

KNOWLES TRAINING INSTITUTE

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# TECHNICAL WRITING COURSE

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## LEARNER'S GUIDE

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# Overview of Technical Writing

## Who is a Technical Writer?

Most professionals require some technical writing skills. In information technology, project managers and analysts write technical documents that must be clear and concise.

A technical writer explains the product to the end user, by creating:

- technical and software manuals
- handbooks
- technical guides
- online help

Pay is good and working conditions are agreeable. It is mentally-stimulating, creative work, and requires someone who is both sociable and well-read. Technical writers do not need to know how to program computers or have more than a general understanding of the technology, but they must have the ability to learn about a new product and then explain it to others.

Those with training in journalism, teaching, and writing can grow to become excellent technical writers by studying the techniques of modern technical communication. Often though, engineers and technicians most familiar with the technology, product, and process can have or develop writing skills to become technical writers.

Technical writers enjoy learning and reading. They find writing comfortable, though they aren't perfect, and typically revise their work many times. They are both creative and orderly. Most importantly, they put themselves in the end user's position.

This introductory course covers only the most universal and important concepts in technical writing. Later courses deal in depth with areas such as business analysis, documentation management, and other advanced topics.

## Types of User Documents

Technical writers prepare documents for different types of users. Typically, there are five basic types of user documents:

- **Description Document** - The functional description document provides information on the system requirements and the services offered. This document should offer a detailed overview of the software. The end-users should be able to decide whether this is the software they are looking for after going through the introductory manual.
- **Installation** - The system installation document is meant for the system administrators; this document should provide information on how to install the system. The system installation document should contain a description of the system files and the hardware configuration required. It should also offer detailed information on how to operate the system, how the configuration dependent files should be customized and how to establish the permanent files.
- **Configuration** - The system configuration document is meant for the system administrators or users. This document provides information on how to configure the system or the software for end-use. You can combine this document with the system installation document depending upon the requirement and the volume of information.
- **User Manual** - The user manual should introduce the audience to that particular system. It should outline the normal functions of the system and should provide instructions on how to get started and how to use the various applications. The instructions should be further illustrated with examples.
- **Systems Reference** - The system reference documentation should provide information on the system facilities, how to use those facilities, list of error messages and how to recover from errors. The system reference manual should be written in a descriptive style.

## What do technical writers do?

When technical writers approach a new piece of technology, they are inwardly observing their own lack of knowledge. As they interact with and learn the software, they identify the information needs of the software users. They must be able to communicate well with

programmers and customers, and extract information from them in a professional and personable manner.

Worldwide, there is a strong demand for technical writers. Overwhelmingly, they use the English language. Software companies require technical and user documentation of their products, and will continue to do so for the foreseeable future.

It's difficult for aspiring technical writers to get "a foot in the door." Most employers are looking for technical knowledge and demonstrated experience. Completing this course, and creating a project portfolio of completed work, will open doors to a career in technical communications.

### **The Essential Skills of a Technical Writer**

A good technical writer requires five important skills or characteristics:

#### **1. Facility with technology**

You must have the potential to grasp technology. You may have a bent towards one of the sciences, and can understand the inner workings of cells or atoms. Or you may be web savvy and know how to interpret code. Or maybe you're just curious about how things work. You can learn technologies you don't understand, if you have the motivation. I personally enjoy learning about complicated systems. This understanding brings a sense of achievement and knowledge that is rewarding at the end of the day.

#### **2. Ability to write clearly**

The essential skill of any technical communicator is to disambiguate. The core job is to study complicated things and explain them clearly. You can't just pass off an explanation without understanding it completely. Writing about something, as opposed to talking about it, requires you to understand it thoroughly. Avoid passive voice and long sentence constructions. Define acronyms and avoid assumptions about what the user knows.

#### **3. Talent in showing ideas graphically**

Show ideas graphically as much as possible. People understand better when you can communicate visually. Images help make your writing clear.

#### 4. Patience in problem-solving/troubleshooting

Unless you have patience, you'll never make it. Much of IT work consists of problem solving. It's amazing how a seemingly impossible problem can be solved with a little patience and persistence.

#### 5. Ability to interact with SMEs (Subject Matter Experts)

Interacting with SMEs is one of the most overlooked skills in technical writing. You must be able to identify and interview people who possess knowledge important to your document. You can't be shy about going after certain people to extract information — and you can't be too proud to ask "dumb technical questions." Much of this interaction can come about if you're lucky enough to simply sit near SMEs.

### **Technical Writing Basics**

The process of developing information products in technical communication begins with ensuring that the nature of the audience and their need for information is clearly identified. From there, the technical communicator researches and structures the content into a framework that can guide the detailed development. As the information product is created, the paramount goal is ensuring that the content can be clearly understood by the intended audience and it provides the information that the audience needs in the most appropriate format.

This means there are always at least three steps in every documentation project:

1. Identify the audience.
2. Research and structure the content.
3. Ensure it is accurate and understood.

### **Climbing Up The Ladder as a Technical Writer**

Technical Writers:

- communicate ideas
- design information
- participate in the product development process
- manage complex documentation projects.

Junior software technical writers are often responsible for communications between the developers and the end-users.

Business writing skills are useful for technical writers. All technical writers must write clearly, and communicate well with specialists. The field of Technical Writing is large and can be hard to define. For this reason these lessons concentrate mostly on technical writing for the software industry.

### **Junior Technical Writers**

- Product brochures, web sites, and other marketing tools that explain the benefits of the software to buyers.
- User Guides, manuals, tutorials, and step-by-step task lists that guide new users learning the software.
- Installation and maintenance guides that show the administrator and experienced user how to configure and troubleshoot the software.

### **Advance Technical Writers**

- Requirement Specifications that document the needs, goals, and environment of the users of the software.
- Design documents that describe the workings and interactions of the system.
- Control documents that communicate project standards, configuration, schedule and work tasks.

- Test cases that detail the required functionality so the software conforms to the specifications.

## **Audience Analysis**

## Writing for the audience

Documentation is a form of support and product marketing for the audience it targets.

Good technical writers have the ability to transfer the knowledge of subject-matter experts to the end user through their documentation. It is important to research the product for which you are writing and communicate with the person for whom you are writing.

## How can you research potential readers?

A good starting point in research is the observation of people. Observe your peers and determine common attributes. Writing for a skilled audience relies on technical accuracy; therefore, an understanding of the business environment, technology, and theory is essential.

Tools we can use to help us in our research include:

- surveys and questionnaires
- popular opinion and stereotypes
- personal experience
- brainstorming documentation efforts
- audience feedback

Additional research tools are found in the business environment. For example, a marketing department usually has a clear idea of intended buyers of software. To best utilize their skill sets, determine if a designated resource is accessible and arrange a meeting with them. A good resource can provide marketing analysis, possible pitfalls of terminology usage, and demographics in detail. This information is a good first step in understanding audience analysis.

End user analysis:

- Their level of experience with similar products
- How they intend to use the software
- The jargon they use in their work

## Environment and Expectations

If your intended audience is completely new to the target technology, you may have to include quite elementary instructions in your materials; but most readers today have at least some familiarity with these topics, and there is no need to waste their time repeating it. By finding out how familiar the audience is with similar technology, you save your time and the reader's too.

Most people don't buy software because they are interested in the names of all the buttons. Instead, they buy the software so that they can achieve a goal through completing specific tasks. So your instructions must concentrate on the steps they need to reach their goal. I use a word processor so that I write and format text, not because I love hunting for menu items and building macros. Hence, I expect instructions to show me how to create, save, edit, and finally print a letter or some other document. Always focus on the task the user wants to complete, and describe it simply and directly.

So long as your software follows the conventions found in most similar products (i.e., a "file" isn't called a "rock") then you can use the same conventions. The *Microsoft Manual of Style* is a good source for these software-naming conventions. Other terms that are specific to the software's intended purpose should come from the prospective users. If the end users of your software always refer to something as the "skryx", then so should you. A software manual is not the place to try to change their terminology, but a place to reflect it so that readers immediately feel comfortable and confident that you understand them and will help.

Your reader's environment affects what you write, and its format.

This leads to some basic questions:

- What does your reader need to know?
- Where does s/he need to know it?
- When does s/he need to learn it?

## Personas

Even if you have a pretty good idea of the end users of the software, it's still not very effective to write for a generalized "they." You could solve the problem by always writing for your mom, but inevitably you'll find yourself writing for people so very unlike your mother that it simply won't work. Technical writers tend to document many different types of technology, and this means writing for very different audiences.

Alan Cooper has proposed a workable solution. He suggests creating fictional but complete personas for each project, and then writing for the personas.

While creating a fictional character may seem to be an odd start to the process of documenting technological products and processes, it usually works. Why? Because having a persona allows you to think deeply about your audience and cater the information to their needs. Then you can select the appropriate "natural" metaphors and data structures they will understand.

Personas are hypothetical archetypes, or "stand-ins" for actual users that drive the decision making for interface design projects.

- Personas are not real people, but they represent real people throughout the design process
- Personas are not "made up"; they are discovered as a by-product of the investigative process
- Although personas are imaginary, they are defined with significant rigor and precision
- Names and personal details for personas are made up to make them more realistic
- Personas are defined by their goals
- Interfaces that satisfy personas' needs and goals are built

## Example 1

Write "How to make instant coffee" steps for Wing Lee. Coffee is an important part of the morning for many people. Unfortunately, there are times when a coffee maker is not available. Luckily, it is still possible to make coffee using hot water and instant coffee. This will show you how to make some. Total time: 5 minutes

1. Boil some water.
2. Add 2 teaspoons of coffee powder in your coffee mug.
3. Add a teaspoon of sugar.
4. Add some cocoa powder or chocolate syrup if you want to.
5. Now add the boiling water to your mug and stir.
6. Add some milk or cream, stir, and your coffee is ready.

## Identity

Who are they? Where do they live? What language do they speak? How old are they? Do they have a family? How do they look for others? What is their need?

## Needs

Why would they want to use your product? What do they wish to achieve? What are their goals? What do they want to read? Why do they want to read you?

## Attitudes

Does your audience hate reading? Maybe you should draw a picture. Do they distrust technology? Consider using a very informal voice. Do they love details and examples? What is their previous experience with user documentation?

## Expectations

Based on their previous experience, what do they expect out of what you're writing?

Overviews? Details?

If they want to use the product without any details, write something very compact to satisfy them; but if they are expecting detailed technical specifications, a general introduction will not meet their goals. You must know their expectations in advance of planning your documents. Sometimes, product marketing can help you find out what they expect, or you may look at competing products.

Personas are simply hypothetical types of real users. Describe your persona's goals, experience, environment, and expectations. Then write and structure your information in such a way that it serves those goals.

1. Identify key users
2. Create users' persona
3. Identify users' goals
4. Define tasks to accomplish these goals

## Technical Writing Research

Generally speaking, there are a limited number of approaches to getting cooperation and information from specialists:

### The B's of interacting with SMEs

Subject Matter Experts (SMEs) have information. Your job as a technical writer is to transfer that information to other people. First you'll have to learn what they know. This is crucial to your success, so you have to know how to get along with these experts.

#### Bullying

- Bullying developers is unlikely to be effective. In relative terms, they have more organizational power than technical writers and can resist this bullying very easily. In practical terms they have the information, and we need it. So what can we threaten anyone with? Very little. Don't try to bully SMEs.

#### Begging

- Begging might work, but it's undignified. "Please, please tell me!" won't get you very far.

#### Bothering

- Bothering developers is probably the most common and most annoying technique. A barrage of emails and reminders will eventually work, but you'll get the minimum amount of cooperation just to get rid of your pestering.

#### Bribing

- Bribing developers can be the first step on the road to a longlasting friendship. Bribing in this context is giving the developer something tangible in return for their intangible knowledge, whether that be some chocolate or something larger.

## Backscratching

- The phrase "you scratch my back, I'll scratch yours" is a very useful motto for getting information from a developer. Backscratching is one step up from bribery as there is reciprocation between the technical writer and the developer.
- The developer can be convinced with the reasoning that the technical writer is helping the developer by taking away the laborious task of writing documentation.

## Befriending

- The best way to get information from a developer is to develop a friendship with them. It is far easier to get information from your friends than it is from just another colleague, also your friends are far more patient of your misunderstandings.

## Researching and Interviewing

### Why Research for an Interview?

While it is true that the purpose of an interview is to gather information about the product you are writing about, it is also important that you take time to prepare before meeting with the SME.

One of the most important reasons for being properly prepared for an interview is to maintain your credibility with the SME - credibility in the eyes of a developer is of vital importance because if they have little or no respect for you then you will get the minimum of co-operation.

It is important when dealing with an SME not to attempt to bluff them and appear more knowledgeable than you really are, again it is vital to remember that an expert can spot a fake from a mile away.

### Tools to use

There are many places we can look to in order to prepare ourselves for the interview.

The first place we can go to in order to find information is any previous product documentation which is available. This is important to be aware of because we do not want to ask developers dumb questions which have already been answered elsewhere. It can also provide useful information in the situation where we are writing about an update or amendment to a product as we can simply ask if the situation is still the same.

One of the most valuable tools for background reading is of course the Internet, in particular sites such as Wikipedia and Google. These sites are a gateway to background information which often the developer will assume you already know. So, be prepared for the developers' expectations and meet them.

When you are preparing software-related documentation, one of the most useful preparation techniques is to use the software itself, assuming of course it is available to you. By experimenting it is possible to formulate a reasonable assumption about how something works.

## Know your SME

The SMEs we are most likely to come across when writing our documentation can be described using Alan Cooper's term "Homo Logicus", the following are typical traits of such a person:

- Intellectually competitive
- Trade simplicity for control
- Enjoy mastering complexity
- Often contemptuous of "users"
- Lose sight of big picture

## Tips for collecting information from SMEs

- Don't send e-mails asking for technical explanations. Either call the SME or go over to his or her cube and ask a few questions.
- Set up official meetings with SMEs to ask all the questions you have. People may be busy, but they can rarely escape an official meeting if you set it up.
- If you can sit near an SME, one technique that works well is to wait until you see them entering a "dead" state (e.g., they're waiting for something to install, or they can't figure something out, or they're finished with something). Timing is everything. Ask a question at that time, and then ask another. It might get them going on a bit longer than they had planned.
- Ask to look over their shoulder and watch what they're doing. I suspect that many SMEs relish their techie knowledge, and this is one way to ingratiate yourself by inundating their senses with indirect adulation.
- To get an SME to review a document, set a due date and call a meeting at which the SME is required to deliver his or her review. If you just send the document and ask for a critique/review, it may never come.

- Although you can always buy an SME lunch, it's sometimes hard to keep the focus on work. If you carpool, you can ask the SME questions in the car, where he or she doesn't have access to a computer.

### Conducting SME interviews

Remember this phrase when interviewing an SME: **Proper Preparation Prevents Poor Performance**

### Resources

As well as being prepared in terms of background reading for the interview, it is also vital to pay attention to what things you need with you in order to successfully complete the interview.

Most important is how you intend to record the information you receive from the SME. Will you be writing? If so, do you intend to type straight to your laptop, or use a notepad and pen? If you are using the latter, is it a suitable medium for the location of the interview? If you are using paper and pen, it is always a good idea to have different colour pens available for highlighting information or separating the text clearly.

If you are not planning to write in situ, then bring a recording device to keep a record of the information that the SME presents. If the SME uses a whiteboard for diagrams, then have a camera with you to take pictures of the diagrams.

### Manner

The where, when and how of interviewing is also very important.

- **Where**

One of the key considerations when interviewing an SME is where you intend to meet to collect the information you need. This will of course affect how you record the information you collect, especially if you are meeting within a server room where a Dictaphone would be useless. The best option is, of course, a meeting room where the SME can bring a laptop to

show you the information. This will also eliminate potential disruptions that can take place in the SME's regular work location.

- **When**

Developers are busy people, so it is important not to take up their time for hours on end. By preparing properly for the interview, the technical writer can minimize the amount of time taken out of the SME's schedule. Ideally, the maximum duration of an interview should be about an hour.

- **How**

When interviewing an SME in a meeting room it is a very good idea to create an atmosphere that is conducive to your task, which is getting information. A developer's natural environment is not an office, it is the server room, so it is necessary to be relaxed, and it is always a good idea to have coffee and biscuits or chocolate available.

It is also important to consider how you plan to talk to the developer, "register" is vitally important as we neither want to be overly familiar or overly formal with the SME. Learn their language and speak to them in terms they understand.

### **Information Chunks**

Everyone makes assumptions, and developers are no different - they will assume that you have some background knowledge on the product about which you are writing. So, it is important to not ask broad sweeping questions, but rather questions that require an individual "chunk" Technical\_writing\_structure of information.

Good technical writing presents information a chunk at a time, so your questions should reflect this reality and look only for chunks that are useful, rather than writing monologues. We are writing about how something works, not the Queen Mab speech from Romeo and Juliet.

### **Preparation**

Remember the phrase: **Proper Preparation Prevents Poor Performance**

At this point the tracking procedure begins. It is important to keep the requirements specification of the project in mind so that the information you acquire is in line with that specification.

It is important to have clear and well-defined questions ready; always be focused and ask open questions rather than closed questions that expect a "yes" or "no" answer.

Make sure any equipment that you are using works.

### **Beginning**

- Always be prompt, there is nothing more annoying for a busy developer than someone being late.
- Thank the SME for his or her time.
- Inform the SME of the scope of the interview and why you need the information.

### **Conducting**

- Taking notes is important. Pay particular attention to concepts, numbers and relevant facts. There is no need, however, to copy the SME's answers verbatim.
- Begin with the questions you already have so that you cover everything in the plan.
- Ask follow-up questions in order to clarify the SME's replies or to get extra information that is useful for you.
- Bring the SME back to the points you want covered, don't be afraid to lead the interview rather than simply letting the SME waffle all over the place.

### **Finishing**

When finishing the interview it is important to check that all the questions you have prepared are answered. This is an important part of the tracking process.

- Ask if there is anything you have overlooked.

- Thank the SME again for his or her time.

### **Tracking a task**

Keeping a track of your work is essential for the life cycle of a project. If you don't keep track, then how do you expect to know what has been done and what needs to be done?

Make a list of topics and concepts that correspond to the requirement specification of the system. By tracking these requirements to the actual system and documents delivered to the users, you can validate that you've covered everything.

### **What is Validation?**

Once you have interviewed the SME and created your documentation based on the information chunks that you have gathered it is important to validate that information.

Validation is a process that ensures that the information you have written is accurate and, most importantly, that it works.

### **How to Validate**

Providing accurate information is one of the most important tasks in technical writing.

The first line of validation is, naturally, self-validation. This is particularly true when you are writing documentation for software that you have access to and are able to test the information in the software environment first hand.

It is also a good idea to consult a fellow technical writer, remember that no one person knows everything there is to know about writing documentation. A second set of eyes may notice things that have slipped through undetected because of your familiarity with the text.

Having the SME validate your work is also a useful approach. This is especially true in our situation where the SME is practically the same as our target audience. However, in more general technical writing this approach can be detrimental to the process of writing for the target audience. The developer is a key resource for validating the veracity of what is written, but never for commenting on the style.

## Technical writing structure

### What is an information chunk?

An information "chunk" is a digestible unit of information.

When creating descriptions or instructions, a document structure will always be composed of a number of information chunks.

A telephone number, for example "555-3456", has two chunks, one of 3 digits and the other of 4 digits.

Chunks can also be known as "nodes" or "elements".

### How do chunks work?

George Miller came up with the concept of the "magical number seven, plus or minus two". The idea that human brains can handle and store effectively around seven chunks of information at a time.

This means there are clear rules for presenting chunks of information. The rules apply to both printed and online information.

### Structure and Function

Most things can be described in terms of structure and function – political systems, body organs, games, and systems.

Structure is Platonic in the sense that it approximates an ideal form. Function is Aristotelian in that it describes the uses we have for things. A Platonist might describe a horse as a beast with four legs, a tail, and a long back. An Aristotelian could describe the same horse as a beast for riding and even go a step further to give instructions for riding the beast.

Technical writers combine both philosophies in their everyday work. It's just another thing that makes technical writing such an interesting profession.

## **Descriptions versus Instructions**

Structures have Descriptions. Functions have Instructions.

For example, when describing a horse, list all the components that make up the horse. To identify the horse generically, define what a horse is in abstract terms. Give the audience enough required information to identify a horse.

When providing instructions for riding a horse, start with a description of the temperament of that horse, and how to use the saddle, reins, and stirrups the horse is wearing. Provide the audience with information required to take advantage of the horse's function...riding.

## **The Importance of Structure**

Detailed By: Mr Kamran Ahmad Awan

Data without structure is not very useful. How do you find what you're looking for? What's important, and what is trivial? When you read about a subject, you expect some kind of organization that saves your time and effort in learning. If it is not organized, you will quickly give up.

Put the most important information first. What is most important? That depends on your audience analysis. Generally, warnings come first. Most introductions are a waste of time for the technical reader. They don't read from start to finish, but rather search for a particular chunk of information.

So your index, table of contents, or other navigational aid should come first. Assume your reader is intelligent enough to find their way if your organization is clear and consistent.

## **Hierarchical Structures**

Ideally, you know your audience so well you can rank the importance of your information. At any rate, you should make an intelligent guess at what should come first. This creates a natural hierarchy, where features are listed from most to least important.

If you follow the structure of the software or system you are documenting, you may choose to look at the user interface. For each unique screen simply go from the top left to the bottom right, listing each menu item, command button, or text box in order.

Hierarchies become obvious while analyzing the structure and function of your application, based on the primary uses of the system in the hands of your customers.

### **Horizontal Structures**

More often, because of the nature of modern software and user interface design improvements, you'll find that the application you write about has a horizontal or process oriented layout. This can be represented as a wheel just as well as a flat line.

Horizontal organization emphasizes the dependencies within the process. One thing follows another. At the same time, it shows that you may start the process at a variety of points. Anything can be first. There are many ways to achieve the users' goals.

### **Vertical Structures**

Vertical structures, where there is only one path to follow, are rare. A single information chunk in the form of an instruction may be presented as a vertical structure.

### **Linear structures**

A linear structure is familiar to everyone who reads books. There is a beginning, middle, and an end.

For something to happen, something must happen first. It depends, or has a "dependency" on the first action.

### **Non-linear structures**

Online structures, as you quickly learn by surfing the internet, are non-linear. This means that there is no need for dependency. You can go direct from the middle to the end, and back to the beginning.

You can also provide navigation through graphical interfaces, as in this wiki example of an image map.

An image map allows you to identify an area in a graphic, so when the user clicks it a link opens. You can put many links in a single graphic.

### **Structural clash**

Most systems have a mix of dependent and non-dependent functions. Where there are dependencies, a numbered hierarchical structure for the user information is obvious.

Where the functions are non-dependent, a non-linear or horizontal structure makes more sense.

But on paper, you cannot effectively represent a non-linear structure so you must arbitrarily assign importance to various features.

In each case, the key is good navigation designed with your audience in mind, with both structure and function. Allow your readers to search for the information they want with an online search function. Printed documents can have a table of contents and index.

### **Exercise 1**

Re-structure this description of making scrambled eggs. For this exercise the audience is Sandra Jones.

#### How to make scrambled eggs for 2 people.

Assemble the following ingredients :

1. 4 eggs
2. 1/2 cup of milk
3. 3 tablespoons of canola oil
4. salt and pepper

You will need the following utensils:

1. Medium size nonstick surface frying pan
2. A wide spatula
3. Mixing bowl, and whisk

Directions:

1. Break the eggs into the mixing bowl, add the milk, salt and pepper
2. Whisk all ingredients together until uniformly mixed, and until the mixture has a slight froth.
3. Pour the oil into the frying pan over a medium heat
4. Tilt the frying pan to coat the cooking surface of the pan with oil.
5. Let the oil heat up about 40 seconds to 1 minute and then pour the mixture into the pan.
6. The eggs will begin to cook and take on a more solid texture.

Use the method of flipping the egg mixture with the spatula once as it cooks for a more firm texture. Alternatively use the spatula to lightly scrape the eggs gently as the mixture firms for a softer texture. Place the scrambled eggs on a warm plate and enjoy ! Tasty accompaniments include bacon, ham, tabasco on the eggs and toast with your favorite jam.

## Technical writing style

### Goals

- Inform (educate) the user.
- Write clearly, using words the audience understands.
- Compose simple, active voice sentences.
- Understand the audience and speak directly to the reader.
- Use active voice, appropriate grammatical person, present tense, and the imperative mood.
- Determine if the text requires a change in grammatical person or past tense, future tense, and/or declarative mood.
- Avoid unnecessary repetition, redundant jargon, and passive voice.
- Evaluate your writing: write, review, and repeat.

### Important information first

Important information at the beginning of a sentence makes it easier to understand.

### Example

Unclear:

- The unwise walking about upon the area near the cliff edge may result in a dangerous fall and therefore it is recommended that one remains a safe distance to maintain personal safety.

Clearer:

- Danger! Stay away from cliff.

### **Use your audience's vocabulary**

Good technical writing improves the reading experience. Use synonyms for "technical" terms to make the reader's document search more effective.

### **Understand your environment**

Some business environments don't understand the technical writing style, insisting on passive voice and artificial formality. Modern technical writing directly addresses the reader in an unpretentious way.

### **Sentence structure**

Good sentence structure helps convey information. Try to keep the most important information towards the beginning of the sentence.

#### **No**

- Furthermore, large volumes of water are also required for the process of extraction.

#### **Yes**

- Extraction also requires large volumes of water.

### **Long sentences**

- Long sentences tax the brain and make remembering information difficult. Strive to keep sentences under 16 words. Split long sentences into two or more chunks. A sentence that lists three or more items may work better as a bulleted list.

### **Short sentences**

- The most basic sentence is a simple sentence with only one clause. Evaluate each sentence to ensure it contains sufficient information.

### **Quotation marks**

- In the U.S., periods and commas usually fall inside the quotation marks. In the UK and most other countries, terminal punctuation usually goes outside the quotation marks unless part of the quotation. This style (sometimes called *logical punctuation*) is also

permitted in American writing where precision is necessary, e.g. in presenting computer code and commands, or in textual criticism.

### Five rules of concise communication

#### Avoid the obvious

- Understand the audience's technical level. Know what terms they understand and what terms you must define.

#### Avoid padding

- When reading a piece of technical writing, the audience does not benefit from elaborate prose. They just need information on how to perform a task. Avoid using padding, or filler. Don't use phrases such as, *kind of*, *sort of*, and *essentially*.
- Avoid redundant prepositional phrases
- Prepositional phrases, the combination of a preposition with a noun phrase, are among the worst offenders in making text long and tiresome to read. Often, it is possible to replace an entire phrase with a single word.
- Use *now* instead of *at this point in time*.
- Use *suddenly* instead of *all of a sudden*.

#### Avoid verbosity

- Write short, succinct sentences. Never say, "...as has been said before," "...each and every," "...point in time," etc. Avoid "...in order to," especially at the beginning of sentences. Every word must contribute meaning to the sentence. Technical writing is information delivery.

#### Avoid pomposity

- While it is good to have a wide vocabulary, technical writing is not the place for showing off linguistic abilities. Technical writing is about producing clear, plain instructions for a specific audience.

## Write clearly

|George Orwell's general writing rules work for technical writing:

1. Never use a metaphor, simile, or other figure of speech you are used to seeing in print.
2. Never use a long word where a short one works.
3. If it is possible to cut a word out, do so.
4. Never use the passive voice. Use active instead.
5. Never use a foreign phrase, a scientific word, or a jargon word if you can think of an everyday English equivalent.

Exceptions for technical writing:

- If the audience habitually uses a particular metaphor, simile, or other figure of speech, you can use it too.
- If scientific jargon is a standard, ensure you follow it.
- Once you explain a word or term, you have made it usable in that document as a technical term—so use it consistently for that element.

## Use active voice

Active voice clearly shows the actor in a situation. When we read active voice, we know who does what to whom. Active voice is shorter and more interesting to read. Active voice is the standard for technical writing.

### Example 1:

Active

- They speak English.

Passive

- English was spoken.

Passive voice obscures the actor—sometimes deliberately, as in, "Mistakes were made."  
Passive voice is ambiguous and often leaves out important information. Who made those mistakes?

### **Example 2**

Passive

- The file is edited by the administrator.

Active

- The administrator edits the file.

You can identify the passive voice easily. Sentences that have the word "by" are almost always passive. Past-participle verbs—"was eaten," "is driven"—are usually passive. You can always rework a passive sentence to turn it active. Often, you just put the actor first.

### **Example 3**

Passive

- This Wiki has been written by various authors.
- Mistakes were made.
- One must masticate thoroughly to ensure the burrito will have been eaten completely.

Active

- Various authors wrote this Wiki.
- I made a mistake.
- Chew the burrito well.

## Understanding present tense

Computers have no past, and no future. Everything happens in the present as a direct result of some event, usually caused by the user. As each event takes place, the computer has a reaction. Each of these events happen in the present, so good technical writing uses the present tense almost exclusively.

## Cause Effect

Cause	Effect
The user clicks Save.	The computer saves the file.
The user types a login and password.	The computer checks the login and password against an authorized user list. If the login and password are on the list, the welcome screen appears. If the login or password does not match, the try again screen appears.

## Grammatical person

First, second, and third person refer to personal pronouns that reflect a point of view in singular and plural forms. Each "grammatical person" can be written in subjective case, objective case, or possessive case.

When writing or editing technical content, consider the sentence or paragraph's meaning. The two examples below demonstrate common uses of third and second person.

### Example: Third person - active voice

- The Options menu item specifies which model components display. Selecting Options produces a pop-up dialog box with toggle switches grouped into Elements, Rendering, and Reference Geometry.

## **Second person**

- The second person point of view addresses a reader or listener directly. Second person addresses the reader, the person your writing speaks to ("you" for both singular and plural).
- Here is an example of the imperative mood with the pronoun you:
- Turn in your cycle log each Friday.

## **Contractions**

- Plain language specifications generally specify that you use contractions where appropriate.[1] Do not use irregular contractions, or contractions that reflect future tense or passive voice—e.g., "...the motor'll start."

## **Shorten sentences**

- Readers process and understand short, active voice sentences. Remember that instructions you provide the user must indicate: who, what, where, and how to perform the action.

## **No**

- Workers should tighten the chuck with great care because incorrect tightening may result in damage to the drill bit.

## **Yes**

- Tighten the chuck carefully to avoid damaging the drill bit.

## **Avoid ambiguous sentences**

- Do not write sentences that the reader may interpret in more than one way.

## No

- The user may choose to open the chosen file, and it will automatically open itself when it is hit by the mouse.

## Yes

- Click any file to open it.

### Write for application consistency

Commonly, steps in a procedure or task follow the navigational structure of the application left to right, top-down. Each step must include the menu commands, or dialog box and field names in the sentence. The top-down method determines the "big picture" (global view) of the application first and then defines its features in detail. Note, based on the language we may read right to left.

## No

- Select Rename from the Edit menu.

## Yes

- On the Edit menu, select Rename.

### Action verbs, menus, and commands

We interact with computers in a variety of ways. You can select anything on an application user interface by selecting it using a keyboard or mouse. It is important to use action verbs and software terminology correctly.

The most frequent verbs used in software are:

- Click
- Double-click
- Select

- Type
- Press

**Use of an action verb in a sentence (bolded words):**

1. In the dialog box, **click** Open.
2. **Type** a name in the text box.
3. On the keyboard **press** Enter.

**Use of menu actions and commands in a sentence:**

1. On the File menu, click Open.
2. Type a name in the User Name field.
3. In the Open dialog box, click Save.
4. On the computer keyboard, press Enter.

Make users aware of where they are in the application. If there is more than one method to perform an action, use the most common method. Define "what, where, and how" in each step of the task or procedure. Describe menu items for the current task left to right, top-down.

**Example:**

On the File menu, click Open File.

Or

On the toolbar, click the Open File icon.

## Specifying gender

English provides no dedicated pronoun for the gender-neutral third-person singular. The word "it" refers to animals or inanimate objects. Writers often use the gender-ambiguous plural pronouns: "they," "them," and "their," to describe individuals of unknown gender.

### Example (using male singular)

- I saw someone in the distance. I could not see if he was male or female, but his coat was definitely brown.

### Example (using gender-neutral)

- I saw someone in the distance. I could not see if they were male or female, but their coat was definitely brown.

In technical writing, the gender-neutral pronouns, they, them, or their, are preferable to the verbose he or she/his or her/him or her. If a sentence seems awkward, try to avoid the issue: leave out the pronoun or use second person imperative. These examples assume the operator is the audience:

### Bad

- The operator must turn in his or her cycle log each Friday.

### Better

- The operator must turn in their cycle log each Friday.

### Better still

- Turn in your cycle log each Friday.

Writing for translation: Use gender-specific pronouns when writing for a language that uses personal pronouns that differ according to gender.

## Lists

How long can a list be?

Most people can associate between five and nine data items together. Therefore, keep your lists short. If any list of instructions has more than seven steps, try to break it into two or more groups, with an intermediate state between. Again, there is no iron rule. Do what is reasonable in your circumstance.

Lists are a useful tool in technical writing, as they break-up overly long sentences into information chunks that are easier to digest than long-winded monologues.

Why use lists?

Lists are useful because they:

- Break up long sentences
- Create easy to digest information chunks
- Ordered and unordered lists

Use unordered (bulleted) lists when the audience doesn't require that the information be in any particular order, as in lists of:

- Features
- Options
- Components

Note: Options are non-exclusive possible actions in the software.

Use ordered (numbered) lists when the audience needs the information in a particular order, or needs to refer to list items by number:

1. Steps of a procedure
2. Items on a check list
3. Requirements in a specification

Even lists can become overly long and require breaking up, this is best achieved by separating the information chunks as described in Technical writing structure into chunks. Most people can remember a maximum of  $7 \pm 2$  items without too much hassle, as proposed by George Miller. Generally, however—once a list goes above 10 items, sub-divide it.

#### Example

- Shopping List
  - Yogurt
  - Bread
  - Tea
  - Milk
  - Biscuits
  - Crisps
  - Pork chops
  - Chicken
  - Cheddar
  - Chocolate
- Dairy
  - Yogurt

- Cheddar
  - Milk
- Meat
  - Chicken
  - Pork Chops
- Snacks
  - Chocolate
  - Biscuits
  - Crisps
- Drinks
  - Tea

## Punctuation

Just as in regular text, it is important to punctuate lists correctly. If the list is made up of phrases, capitalize the first word of each list item. Do not end each list item with a comma or full-stop (period).

### Example

The new Skoda Fabia has the following benefits:

- Greater fuel efficiency
- Expanded head room
- Expanded rear leg room

When items are complete sentences, begin with a capital and end with a period.

### Example

The new Skoda Fabia has the following benefits:

- The fuel efficiency is greater.
- There is more head room.
- There is increased rear leg room.

List items are sometimes an initial phrase followed by a complete sentence. In that case, use capital letters and full stops (periods) for the phrases as well as the complete sentences.

## **Subject**

Subject matter is important. Remember that warnings come first. Apply warnings to any documentation that includes a task or procedure that causes damage to life or property.

## **Formality**

Part of our task as information specialists is to write in a tone suitable for the audience. In writing for educated and experienced engineers, an informal tone is inappropriate. Most technical writing requires a reasonably formal style. When deciding on style and tone, audience, subject, and purpose are the main considerations.

## **Audience**

Audience awareness dictates style. As we are writing for professionals we must write professionally, in a reasonably formal style.

## **Purpose**

Our purpose is to inform, not to entertain. So our writing must be informational.

## **Clarity**

Seven guidelines for clear writing.

Use active voice

Active voice works better than passive in technical writing because it focuses sentences on the person or other entity that performs the action—the agent, or actor. For clarity, active voice is vastly preferable to passive, though occasional situations make passive voice unavoidable.

Be specific

Use precise words as opposed to more general variants. Provide enough detail to inform the reader. Avoid ambiguity. Many words in English have multiple meanings; make it clear which meaning you intend.

#### Eliminate useless jargon

"Jargon" is a field's specialist vocabulary. Computer scientists speak of a "network" and mean something different from when a sociologist talks about a "network." Jargon is a necessary part of modern life, but we must be aware of what jargon the reader knows and how they use it.

#### Be positive

Avoid phrases that contain negative elements like "no" or "not." For example, "impossible" is a positive construction as opposed to "not possible." The main reason for using positive constructions is that the reader more readily understands information in this form.[citation needed]

#### Avoid long noun constructions

English commonly uses a noun as an adjective, which can cause unwieldy phrases. Often, you can clarify this with a hyphen between, for example, two nouns used as adjectives (as in the phrase "flat-bed plotter"). Clarity demands that we must write to make the meaning clear.

#### Don't use cliches

Cliches are outdated ways of writing that often represent a writer's attempt to impress. Good writing is original and clear. The best English is plain English.

#### Don't use euphemisms

Say exactly what it is you want to say, don't avoid writing the uncomfortable.

### Simple English

When writing for audiences that include non-native English speakers, it is important to write simple, straightforward sentences and avoid colloquialisms. Some industries have adopted a "Simplified English" that consists of about 1000 words, each with a single meaning. Be aware of any relevant simplified English for the target industry, so you can write text that the audience can understand.

### Articles

Articles in English present some of the most difficult aspects of grammar. Here are the rules.

#### The

Articles in English are invariable. They have one form regardless of the subject: "the" is always "the," and refers to:

- Something already mentioned: An MGC is a "Media Gateway Controller"; the MGC controls all activity on an IP phone network.
- Something both speaker and listener understand, even if not previously mentioned: "Where is the kitchen?"
- A particular person or object: The person who wrote the documentation has excellent style...
- Unique objects: the sun, the moon, the world...
- Superlatives and ordinal numbers: The best, the first...
- With adjectives, to refer to a whole group of people: the Japanese, the old...
- Geographical areas and oceans: the Atlantic, the Gobi Desert...
- Decades, or groups of years: the Seventies, the early 19th century...

#### A/an

Use 'an' with nouns that start with a vowel sound (a,e,i,o,u) and 'a' with nouns that start with a consonant sound (letters that are not vowels):

- A chair
- An apple
- A truck
- An orange
- A castle
- An opera
- A historical (an historical is archaic and incorrect at least in the U.S.)
- A Media Gateway Controller
- An MGC (M is pronounced em, so it is a vowel sound)

NOTE

An before a silent h: an hour...

A before u and eu when they make a consonant Y (sound like 'you')

a European, a university, a unit

The indefinite article:

refers to something for the first time:

An MGC is a "Media Gateway Controller." The MGC controls all activity on an IP phone network.

with jobs:

- John is a builder.

- Sarah is training to be a doctor
- He hopes to be a footballer.

with nationalities and religions:

- Dick is an American.
- Panjet is a Sikh.

with names of days:

- I was born on a Thursday.

to refer to a kind of, or example of something:

- The server room is a noisy place.

with singular nouns, after the words 'what' and 'such':

- What a shame!
- She's such a beautiful girl.

meaning 'one', referring to a single object or person:

- I'd like a pay raise please.
- The writer wrote a novel.

Notice also that we usually say a hundred, a thousand, a million.

Exceptions

When there is no article:

with names of countries (if singular)

- Germany is an important economic power.
- He's just returned from Zimbabwe.

- (But: I'm visiting The United States of America next week.)

with the names of languages

- French is spoken in Tahiti.
- English uses many words of Latin origin.
- Indonesian is a relatively new language.

with the names of meals.

- Lunch is at midday.
- Dinner is in the evening.
- Breakfast is the first meal of the day.

with people's names (if singular):

- John's coming to the party.
- George King is my uncle.
- (But: we're having lunch with the Morgans tomorrow.)

with titles and names:

- Prince Charles is Queen Elizabeth's son.
- President Kennedy was assassinated in Dallas.
- Dr. Watson was Sherlock Holmes' friend.
- (But: the Queen of England, the Pope.)

After the 's possessive case:

- His brother's car.
- Peter's house.

with professions:

- Engineering is a useful career.
- He'll probably go into medicine.

with names of shops:

- I'll get the card at Smith's.
- Can you go to Boots for me?

with years:

- 1948 was a wonderful year.
- Do you remember 1995?

With uncountable nouns:

- Rice is the main food in Asia.
- Milk is often added to tea in England.
- War is destructive.

with the names of individual mountains, lakes and islands:

- Mount McKinley is the highest mountain in Alaska.
- She lives near Lake Windermere.
- Have you visited Long Island?

with most names of towns, streets, stations and airports:

- Victoria Station is in the centre of London.
- Can you direct me to Bond Street?
- She lives in Florence.
- They're flying from Heathrow.

in some fixed expressions, for example:

- by car

- by train
- by air
- on foot
- on holiday
- on air (in broadcasting)
- at school
- at work
- at University
- in church
- in prison
- in bed

### British or American English?

There are minor differences in American and British English. For example:

- Spelling differences—color vs. colour; realize vs. realise
- Americans put periods and commas inside quotes, British outside—The sign said, "push." vs. The sign said "push".
- In the US, ground floor and first floor both mean the floor at street level; in Britain, the first floor is the floor above the ground floor—which Americans call the second floor.

### Screen terminology

Use consistent terminology when you refer to the user interface:

- Area
- Button

- Check box
- Close button
- Desktop
- Dialogue box
- Dropdown lists
- Expansion boxes
- Fields
- Filenames
- Folders
- Icon
- Keyboard keys
- Maximize button
- Menu and menu item
- Menu bar
- Minimize button
- Non-GUI screen
- Option button
- Paths
- Quick Launch bar
- Scroll arrow
- Scroll bar
- Scroll box
- Start button

- Submenu
- Tab
- Taskbar
- Taskbar button
- Title bar
- URL address
- Window
- Wizard page

The Microsoft Manual of Style for Technical Publications, 3rd ed. provides good recommendations for graphical user interface (GUI) terms.

### **Names for keyboard keys**

Spell keyboard key names as they appear on the keyboard in both text and procedures. Use all capital letters referring to specific keys. Write arrow keys in small letters when referring to them generally. When writing about a specific arrow, for example `\'DOWN ARROW\'`, use all capital letters.

- ALT
- ALT GR
- arrow keys
- BACKSPACE
- BREAK
- CAPS LOCK
- CLEAR

- CTRL
- DELETE
- DOWN ARROW (use with the and key)
- END
- ENTER
- ESC
- F1-F12
- HOME
- INSERT
- LEFT ARROW (use with the and key)
- NUM LOCK
- PAGE DOWN
- PAGE UP
- PAUSE
- PRINT SCREEN
- RESET
- RIGHT ARROW (use with the and key)
- SCROLL LOCK
- SELECT
- SHIFT
- SPACE BAR (use with the)
- SYS RQ
- TAB

- UP ARROW (use with the and key)

For information on keyboard key names not mentioned here, see Microsoft Manual of Style for Technical Publications, 3rd ed.

### Dictionaries, thesauruses and grammar checkers

A part of the skill of writing is the use of dictionaries, thesauruses, and grammar checkers. For best results, use them often and in the formal writing setting. This alleviates words in passive voice, repetitive usage, and spelling errors.

### Style manuals

A style manual helps writers adhere to evolved rules and conventions. In the U.S., writers use style guides from academic institutions, professional organizations, and corporations. The major style guides, however, are the Associated Press Stylebook and the Chicago Manual of Style (CMS). Generally speaking, journalists use the AP Stylebook and most other writers CMS, unless their work requires the style guide of a particular institution or corporation. The Microsoft Manual of style began as Microsoft's corporate style guide but enjoys wide use by technical writers for computer-specific issues.

### Why use a style manual?

A good style manual guides writers through the complex world of English punctuation, syntax, grammar, and other writing issues. In some cases, style manuals disagree on minor points. For example, journalists, who follow the AP Stylebook, do not usually use a terminal comma: "chickens, ducks and geese." Outside journalism, writers who follow CMS use a terminal comma: "chickens, ducks, and geese." Use the convention appropriate for the type of writing, but even more importantly, use the same convention all the way through the document or project. A style manual provides a basis for applying rules and conventions consistently.

### The Chicago Manual of Style

The Chicago Manual of Style (abbreviated in writing as CMS or CMOS, or verbally as Chicago) is a style guide for American English published since 1906 by the University of Chicago Press. In the United States, it is the most widely used style guide for non-journalistic content.

### Microsoft Manual of Style

The Microsoft Manual of Style for Technical Publication (MSTP) is widely used in the technical environment. The first edition was published in 1995.

### Associated Press Stylebook

The Associated Press Stylebook and Briefing on Media Law, usually called the AP Stylebook, is a style and usage guide used by newspapers and the news industry in the United States. It is not widely used outside of journalism.



## Technical Writing Presentation

### Materials

When preparing a presentation it is essential to have sufficient support or background information.

To create even a 30 minute presentation, it is essential to have a thorough background knowledge of the subject and this comes only through reading relevant material or watching the relevant videos.

## Finding Materials

The first part of researching a subject for a presentation is to find relevant materials.

Useful tools:

- Internet search engines
- Local libraries

Internet search engines and local libraries are the best tool for finding background reading about a subject.

- Wikipedia

[Wikipedia](#) is an excellent source for more in-depth reading.

- Trade journals

One of the most useful tools for finding up-to-date information are trade-specific magazines.

## Filtering Materials

Once you have found your materials, it is important to filter them.

The aim of filtering your material is to isolate the most important facts and details to support your presentation.

Filtering will give you quotes, statistics and anecdotes which can be used in your presentation.

## Preparation

### **Preparation**

On average a 1 hour presentation needs 7 hours of preparation

Being prepared is more than just having a few scribbled notes on a piece of paper.

Few people can speak convincingly without proper preparation.

Remember the phrase - **Proper Preparation Prevents Poor Performance**

### Know your subject

Without a thorough knowledge of what you are presenting, you won't convince anybody.

A presentation is like the tip of an iceberg, you must have plenty of knowledge behind you.

### Know your audience

Knowing your audience is vital, and affects your presentation.

How you speak to your peers is significantly different from speaking to senior management.

You need to tailor your material to suit the audience you are addressing.

### Know yourself

People are only confident when they are themselves, you need to have a style which works for you.

If you are a quiet person, don't try to be a lively jokey person when giving a presentation.

If the audience cannot trust your personality they will not believe the information you are presenting to them.

### Know your presentation

Practice your presentation at least 3 times before you actually give it.

It is important to be aware of timings and where visual aids are used.

Practising your presentation will give you more confidence in what you are presenting.

A well practised presentation is a slick and impressive presentation.

## Common Pitfalls

- Insufficient research
- Being poorly prepared
- Irrelevant visuals
- Trying to be too clever