Take no chances.

And if you have any specific audio-visual requirements, make them known to the conference organiser well in advance. If they don't ask, tell them anyway. Never assume that they'll just know. Not all conference venues can accommodate the latest technology.

9. Get to know the presenting space

One thing presenters often forget to do before starting a presentation is scoping out the room they'll be speaking in. If you get the opportunity, get down to the room where you'll be presenting ahead of time and check it out. This will save you from the last-minute panic of running across an unfamiliar campus, trying to find the room you're supposed to be in.

Most rooms will be kitted out with everything you need to present, but there's no harm in making sure all the equipment you need is there and works. Take no risks and you'll eliminate nasty last-minute surprises.

Get comfortable with the presentation area, walk around it until you feel familiar with the environment in the room. This will save you the shock of unexpectedly being faced with a targetting room. Bring your set of notes with you, and make sure you can read them in the lighting conditions in the room. Don't be afraid to ask for what you need – if there are open windows that are bothering you, ask for them to be closed.

10. Use body language to your advantage

Body language has an important role in presentations, especially at academic conferences. There are usually a lot of facts and findings to be highlighted in a conference presentation, and you need to use all the presenting tools available to you to remain interesting and effective throughout. Your gestures, tone of voice and positivity can be seen through your body language and may determine how engaged your audience is.

When you're speaking, a few body language tips can help improve your rapport with your audience. For your audience to engage, it's important that they can see you and that you look at them and make eye contact. Try to spread your gaze, rather than staring at one person. And avoid focusing intently on your laptop screen, your notes, or the floor. This can give the impression that you're nervous or uninterested, and can also prevent you from projecting your voice clearly.

If possible, don't stand behind a lectern or hold any notes. Instead, keep a straight, relaxed, open posture, and feel free to be comfortable with the full stage and move around the stage a little as you speak.

The great presenters use gestures to emphasise their points and to highlight their visual material to guide the audience's attention. When you see a speaker rooted rigidly in the spot and without positive body language the presentation loses a lot of its emphasis. Avoid other distracting movements, such as repeatedly putting your hands in and out of your pockets, jingling coins in your pocket, or fiddling with pens, clothing, or props such as laser pointers.

11. Encourage questions and discussion

If you manage your time well, you'll have sufficient time left for questions and an open discussion after your conference presentation. Experts love questions, but don't worry if there aren't any. If your audience is reluctant to ask questions, a good session chair will usually pose a question. Presentation questions are a great thing. They give you a chance to elaborate on something that wasn't clear or address the topic that everyone wants to know but you forgot to include.

Answering questions can be nerve-wracking because of the fear that you might not be able to answer them. But when the audience is asking questions, it's generally out of genuine interest, not to trip you up, so see it as a good opportunity to explore how you can expand your work.

Through the majority of questions in a conference Q&A session are fairly benign, like me, you could find yourself at the end of a grilling (perhaps from someone who's research you've had the temerity to challenge) after you present at a conference. If you think this might happen to you, it's worth doing some reading on how to respond to destructive criticism from peers.

And if you're feeling nervous about facing tough questions, here's something that might help: if you're attending with someone you know (and trust), ask them to ask you a question. Some people even like to give them in advance what the question will be. This can simply help get the ball rolling and boost your confidence.

And finally, a trick I learnt from an experienced researcher is to keep a notebook and pen handy and to make notes of the good questions to reflect on later.

Presenting skills are for life

Once you've mastered the tips above, you'll be all set to give a great conference presentation. And the more you do, the easier they'll get. Until you'll reach a point when you can't remember how nervous they used to make you.

One final note on audience size: never take it personally. Some of the best papers out there were presented to small audiences. Nobody ever asks how many people were in the audience, and you don't have to state it on your academic CV. No matter what size the audience, a great presentation is a great presentation.

Brian Campbell
Brian attends conference conferences on frequent travel, recipes entertaining, his baby, Kathleen, playing his trusted amount of sport, and being widely complained of pretty generally. Other crazes the period (hamster), Personally, he worked as the publisher of an international entrepreneurial tax research conference.

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20 Things that Great Presenting Teams Ask Before They Open their Mouth

Presenting as a team can showcase your talent -- or make you look unprofessional and uncoordinated. Here's how to make a team presentation work for you.

BY DEBORAH GRAYSON RIEGEL, KEYNOTE SPEAKER AND LEADERSHIP CONSULTANT @DEBORAHGRIEGEL

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"The whole presentation is an hour, but I am only really 'on' for 10 minutes."

"I only have to know my part. The other guys know the rest of it."

"Which one of us is taking questions? We'll figure it out -- you know, keep it loose..."

140

You might think that having two or three other colleagues to co-lead your presentation, pitch or proposal with can cut the preparation and practice down significantly for each of you. You might feel a sense of relief that others can swoop in and rescue you if you get sick, sweaty or stuck. You might believe that the less speaking time you have, the less responsibility you hold for your overall success

Yes, you might feel all of that – but unless you have planned, prepared and practiced as a team – you would be wrong. Whether you're making a VC pitch, sharing your recommendations with the board, or selling your newest products or services to a customer, presenting as a team can be significantly more difficult to sound concise, coordinated and cohesive than going it alone.

In 25 years of coaching individuals and teams to make more persuasive presentations, I've found that group presentations tend to fall into the trap of creating a feeling of shared accountability ("we're all in this together") that translates into a reality of no accountability ("I'm sure someone else will test that the A/V set up is working.") This means that core elements of presentation planning, design and delivery often fall through the cracks, resulting in a mishmash of uncoordinated -and sometimes competing -objectives, repeated or missing information, wildly different styles in graphics, and the likelihood that the presentation will run significantly under- or over-time. Add to that the feelings of frustration and resentment that people working in teams often feel about carrying more weight than their partners, and a team presentation is often a recipe for disaster.

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But it doesn't have to be. A team presentation can look and sound highly professional and polished. Furthermore, it can serve as a model for the level of coordination, collaboration and teamwork that you want your prospects and clients to associate with you and your company. How does that happen? By sitting down with your team to ask and answer these 20 questions before anyone picks up a pen, a mouse, or a mic.

1. Who is accountable for this presentation overall (the person who gets to make final decisions and have veto power)?

2. Who is responsible for which part in terms of content vs. design?

3. Who will "knit" the parts of the presentation together so it looks and sounds like a consistent and cohesive whole?

4. Who do we need to work with outside of this group to give us objective insight and feedback?

5. When is each part due and who will keep us on schedule?

6. When will we practice delivering as a team and how much time will we need for that?

7. Who is charge of checking the AV before we present? Who is in charge of running it as we present?

8. How will each presenter be introduced to the audience on the day of the presentation?

9. Where should the team members stand while the others are presenting?

10. What should the non-speaking team members be doing/not doing when they're not "on"?

11. How will we keep track of our time in each section, for each speaker, and overall during the presentation?

12. Who is taking notes/writing flipcharts/distributing materials?

13. Do we want to share one microphone or do we each need one? What kind?

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How to Overcome Your Fear of Speaking Up in Meetings

by Tijs Besieux, Amy C. Edmondson, and Femke de Vries

June 11, 2021

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Summary. If you find it difficult to speak up during virtual meetings, you're not alone. You might feel your ideas are still half-baked and won't be seen as valuable. Or, perhaps, you joined the company remotely and feel reserved around your new teammates or senior colleagues.... **more**

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Do you find it difficult to speak up during virtual meetings? If so, you're not alone. Many factors contribute.

1) It's harder to read physical and social cues. In-person, it was easier to figure out when voicing your opinion was welcome and appropriate — someone might lean towards you or gesture at you to invite a response. But noticing these expressions onscreen is difficult, and even impossible on a very big team.

2) If you're a junior employee or someone who joined the company remotely and are still settling in, you may feel especially reserved around your new teammates or senior colleagues. Hierarchy can be intimidating. You don't want to come across as uninformed or foolish to bosses or clients, or you may feel that someone more seasoned than you will take your suggestions as personal critiques.

3) Lastly — and this happens in person, too — you might feel your ideas are still half-baked and won't be seen as valuable. This often occurs when you're asked to brainstorm on the spot and there is less time to make a well-formed contribution.

Whatever the reason, know that we all struggle to speak up at times, no matter what point we are at in our careers. That said, finding the courage to do so is critical to your success, as well as to the success of your team and your organization. The quality of your collective decisions are driven by the diversity of your experiences and expertise — and if you stay silent, your unique perspective will never be considered when making them.

To be more productive in your next virtual meetings, shift your mindset around what it means to speak up — for you and for everyone else. We propose three ways to do this:

Shift 1: From "My idea may be incomplete" to "It could be the source of someone else's breakthrough."

Research on self-censorship finds that people refrain from speaking up for various reasons. Employees remain silent because they:

- Fear being ostracized
- Don't want to be embarrassed
- Want to avoid negative remarks
- Feel like speaking up is inappropriate

For these reasons, people often decide to hold back an idea that is not "bulletproof" yet, something that may be happening even more in virtual meetings where people are highly aware of time limits. Microsoft Teams, for instance, informs participants that a meeting "will end in five minutes." These reminders are meant to help leaders allocate time to different items on the agenda, but they can also increase the threshold for speaking up and inhibit people from sharing incomplete ideas or rough drafts of their thinking.

Shift your mindset: Recognize that your half-baked idea could be the first step in a team breakthrough. Think of it as a suggestion that the rest of the team can build on. For example, if you propose to gather more user feedback on a prototype, it could lead to a pivot in terms of what the final product looks like.

Sometimes taking an unknown path on a hike leads to a mesmerizing panorama that could have been easily missed. Remind yourself that great ideas are generated the same way. Incomplete ideas related to the meeting's purpose are not a waste of time. In fact, they may end up helping your team advance from idea to execution.

Shift 2: From "It's probably not my place to speak up" to "Silence is not in the best interest of the team."

Young people are often reluctant to share ideas because they feel like they are not in a position to do so. You might think: "I don't have enough experience to make this point," or, "I'm so new to this," but you should never underestimate the value that your perspective brings to the table.

Consider this example from one of our clients, Lilli. During a brainstorming session on how to improve the quality of meetings, everyone got a chance to share their ideas. Lilli, a junior colleague at the organization, was initially hesitant because she wasn't sure if she could influence the decision. But thinking about how her idea could impact everyone on the team, she decided to speak up. She shared that she recently read an article about how Amazon starts executive meetings by reading a six-page memo in silence for 30 minutes to get all meeting participants on the same page.

This meeting style was completely new to her team members, and they responded with amazement, hesitation, and worries. The "memo meeting style" became a focal point of the brainstorm. In the end, the group decided that this new method wouldn't work for every meeting, but surely could be a promising approach for some. Now, "memo-based meetings" are a common practice at Lilli's firm, and have been evaluated as highly effective.

Lilli's decision compass was very straightforward: Maybe everyone in the room knew about the meeting style she was presenting. Maybe not. And if the latter was true, then at least she was providing an alternative approach that enriched the group's decision making, because people would be better informed. If Lilli remained silent, her teammates would have missed out on a vital piece of information that ultimately strengthened their choice.

Shift your mindset: Reed Hastings, co-founder and CEO of Netflix puts it like this: "We now say that it is disloyal to Netflix when you disagree with an idea and do not express disagreement. By withholding your opinion, you are implicitly choosing not to help the company."

For your next meeting, go in with this mindset. If you believe you may have an opinion or piece of information that could be material to the success of the project or the organization, say it. If you are someone lower in the hierarchy, follow these three rules of thumb:

1. Make sure your idea is relevant to the group, not just one individual. In the case of the latter, book a one-on-one with that person and talk about your idea then.

2. If you plan to disagree, offer an alternative solution or constructive criticism. Don't disagree with an intent to insult, but with an intent to support.
3. Aim to strengthen the discussion. What you say should be relevant to the goal of the meeting in a broad sense. Meandering about the latest disruption in Silicon Valley might be an interesting topic but is probably not on-topic during an in-depth dialogue on how to improve the logistics department of a retailer you work for.

Shift 3: From "I want to sound intelligent" to "This is really about the collective intelligence of my team so we can all succeed."

"Teams with 60% stars outperform those with 80% or more stars. That's the evidence from Wall Street analysts, World Cup soccer qualifying matches, and NBA basketball," says Wharton Professor Adam Grant. Contrary to popular belief, most Nobel prize winners are not isolated loners who came up with brilliant ideas all by themselves.

Research on collective intelligence demonstrates that decision-quality is driven by the joint intelligence of the group — not by the most intelligent group member. When you speak up, whether it's based on expertise or experience or just a wild idea, your participation increases collective intelligence and hence the decision-making quality of your team.

Shift your mindset: Think of your next virtual meeting as a puzzle that everyone is there to solve. Each team member holds unique pieces to that puzzle, based on their different expertise and experiences. With this framing in mind, will you still hold back your ideas? When you speak up in a meeting you are not

trying to stand out but rather to share and help process as much on-topic information as you can. Your piece of the puzzle might be really small, but it might just help complete the team's puzzle.

Now, here's how to actually speak up.

A mindset shift is only one part of the problem. It must be followed by speaking up and being heard. Maybe you want to speak up but, in the moment, you forget what you want to say. Or you're an introvert who'd rather write an email with your ideas. Or maybe there are just too many senior folks in the meeting, and you don't know when it's appropriate to jump in.

Let's take a look at a few ways you can make yourself heard.

Prepare your nudge: Think of one on-topic question that you want to see answered during the meeting and write it on a post-it. Then, stick it on your computer screen. The post-it is a kind nudge, inviting you to speak up. Also, in case you get "cold-called" you have at least one thoughtful question to advance the discussion.

Rehearse your introduction: How you introduce yourself at the beginning of a meeting lets people know how you can contribute and how involved you'd like to be.

Don't say: "Hi, I'm Haruto, and I'm happy to be here."

Do say: "Hi, I'm Haruto. Thank you for inviting me to this meeting. I look forward to sharing my initial thoughts and ideas for this project based on a design-thinking course I recently took."

Use the chat functions: If you're not comfortable speaking, use the chat window to your advantage. Plenty of people use the chat function on WebEx or Zoom to first make themselves "seen" and then "heard." When someone notices your helpful question, they'll be sure to ask you to elaborate and build on your idea.

Find your window: Don't hesitate to react fast when someone deliberately pauses. Research on turn-taking behavior shows that the person who is currently speaking is likely to resume speaking after a 0.5 second pause because the speaker feels that others had plenty of time to respond. When you see that window, unmute yourself and share your idea. You could say, "I'm going to quickly jump in to talk about...."

Raise your hand: If you can't find a window to make your point, try using emojis (applaud or give praise) along with the raised hand emoji to draw attention. That will show the speaker that you're engaged, you heard them, and you would like to contribute.

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Show that you're engaged: This is easier in virtual meetings with fewer people, when you don't need to scroll to see all of the participants. Avoid turning into a statue during the call. Use non-verbal communication to respond to what people are saying and signal that you're present. Give a thumbs up when someone

shares an interesting thought or use your facial expression to demonstrate surprise when someone says something that makes you curious. Non-verbal behaviors make speaking up feel more natural.

Show appreciation when someone invites you to contribute. Appreciation builds stronger relationships. Say: "Thanks Julia for inviting me to share my two cents. I think we can really advance this challenge if everyone gives input based on our own experience and expertise." In this case, Julia receives praise for inviting others to speak up, and you help to establish a norm where sharing ideas and perspectives is welcomed and expected.

Simply put, speaking up is good for you and your team. So in your next meeting, use these tips and give it a shot. Who knows, your two cents could change the face of a new product!

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FV

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Recommended For You

How to Speak Up in a Meeting, and When to Hold Back

Speaking Up in Meetings: Our Favorite Reads

Christine vs. Work: How to Speak Up in Meetings

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Raechel Duplain
Group Manager, Solutions Marketing

Raechel Duplain is an experienced content, marketing, and business professional at Podium, the premiere marketing and communications platform for local businesses.

How to Politely Say No to Customers: 11 Tips and Steps

Raechel Duplain
Group Manager, Solutions Marketing

Raechel Duplain is an experienced content, marketing, and business professional at Podium, the premiere marketing and communications platform for local businesses.

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While "the customer is always right" is nice in theory, sometimes you have to say no to customers. Here's how to do it.

Mar 20, 2023 9 min. read

Table Of Contents (4 sections)

Business owners are used to agreeing with customers and working as hard as they can to meet and satisfy customers' needs. The customer is always right, right? However, sometimes, a customer will ask you for something your business can't provide.

When this happens, you need to know **how to say no** to customers in a positive way. Doing so will let you maintain a healthy, strong relationship with your customers. The following tips on how to say no to customers will help you conduct a straightforward conversation that allows you say no without hurting the customer-business relationship.

When to Say No to Customers

Before exploring how to say no to a client, it helps to understand *when* you may need to do so. There are various situations when, as a manager or business owner, you may need to say no to a client. Sometimes customers have expectations that you simply can't fill.

The following are some situations when you will find yourself saying no to customers.

When the Customer Request Goes Against Your Company Policy

Every company should have policies in place to protect them against certain customer requests. Remember that others will want the same treatment if you go out of your way for a single client. Following set policies prevents this problem.

So, if a request violates company policy, use one of the nice ways to say no in this guide. But if it is within your policy and will improve the customer experience, use your best judgment and consider following through.

When the Customer's Desires Are Not Realistic

One of the most common situations in which you'll need to know how to say no to customers is if the client has unrealistic expectations. For example, imagine you sell software and just made major upgrades. A client asks you to revert to the previous version because they don't like the current one. You simply can't return the functionality where it was before.

A farther-reaching example will be if a client asks for a massive discount on a product or service. This wouldn't be practical, as it would affect your bottom line and maybe even turn the product into a loss.

When the Customer Asks for Something That's Not Included in What They Acquired

Asking for something not included in the initial purchase is a specific type of unrealistic request. No company can continually give freebies or upgrades without hurting its bottom line. You set your prices for a reason.

Of course, there may be situations where you will want to say yes if a customer asks for something extra. However, you should have clear policies as to when you can make such concessions. Use your knowledge of the best ways to say no if an exception doesn't apply.

When the Customer Wants to Go Beyond Customer-Business Boundaries

Any time the customer makes a request that goes beyond customer-business boundaries, you should strongly consider saying no. An example could be asking for your personal number or inviting you to a friendly outing instead of a business meeting.

Depending on your industry, the lines between business and free time may blur, such as in industries with client dinners as part of the **client journey**. So, using your best judgment when saying no to customers is the right move.

When a Customer Becomes Rude, Hostile, or Abusive

Your customer-business boundaries should also ensure a safe, non-threatening workplace. If the customer becomes hostile, threatening, or uses explicit language, use your skills of how to say no to a client. You may even want to remove angry customers as clients entirely from your business premises.

How to Say No to a Client: 11 Tips

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It can incredibly challenging to come up with nice ways to say no. After all, you don't want to negatively affect your relationship with the client. But it is possible to say no without hurting your relationship. In fact, knowing how to say no to customers in a positive way is a crucial part of customer management and customer relationships.

The following tips will help you come up with the perfect way to say no, and if you need more help, look at our how to say no to customers in a positive way template below.

1. Thank Them When Responding

Set the tone of your "no" by starting with a thank you. Specifically, thank customers for their business and the trust they put in your company. Making a genuine statement of gratitude will soften the blow of the refusal. Try to avoid seeming scripted, even if you are using a template.

2. Be Honest

Always be honest when talking to customers, whether saying you will share an idea with the right team, you have plans to implement the

service in the future, or how an alternative will work. It's always better to say "no" than to disappoint or mislead customers. Not being honest can permanently ruin your customer-business relationship and hurt your overall reputation.

3. Reframe the "No" and Use Positive Language

With some skill, you can reframe the "no" from bad news to something good using positive language. For instance, a customer wants to download chat conversations from your software. Instead of starting with "You can't do that, but..." you can reframe it into "For security reasons, we don't store chat transcripts on our company servers."

You can also use this reframing when **offering an alternative**. For example, you could use phrasing such as, "I would be happy to offer you ...".

4. Make Sure to Listen to the Customer

Before you deliver a "no," make sure you understand the customer's

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mention that you will pass the feedback to the appropriate team. Customers will appreciate that their request isn't just being ignored.

7. Be Empathetic

Just like thanking the customer, showing empathy will help soften the blow. You can use phrases such as "I understand" or "I see why." This lets the customer know that you aren't upset with them for asking, but their request is simply something you cannot do.

8. Follow Up with the Customer

If you recommend that the customer see a competitor, be sure to follow up. Following up will prevent you from losing their business and just switching to the competitor. At the very least, it will encourage the customer you to keep in mind as a potential option in the future or when making recommendations. You can do this via email, social media, or any other channel to prevent churn.

9. Explain the Reasons Behind the "No"

Honesty is an important part of how to say no to customers. So, be honest and explain why you have to say "no." Your customer support team will be best prepared to refuse requests when needed and explain why if they understand the reasons for your policy.

10. Ask for Feedback

Gathering customer **feedback** will help you understand why your customer needed the product or service that you couldn't provide. This may help you find a new potential service for your business to offer. At the very least, asking for feedback will show customers you care about their feedback.

11. Promise to Reach Out in the Future When It Is Possible to Fulfill the Request

If you use that feedback to make changes and eventually offer the product or service initially requested, let the customer know. Just send a friendly email mentioning that, thanks to their feedback, you now offer new features that fit their needs. Let them know you are happy to help and encourage them to reach out to your support reps with questions.

How to Say No to Customers in a Positive Way: 3 Templates and Examples

The following "how to say no to customers in a positive way" template options will show you how to put these tips into action. Most of these templates for customer interactions are easily adjustable for various situations and industries.

Example 1: A Customer Requesting a Free Trial Extension

- Customer request: A customer calls requesting an extension on their free product trial – which has already been extended. They claim they didn't have enough time to get to know the product and need another one.
- Response template: "Good day, [Name]! We agree that you should understand the product before you sign up for our service. We only offer two free trials in a row but would be happy to schedule a demonstration to show you the product's features in more detail."

Example 2: A Customer Requesting Something That Goes Against Company Policy

- Customer request: A customer makes a request that goes against your company policy. You need to cushion the "no," explain your reasons, and offer alternative solutions.
- Response template: "We would love to help you, but due to [explanation], our company policies prevent us from providing your request. However, we have several solutions that may fit your needs...".

Example 3: A Customer Requests a Service You Don't Currently Offer

- Customer request: A customer requests a service that your company doesn't currently offer and hasn't yet considered offering. You want to collect feedback to see if this is a good future direction.
- Response template: "While we don't offer that service, we would love to learn more about your processes and how that service fits in. Would you be willing to fill out a brief survey so we can pass your recommendations to our product team?"

How to Deal with Customers

Communicating with customers is challenging. Between all of your clients, it can be confusing to keep track of every conversation, especially when there are too many client messages, including those asking questions and those who don't respond to follow-ups.

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14. What do we do if someone on the team says something incorrect or inaccurate?

15. What do we do if a member of the team chokes or isn't at his or her best?

16. Who will be watching the audience for clues and cues? How will we communicate our "reading of the room" to the rest of the team during the presentation?

17. How will we transition from one speaker to the next? What will we say to hand it over to the next person?

18. How will we divide up the Q&A?

19. Who is the point person on our team for any follow-up needed?

20. How can we support our weakest link and showcase our strongest player?

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7.5 Long Reports - Recommendation Reports and Feasibility Studies

Long reports, such as Feasibility and Recommendation Reports, are most often the final step in a series of documents, often beginning with a **Proposal** and perhaps following a series of **Progress Reports**. The reports in this rather loosely defined category are variously called feasibility reports, recommendation reports, evaluation reports, assessment reports, *etc*. They all do roughly the same thing—provide a careful study of a situation or problem, and often recommend what should be done to improve the situation. There are some subtle differences among these types, and names for them can vary.

Feasibility Reports

A feasibility report studies a situation (for example, a problem or opportunity) and a plan for doing something about it, and then determines whether that plan is "feasible"—whether it is practical in terms of current technology, economics, time frame, social needs and preferences, and so on. The feasibility report answers the question "Should we implement Plan X?" by stating "yes," "no," or sometimes a "maybe" or "under certain conditions." Not only does it indicate whether the idea is feasible, it also provides the data and the reasoning behind that determination; conversely, it might outline the reasons why the idea cannot or should not be implemented, or what obstacles must be overcome before the idea can become feasible. Typical questions addressed in these reports include

- ***Is it possible?*** Can this be done within the allotted budget, time frame, legal and regulatory conditions, and technical capabilities?
- ***Is it financially viable?*** Even if it falls within our budget, *should* we do it? Will it have long term benefits that outweigh costs? Is there a less expensive or financially risky way to achieving the same result? How does it compare to the cost of doing nothing about this situation?
- ***Will it be accepted by the community?*** Will people be in favor of this idea? Will anyone be opposed to it? How much public support is necessary to make this successful? (What kind of stakeholder consultation might be necessary to determine this?)

Recommendation Reports

A recommendation reports starts from a stated need; it offers a selection of solution options, presents a detailed comparative analysis of the options, and then recommends one, some, or none. For example, a company might be looking at grammar-checking software and want a recommendation on which product is the best fit for them. As the report writer on this project, you could study the market for this type of application and recommend one particular product, 2-3 possible products (differing perhaps in their strengths and their weaknesses), or none (maybe none of them are appropriate for the client's specific needs). The recommendation report answers the question "Which option should we choose, and why?"

(or in some cases "Which are the best options?) by recommending Product B, or maybe both Products B and C, or none of the products. These recommendations might arise from questions such as

- What should we do about Problem X?
- What is the best way to provide Function or Service A?
- Should we use Technology X or Technology Y to perform Function Z?

Evaluation Reports

An evaluation report provides a judgment or assessment rather than a yes-no-maybe answer or a recommendation. It provides a studied opinion on the *value* or *worth* of something. For example, for over a year the city of Austin had free bus transportation in an attempt to increase ridership and reduce automobile traffic. Did it work? Was it worthwhile?—These are questions an evaluation report would attempt to answer. This type of report compares a thing to a set of requirements (or criteria) and determines how well it meets those requirements. (And of course, this may result in a recommendation: to continue the project, scrap it, change it, or other possibilities.)

As you can see, these distinctions are rather fine, and they overlap somewhat. In real-world writing, these types often combine; you might see elements of the recommendation report combine with the feasibility report, for example.

Typical Contents of Recommendation and Feasibility Reports

Whatever variety of feasibility or recommendation report you write, whatever name people call it—most of the sections and the organization of those sections are roughly the same.

The structural principle fundamental to this type of report is this: you provide not only your recommendation, choice, or judgment, but also the data, analysis, discussion, and the conclusions leading to it. That way, readers can check your findings, your logic, and your conclusions to make sure your methodology was sound and that they can agree with your recommendation. Your goal is to convince the reader to agree with you by using your careful research, detailed analysis, rhetorical style, and documentation. Since your reader will want to make an evidence-based decision, it is critical that all of your claims and recommendations are supported by sound research and evidence.

The general problem-solving approach for a Recommendation Report entails the steps shown in the example below.

Typical Recommendation Report Elements

1. Identify the **need**	What is the "unsatisfactory situation" that needs to be improved?
2. Identify the **criteria** for responding to the need	What is the overall goal? What are the specific, measurable objectives any solution should achieve? What constraints must any solution adhere to?
3. Determine the solution **options** you will examine	Define the scope of your approach to the problem. Identify the possible courses of action that you will examine in your report. You might include the consequences of simply doing nothing.
4. Study how well each **option** meets the **criteria**	Systematically study each option, and compare how well they meet each of the objectives you have set. Provide a systematic and quantifiable way to compare how well to solution options meet the objectives (weighted objectives chart).
5. Draw **conclusions** based on your analysis	Based on the research presented in your discussion section, sum up your findings and give a comparative evaluation of how well each of the options meets the criteria and addresses the need.
6. Formulate **recommendations** based on your conclusion	Indicate which course of action the reader should take to address the problem, based on your analysis of the data presented in the report.

These steps generally coincide with how you will organize your information. Your report will be divided into several sections that will likely include most or all of the following elements:

1. **INTRODUCTION:** the introduction should clearly indicate the document's purpose. Your introduction will discuss the "unsatisfactory situation" that has given rise to this report, and the requirements that must be met (the **Problem Definition**). Your reader may also need some background. Finally, provide an overview of the contents of the report.
2. **TECHNICAL BACKGROUND:** some recommendation or feasibility reports may require technical discussion in order to make the rest of the report meaningful. The dilemma with this kind of information is whether to put it in a section of its own or to fit it into the comparison sections where it is relevant. For example, a discussion of power and speed of tablet computers is going to necessitate some discussion of RAM, megahertz, and processors. Should you put that in a section that compares the tablets according to power and speed? Should you keep the comparison neat and clean, limited strictly to the comparison and the conclusion? Maybe all the technical background can be pitched in its own section—either toward the front of the report or in an appendix.
3. **REQUIREMENTS AND CRITERIA**: a critical part of feasibility and recommendation reports is the discussion of the requirements (objectives and constraints) you'll use to reach the final decision or recommendation. Here are some examples:
    - If you're trying to recommend a tablet computer for use by employees, your

requirements are likely to involve size, cost, hard-disk storage, display quality, durability, and battery function.

- If you're looking into the feasibility of providing every student at Austin Community College with an ID on the ACC computer network, you'd need define the basic requirements of such a program—what it would be expected to accomplish, problems that it would have to avoid, and so on.
- If you're evaluating the recent program of free bus transportation in Austin, you'd need to know what was expected of the program and then compare its actual results to those requirements.

Requirements can be defined in several ways:

Numerical Values: many requirements are stated as maximum or minimum numerical values. For example, there may be a cost requirement—the tablet should cost no more than $900.

Yes/no Values: some requirements are simply a yes-no question. Does the tablet come equipped with Bluetooth? Is the car equipped with voice recognition?

Ratings Values: in some cases, key considerations cannot be handled either with numerical values or yes/no values. For example, your organization might want a tablet that has an ease-of-use rating of at least "good" by some nationally accepted ratings group. Or you may have to assign ratings yourself.

The requirements section should also discuss how important the individual requirements are in relation to each other. Picture the typical situation where no one option is best in all categories of comparison. One option is cheaper; another has more functions; one has better ease-of-use ratings; another is known to be more durable. Set up your requirements so that they dictate a "winner" from situation where there is no obvious winner. A "weighted objectives chart" or "Decision Matrix" is often used in these cases.

4. **DISCUSSION OF SOLUTION OPTIONS:** In certain kinds of feasibility or recommendation reports, you'll need to explain how you narrowed the field of choices down to the ones your report focuses on. Often, this follows right after the discussion of the requirements. Your basic requirements may well narrow the field down for you. But there may be other considerations that disqualify other options—explain these as well.

   Additionally, you may need to provide brief **technical descriptions** of the options themselves. Don't confuse this with the comparison that comes up in the next section. In this description section, you provide a general discussion of the options so that readers will know something about them. The discussion at this stage is not comparative. It's just a general orientation to the options presented in an objective way. In the tablets example, you might want to give some brief, general specifications on each model about to be compared.

5. **COMPARATIVE ANALYSIS:** one of the most important parts of a feasibility or recommendation report is the comparison of the options. Remember that you include this section so that readers can follow the logic of your analysis and come up with different conclusions if they desire. This

comparison can be structured using a "block" (whole-to-whole) approach, or an "alternating" (point-by-point) approach.

Block Approach	Alternating (Point-by-Point) Approach
All the information about Option 1	Compare all Options according to Criteria A (cost)
All the information about Option 2	Compare all Options according to Criteria B (functionality)
All the information about Option 3	Compare all options according to Criteria C (ease of use)
Direct Comparative Analysis of all three options and Summary of Results	Summary of Results

You might compare 3 solution options (1, 2, and 3) using three criteria for comparison (A, B, and C). If you were comparing tablets, you'd likely use the point-by-point approach, having a section that compared all three options based on cost (criteria A), another section that compared them on battery function, and so on. You *wouldn't* have a section that discussed everything about option 1, another that discussed everything about option 2, and so on. That would not be effective or efficient, because you still have to make direct comparisons somewhere near the end of your discussion (such as in a weighted objectives chart).

Each of these comparative sections should end with a conclusion that sums up the relative strengths and weaknesses of each option and indicates which option is the best choice in that particular category of comparison. Of course, it won't always be easy to state a clear winner—you may have to qualify the conclusions in various ways, providing multiple conclusions for different conditions.

If you were writing an evaluation report, you wouldn't be comparing options. Instead, you'd be comparing the thing being evaluated against the requirements placed upon it and the expectations people had of it. For example, Capital Metro had a program of more than a year of free bus transportation. What was expected of that program? Did the program meet those expectations?

6. **SUMMARY TABLE:** after the individual comparisons, include a summary table (such as a **Weighted Objectives Chart** explained below) that summarizes the conclusions from the comparative analysis section. Some readers are more likely to pay attention to details in a table than in paragraphs; however, you still have to write up a clear summary paragraph of your findings.

7. **CONCLUSIONS:** the conclusions section of a feasibility or recommendation report amalgamates all of the conclusions you have already reached in each of the comparison sections. In this section, you restate the individual conclusions, for example, which model had the best price, which had the best battery function, and so on. You could give a summary of the relative strengths and weakness of each option based on how well they meet the criteria.

This section has to go further. It must untangle all the conflicting conclusions and somehow reach

the final conclusion, which is the one that states which is the best choice. Thus, the conclusion section first lists the *primary conclusions*—the simple, single-category ones. Then it must state *secondary conclusions*—the ones that balance conflicting primary conclusions. For example, if one tablet is the least inexpensive but has poor battery function, but another is the most expensive but has good battery function, which do you choose and why? The secondary conclusion would state the answer to this dilemma.

8. **RECOMMENDATIONS:** the final section of feasibility and recommendation reports states the recommendations which flow directly from your conclusions and directly address the problem outlined in the introduction. These may sometimes be repetitive, but remember that some readers may skip right to the recommendation section. Also, there will be some cases where there may be a best choice but you wouldn't want to recommend it. Early in their history, laptop computers were heavy and unreliable—there may have been one model that was better than the rest, but even it was not worth having. You may want to recommend further research, a pilot project, or a re-design of one of the options discussed.

   The recommendation section should outline what further work needs to be done, based solidly on the information presented previously in the report and responding directly to the needs outlined in the beginning. In some cases, you may need to recommend several ranked options based on different possibilities.

Weighted Objectives Charts

When comparing alternative solutions to see which one best meets the design criteria, you will often use a Weighted Objectives Chart (WOC) or a decision matrix of some kind. In order to evaluate the solution alternatives fairly and in an unbiased way, it is important to devise a way of evaluating the designs *before* they are created, or before you finalize those design alternatives. The criteria that go into a WOC should be based directly on the objectives you defined in your problem definition, and may include additional objectives that will help you measure the effectiveness and desirability of each solution alternative. Then, you build or chose the design alternatives to best fit these criteria.

Creating a weighted objectives chart entails several detailed steps:

1. Determine the objectives you will use to evaluate the design alternatives (base these on the objectives stated in your problem definition). Aim for at least 5 objectives to create a robust set of evaluation criteria
2. Place the objectives in order from most to least important
3. Assign each objective a weight, giving the most important objective the highest weight, and the least important objective receiving the lowest. The combined weights of all objectives should sum to a unity (1, 10, or 100).
4. Create a scoring rubric for each objective, showing how you will assign a "grade" for how well each design meets that criteria. This is usually done using a Likert scale (scale of 1-5 or 1-10), with each value having a specific value or range of values. You will need to determine how you will measure and grade achievement of each objective. These can be quantitative (miles per gallon of fuel consumption) or qualitative (subjective experience of comfort), as

seen in the scoring rubric sample below.

Points	Cost (CND$)	Fuel consumption (m/g)	Comfort level
0	over max budget of $5000	less than 27	very uncomfortable
1	4501 – 5000	27-29	poor comfort level
2	4001 – 4500	30-32	below average comfort
3	3501 – 4000	33-36	average comfort
4	3001 – 3500	37-40	above average comfort
5	3000 or less	more than 40	extremely comfortable

Once you have determined your objectives, ranked and weighted them, and created scoring rubrics for each one, you can place them all in a table that allows you to easily compare each solution. See **Table 7.5.1** for a sample Weighted Objectives Table designed to compare several car purchase options. In the magnitude column, you would enter the actual price, fuel consumption, etc. Under score, enter the score that the magnitude gets in the objective scoring rubric (seen above). To get the "value," multiply your score by the weight. Adding all the values for each option will give you the overall utility value for each option, and show you which one best meets your objectives.

Table 7.5.1 Sample Weighted Objectives table for comparing two car purchase options

Objective	Weight	Measurement	Car A			Car B		
			magnitude	score	value	magnitude	score	value
Cost	30	price range	4299	2	60			
Fuel consumption	25	miles per gallon						
Cost of parts	20	average cost						
Ease of maintenance	15	ease of servicing						
Comfort	10	comfort rating						
					Overall utility value			

Note that the objectives are listed in order from highest to lowest weighted, and all the weights add up to 100. Therefore, if one possible purchase option had a sale price of $4299, you would enter that under the "magnitude;" that would receive a score of 2, based on the scoring rubric; multiply 2 by the weight of 30, and the overall score for that objective is 60.

You can download a fully formatted, blank WOC template in Word here: Weighted Objectives Chart Template

Revision Checklist for Recommendation Reports

As you reread and revise your recommendation report, ensure that you have included all of the sections and elements described below.

Revision Checklist for Recommendation Reports

Document Section	Key Content Elements	Check
Introductory Sections	Indicate the situation and the audience.	
	Discuss the background of the problem or opportunity—what brought about the need for the report? Give technical background if necessary.	
	State requirements—those factors that influence the decision on the choice of options (objectives and constraints).	
	Indicate how the field of options was narrowed to the ones being compared (if relevant).	
	Provide an overview of the contents.	
Discussion Sections	Organize the comparative analysis/discussion of the options using the point-by-point or whole-to-whole approach. Choose the structure that best matches your content and purpose.	
	At the end of each comparative section, state the best choice in terms that point of comparison.	
	Include a summary table, if possible, in which you summarize all the key data in table form.	
Conclusion	Restate all the key conclusions from the Discussion sections.	
	State secondary conclusions, and based them on requirements established at the beginning.	
	State a final conclusion (about the overall feasibility of the idea or about the overall strengths and weaknesses of each option compared).	
Recommendations	Make recommendations for future actions; reiterate how these actions will provide the sought-after benefits outlined in the introduction.	
References	Fully document any sources used in the report.	
Appendices	Add any additional information that has been referred to, but not included in the body of the report.	

This chapter was adapted from David Murrey's "Recommendation and Feasibility Reports" in *Online Technical Writing*, which is licensed under a Creative Commons Attribution 4.0 International License.

COMPANION MATERIALS FOR

Editing for readability & reliability

3.5 Style Tips: Revising to Enhance Readability

Anything that you write is designed to be read. That is its first and foremost purpose. Thus, increasing readability means increasing the functionality of your document in terms of both content and document design—making it "user friendly." If your document is difficult to read because vocabulary, sentence structure, paragraphing, organization, or formatting is unclear, your reader will likely stop reading.

The **Revision Checklist** below offers a step-by-step process for revising your document to achieve a readable style. It incorporates key information fromChapter 2: Professional Style and Chapter 3: Document Design. Implementing this checklist means doing several "passes" over your document, looking at different aspects each time. For example, in your "first pass," review the entire document for overall formatting, content requirements, coherent flow of information, and appropriate tone.

Revision Checklist

1. First Pass: Document-level Review

- Review specifications to ensure that you have included all required content.
- Make sure your title, headings, subheading, and table/figure labels are clear and descriptive. Headings should clearly and efficiently indicate the content of that section; Figure and Table captions should clearly describe the content of the visual.
- Make sure visual elements have appropriate passive space around them.
- Make sure ideas flow in a logical order and explanations come in a timely manner. Make sure visuals illustrate your textual information.
- Write "Reader-Centred" prose: determine the relationship between your purpose in writing and your reader's purpose in reading. Give your readers the information they want and need to get from your document as efficiently as possible.
- Make sure you are using an appropriate tone (neutral, objective, constructive, formal)

2. Second Pass: Paragraph-level Review

- Make sure each paragraph begins with a topic sentence that previews and/or summarizes the content to come.
- Add coherent transitions to link one sentence logically to the next.
- Cut unnecessary or irrelevant information.
- Avoid overly long or short paragraphs (5-10 lines long is a reasonable guideline).

3. Third Pass: Sentence-level Review

- Watch sentence length; consider revising sentences longer than 25 words. Vary the length and structure of sentences.

- Look at the ratio of *verbs*:*number of words per sentence*. Generally, the more verbs/words in the sentence, the better the sentence.
- Use concrete, strong, active verbs – avoid vague, passive, verbs and "is/are/was/were/being" whenever feasible (move the *–tion* and *–ment* words up the verb scale).
- Create a clear Actor/Action relationship (Subject-Verb).
- Verbs like "make" "do" 'have" and "get" have many possible meanings. Try to find more precise ones.
- In general, keep subject and verb close together, and keep verb near the beginning of the sentence.

4. Fourth Pass: Word-level Review

- Use concrete, specific, precise words; avoid vague, abstract, generalizing words.
- Match your vocabulary to your audience: experts can tolerate complex information with a lot of terminology; general readers require simpler, less detailed descriptions/explanations.
- Use clear, plain language rather than pompous diction; write to **express**, not impress.
- Avoid "sound bite" phrases that have no real meaning; use a single word instead of a phrase whenever possible.
- Avoid clichés, colloquial expressions, and slang.
- Use second person (you) pronouns carefully and sparingly.
- Avoid "ad speak" — don't sound like you are "selling" something; use objective, measurable descriptors.

If your document incorporates sources, you will want to do an additional "pass" to make sure that all sources are cited properly and in chronological order in the body text, and that they all cross-reference to your list of references at the end of the document. See Chapter 6: Citing and Documenting in IEEE Style for details.

COMPANION MATERIALS FOR

Appendices

7.1 Correspondence: Text Messages, Emails, Memos, and Letters

Netiquette

Text messaging, emailing, and posting on social media in a professional context requires that you be familiar with "netiquette," or proper etiquette for using the internet. We have all heard the news stories about people who have been fired and companies that have been boycotted for making offensive or inappropriate social media posts. People have even gone to prison for illegal use of private messaging. The digital world may *seem* like a free-for-all, "wild wild west" with no clear rules or regulations; however, this is clearly a dangerous perspective for a professional to take, as the consequences for breaking tacit rules, expectations, and guidelines for professional communications can be very costly.

The way that you represent yourself in writing carries significant weight. Writing in an online environment requires tact, skill, and an awareness that what you write may be there for a very long time and may be seen by people you never considered as your intended audience. From text messages to 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, constructive, and professional.

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 Instagram page or Twitter feed may have been seen by your potential employer, or that insensitive remark in a Facebook post may come back to haunt you later.

Guidelines for Communicating Online

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

- **Know your context**
  - 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.
- **Remember the human**
  - Remember there is a person behind the words; ask for clarification before making judgment
  - Check your tone before you publish; avoid jokes, sarcasm, and irony as these can often be misinterpreted and get "lost in translation" in the online environment
  - Respond to people using their names

    - Remember that culture, age, and 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.
- **Recognize that text is permanent**
    - Be judicious and diplomatic; what you say online may be difficult or even impossible 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) 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; what you heard is not always what was said
    - Ask your supervisor for guidance.*
- **Respect privacy and original ideas**
    - Quote the original author if you are responding with a specific point made by someone else
    - Ask the author of an email for permission before forwarding the communication.

** Sometimes, online behaviour 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.*

For further information on netiquette, check out the following links:

- Business Insider: Email etiquette rules every professional needs to know
- LinkedIn: Why do you need email etiquette

Texting

1

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.

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

Guidelines for Effective Business Texting

If your work situation allows or requires you to communicate via text messages, keep the following tips in mind:

- **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.
- **Use appropriately:** 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.[2] Being in an accident while conducting company business would reflect poorly on your judgment as well as on your employer.

Email

3

Email is familiar to most students and workers. In business, it 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.[4]

Email 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 emails 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 email in which standard paragraphs are used but you choose from a menu of sentences to make the wording suitable for a particular transaction.

Emails may be informal in personal contexts, but business communication requires attention to detail, awareness that your email reflects you and your company, and a professional tone so that it may be forwarded to any third party if needed. Email often serves to exchange information within organizations. Although email 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.

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.

Guidelines for Effective Business Emails

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).

Include a clear, brief, and specific subject line: this helps the recipient understand the essence of the message. For example, "Proposal attached" or "Electrical specs for project Y."

Close with a signature: identify yourself by creating a signature block that automatically contains your name and business contact information.

Avoid abbreviations: an email 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 email should get to the point and conclude in three small paragraphs or fewer.

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 email than to take the time 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 emails 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 email 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 can be considered rude.

Test links: if you include a link, test it to make sure it works.

Email ahead of time if you are going to attach large files: audio and visual files are often quite large; be careful to avoid 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, email or call. Spam filters may have intercepted your message, so your recipient may never have received it.

Tip: add the address of the recipient last (after you have written and proofread your message) to avoid sending prematurely. This will give you time to do a last review of what you've written, make sure links work, make sure you've added the attachment, *etc*., before adding the sender's address and hitting send.

The sample email below demonstrates the principles listed above.

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

Memos

Memoranda, or **memos**, are one of the most versatile document forms used in professional settings. Memos are "in house" documents (sent within an organization) to pass along or request information, outline policies, present short reports, and propose ideas. While they are often used to inform, they can also be persuasive documents. A company or institution typically has its own "in house" style or template that is used for documents such as letters and memos.

Memo Format

Figure 7.1.1 shows a sample of our "in house" memo style (the style we will use for memo assignments written for this class), with annotations pointing out various relevant features. The main formatted portions of a memo are the Logo or Letterhead (optional), the Header Block, and the Message. The attached Memos PowerPoint reviews some of these features in detail.

Figure 7.1.1 *Sample Memo, annotated.* [Image description]

Memo Header Block

The **Header Block** appears at the top left side of your memo, directly underneath the word **MEMO** or **MEMORANDUM** in large, bold, capitalized letters. This section contains detailed information on the recipient, sender, and purpose. It includes the following lines:

- **TO:** give the recipient's full name, and position or title within the organization
- **FROM**: include the sender's (your) full name and position or title
- **DATE**: include the full date on which you sent the memo
- **SUBJECT or RE**: write a brief phrase that concisely describes the main content of your memo.

Place a horizontal line under your header block, and place your message below.

Memo Message

The length of a memo can range from a few short sentences to a multi-page report that includes figures, tables, and appendices. Whatever the length, there is a straightforward organizational principal you should follow. Organize the content of your memo so that it answers the following questions for the reader:

1. **Opening:** Why am I reading this?
2. **Details:** What do I need to know?
3. **Closing:** What am I expected to do now?

Memos are generally very direct and concise. There is no need to start with general introductions before getting to your point. Your readers are colleagues within the same organization, and are likely familiar with the context in which you are writing. The opening sentences of the memo's message should make it clear to the reader whether they have to read this entire memo and why (if the memo is informing me about an elevator that's out of service in a building I never enter, then I don't really have to read any further).

The middle section of the message should give all of the information needed to adequately inform the readers and fulfill the purpose of the memo. Start with the most general information, and then add the more specific facts and details. Make sure there is enough detail to support your purpose, but don't overwhelm your readers with unnecessary details or information that is already well known to them.

The final part of the message indicates what, if any, action is required or requested of the readers. If you are asking your readers to do something, be as courteous as possible, and try to indicate how this action will also benefit them.

For more information on writing memos, check out the memo page on the the **Online Writing Lab** at Purdue University: Parts of a Memo.

Letters

Letters are brief messages sent to recipients that are often outside the organization. They are often printed on letterhead paper that represents the business or organization, and are generally limited to one or two pages. While email and text messages may be used more frequently today, the 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 (compliant letters, for example).

There are many types of letters, and many adaptations in terms of form and content, but this chapter presents the fifteen elements of a traditional block-style letter. Letters may serve to introduce your skills and qualifications to prospective employers (cover letter), deliver important or specific information, provide documentation of an event or decision, or introduce an attached report or long document (letter of transmittal). **Figure 7.1.2** [5]shows a letter of transmittal meant to introduce a technical report to its recipient.

Figure 7.1.2 *Sample letter of transmittal (click image for an accessible PDF).*

Strategies for Effective Letters

A typical letter has 7 main parts:

1. **Letterhead/logo**: Sender's name and return address
2. **The heading:** names the recipient, often including address and date
3. **Salutation**: "Dear _____ " use the recipient's name, if known.
4. **The introduction**: establishes the overall purpose of the letter
5. **The body**: articulates the details of the message
6. **The conclusion:** restates the main point and may include a call to action
7. **The signature line:** sometimes includes the contact information

Keep in mind 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

There are many possible reasons you might write a letter in a professional context. Here is a list of the most common kinds of letters:

Transmittal Letters: when you send a report or some other document, such as a resumé, to an external audience, send it with a cover letter that briefly explains the purpose of the enclosed document and a brief summary. Click the link to download a Letter of Transmittal Template (.docx).

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.

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, such as communicating with suppliers, contractors, partner organizations, clients, government agencies, and so on. For additional examples of professional letters, take a look at the sample letters provided by David McMurrey in his online textbook on technical writing: *Online Technical Writing: Examples, Cases & Models*.

Information in this chapter was adapted from the following source:

"Professional Communications" chapter in *Technical Writing* by Annemarie Hamlin, Chris Rubio, Michele DeSilva. This source is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

Image descriptions

Figure 7.1.1 image description:

Design features of a 1-page memorandum.

- The logo or letterhead is at the top of the page and centred or right-aligned (in this case, it is the University of Victoria letterhead).
- "Memorandum" appears at the top of the page left-aligned in large, bold font.
- The header block (which appears under the "Memorandum" heading) includes a "to," "from," "date," and "subject" in a vertical list. Those values are aligned vertically for readability.
- A dividing line separates the header block from the message.
- The message begins by answering, "Why am I reading this?"
- The body of the message gives the details: ("What do I need to know?")
- There is a table that is nicely formatted. (The table has a caption above the table in bold and italics, column headers are bold and centred, and text is left aligned.)
- A closing paragraph summarizes and indicates what (if any) action is expected of the reader (Answering, "What would you like me to do now?")
- The text of this document uses an appropriate serif body font (Times New Roman)
- There is also a signature (optional)

[Return to Figure 7.1.1]

Notes

1. [Texting image]. [Online]. Available: https://www.flickr.com/photos/13604571@N02/2094946972. CC BY-NC 2.0.
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