



# E 303: TECHNICAL WRITING

School of Literature and Languages

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## Lecture 2 Memo

**To:** Mr. Merchant's English 303 students  
**From:** Mr. David M. Merchant, English Instructor  
**Subject:** Lecture 2: Audience, Purpose, and Context; English Usage  
**Date:** March 16, 2020

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The purpose of this memo is to give an overview of audience, purpose, and context, as well as the first discussion of English usage in the context of technical writing.

### Lecture: Audience, Purpose, and Context; English Usage

Your job when writing professional/technical documents is to make the information, the content, easy to find, easy to read, and easy to understand. It is, to paraphrase Nathaniel Hawthorn, hard work to make a document easy to read. You need to have all the information your audiences need, no more and no less, as well as make the information easy to find, and easy to quickly understand. This involves audience analysis, document design, as well as correct English usage. Today I will focus on audience, purpose, and context followed by a partial discussion of English usage in the context of technical writing. We will cover document design (as well as more on English usage—that is one topic I cannot cover in just one discussion). Keep in mind, the readings assigned also cover these important topics and I will assume that you have read them.

#### Audience, purpose, and context

Notice that Audience comes first. The audience is king, queen, emperor. Readers of technical documents are a bit different from other readers. They NEED to understand your document to make a decision or to carry out an activity. That is their purpose for coming to the document and, thus, your purpose is to make the content easy to find, easy to read, and easy to understand.

Audiences for technical documentation can fall in one or more distinct categories:

- **Primary Readers (Action-Takers):** This audience type is only concerned with how the information will allow to do something or make a decision. [Managers, Technicians, Customers, Grant Reviewers]
- **Secondary Readers (Advisors):** This audience type is comprised of experts within the field, possessing special knowledge concerning the document's content. [Experts]
- **Tertiary Readers (Evaluators):** This audience type has a general interest in the document's information. [General Reader/Layperson]
- **Gatekeepers (Supervisors):** This audience type is comprised of individuals who authorize the use of internal documentation. Generally, their approval is needed before

the document is sent for publication and distribution. This category includes lawyers who may block a document because it negatively affects the company brand, can open the company to a lawsuit, leaks a corporate secret, or breaks a law.

The context is two-fold. First, treat your audience as busy or tired or stressed: they are skimmers, skimming through a document to find the information they need. They are not reading for leisure (not normally--a few of us were dropped on the head as children and have been known to read a technical document for a weird definition of fun). This context drives the creation of style guides (more on those tomorrow) and writing handbooks. This context drives the need to write simply, concisely, correctly. You need to say what you mean and mean what you say. Second, most technical documents need to be accessible to a global market, a global readership. Your busy, skimming reader may not speak English as their first language yet they still have a need to understand the document, a need that if not met can negatively affect your company (loss of a customer, a grant, a contract, and so forth). That document may need to be translated and concise and grammatically correct writing is easier, faster, and, thus, cheaper to translate.

"State your facts as simply as possible, even boldly. No one wants flowers of elegance or literary ornaments in a research article [or technical document]" —R. B. McKerrow

So, again, grammar is important. Correct American English spelling, grammar, punctuation, and word usage is important. State your ideas, your arguments, your facts accurately and simply. Do not use exaggerated, flowery, or fancy wording in technical writing.

I watched a video last year about the Juno mission to Jupiter. The narrator says at one point that the mission "completely changed" our understanding of how the solar system works.

"Completely changed."

Completely. Adverb. 1. To a complete degree or to the full or entire extent. 2. So as to be complete; with everything necessary.

Synonyms: All, altogether, entirely, totally, totes, whole, wholly

That narrator's statement is false. While the Juno mission has shown us just how much we do not understand about the formation and nature of the gas giant Jupiter, and while that may change some of our understanding of how planets formed, that is not a COMPLETE change in our understanding. Much of our understanding of solar system dynamics remain unchanged, or just "tweaked." Yes, for Jupiter there are some big changes in our understanding of that planet, and yes those discoveries are important and exciting, but it does not completely change our understanding of the solar system. It does not entirely change our understanding, changing everything, changing to the full or entire extent every part of our understanding.

Again, this is the hard work of technical writing (besides getting all the formatting right--but that's for a later discussion). You have to mean literally what you say, and say literally what you mean as much as possible. Think of Audience, Purpose, and Context again. You have a reader

skimming, scanning for information. A busy reader who is skimming, scanning for information. A busy reader who needs or requires the information that they are skimming, scanning for. This demands clear and concise writing. Anything else can increase the chances that a busy, skimming reader can misread or misunderstand information they need. At times, this can be a critical issue.

As I have said before, errors, even those that seem small, in technical communication have caused loss of customers, loss of contracts, loss (including destruction) of equipment, or even loss of life. These can be errors caused by assumptions, errors caused by complex or dense writing, errors caused by grammatical mistakes, errors caused by leaving out information, or errors caused by poor document design.

Hyperbole has a place in entertaining, to emphasize dramatically, and in poetic license, as may be the case in the video I was watching. Hyperbole is excusable to an extent in natural conversation as it is just not natural, or expected, that you will create drafts, revise them, edit them, in your mind of what you will say before saying it. But hyperbole does not have a place in technical writing. Focus on saying exactly what you mean and mean exactly what you say.

Again, I will read your technical writing literally. So, when revising, reread your work with a literal interpretation. If you have a smart-ass friend or relative, maybe they can be of use here-- have them read your paper, they will probably read the paper literally so that they can make smart ass remarks!

### **Standards of Excellence: Markel's Eight Measures of Excellence (for technical writing)**

See the "Standards of Excellence: 'You be the Judge'" PDF file for a quick summary of the Markel's Eight Measures of Excellence. These measures all tie back to, or support, Audience, Purpose, and Context. My rubric is largely based on those measures.

### **Grammar**

Over the next couple of weeks, most of the lectures will be on grammar. Actually, many days will include at least a small discussion on one topic related to conciseness, punctuation, spelling, or usage with special focus on common errors.

Today I want to discuss commas.

Correct punctuation is important. A small change in its use can have a large difference in meaning. Take, for instance, the following common grammar joke:

An English professor wrote on the board: A woman without her man is nothing.

The class was then asked to punctuate the sentence.

The men wrote: "A woman, without her man, is nothing."

The women wrote: "A woman: without her, man is nothing."

**Serial Commas.** Always use the serial, or Oxford, comma in a list of three or more items. Although serial commas slow down reading, and thus why they are not used in other writing genres, in technical writing they are required as they help ensure there are no ambiguities. For example:

*Ambiguous:* The director asked for separate reports on the ductility of tin, aluminum, gallium, copper and silver and gold.

*Better:* The director asked for separate reports on the ductility of tin, aluminum, gallium, copper, and silver and gold.

In the above examples, the director wanted five reports, with the first reports on individual metals only, and the fifth report on both silver and gold. Readers scanning a document will more likely misunderstand the first example than they would the second. Do not use the serial comma only in complicated series. Consistency is important in technical writing; you are creating a "user interface" to your documents and a user needs to trust that you will always use the serial comma. Otherwise, this can lead to confusion or extra work on the user's part.

For example, if early in the document you write, "the director requests separate reports on the ductility of tin, aluminum, gallium, copper, and silver and gold," and then later write, "the director also requests separate reports on the melting points of tin, aluminum, gallium, copper and silver at different atmospheric pressures," since you earlier used a serial comma, the user will expect that you are using it the second time and possibly misread. Your reader should know as they read that copper is a separate report from silver and not have to wait until after they have read past the last list item to figure that out.

The case for the Oxford comma: Sky News, on December 10, 2013, pushed the following news tweet: "Top stories: World leaders at Mandela tribute, Obama-Castro handshake and same-sex marriage date set..." There are many jokes showing the need, at times, for the serial comma, like "I would like to thank my parents, Lady Gaga and god" which can be easily read as your parents are Lady Gaga and god since not having a serial comma there makes "Lady Gaga and god" appear to be an appositive. Recall that an appositive is a noun or noun phrase that renames a noun: "my uncle, who is an idiot." For non-technical communication, what you get is a joke, but for technical communication, not having a serial comma can cause an important, if not critical, misreading. Always use the serial comma in technical writing. Leaving it out is not a minor error.

**Multiple Adjectives (Coordinate Adjectives).** There are two ways to test if adjectives are coordinate adjectives. (1) If you can reverse the order of the adjectives without changing the meaning, then the adjectives are coordinate. (2) Add "and" between the adjectives. If adding "and" between the adjective does not change the meaning of your sentence, then the adjectives coordinate. Adjectives describing color, number, or size usually cannot be made coordinate.

*Incorrect:* The noisy longhaired cat had several, distinguishable cries.

Test 1: Changing the order to “longhair noisy” does not change the meaning of the sentence; however, “distinguishable several” does not make sense—thus, the last two adjectives are not coordinate.

Test 2: Adding “and” between “longhair” and “noisy” does not change the meaning of the sentence; however, “several and distinguishable” does not make sense—thus, the last two adjectives are not coordinate.

*Correct:* The noisy, longhaired cat had several distinguishable cries.

**Transitions.** Use commas to set off a transition or transitional expression; however, use a semicolon or a period before a conjunctive adverb or transitional expression that connects two independent clauses. Exception: when the transition is not being used as an intensifier or for emphasis, and blends smoothly with the sentence, needing little or no pause in reading, a comma does not need to come after it.

*Correct:* In addition, the VASIMR<sup>®</sup> engine's lack of electrodes means greater reliability.

*Correct:* JPL is involved with missions other than planetary exploration; for example, its Airborne Snow Observatory is an Earth-based mission designed to collect data on the snow melt flowing out of major water basins in the western United States.

The transition “however” is always set off with commas (or a semicolon and a comma). Exception: when “however” is used with the meaning “no matter how” it does not need a comma.

*Correct:* Mars is at opposition on May 22, 2016; however, Mars will be closer to the Earth when it is at opposition on July 27, 2018.

*Correct:* However many times the team tried, they could not win the DARPA Robotics Challenge. (“However” in this instance means “no matter how.”)

The conjunction “**while**” is preceded by a comma only when it means “whereas<sup>1</sup>” (even though, in spite of the fact that). In general, when comparing two things, use a comma.

*Correct:* The Viking 1 lander touched down on the western slope of Chryse Planitia, while the Viking 2 lander touched down at Utopia Planitia.

However, “while” does not require a comma when it means “at the same time that.”

*Correct:* I watched Neil Armstrong walk on the moon while I ate my TV dinner.

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<sup>1</sup> In legal documents “whereas” means “it being the fact that” or “accounting for the fact that.”

A final conjunction is used to join a clause that draws a conclusion or inference from a preceding clause. Final conjunctions include the following:

As a consequence	Hence	So then
Consequently	So	Thus
For	So that	Therefore

“For” and “so” are also often used as coordinating conjunctions (Fanboys: *For, and, nor, but, or, yet, and so*); however, they are punctuated differently when used as final conjunctions. Final conjunctions do not connect two independent sentences like coordinating conjunctions do. Connect the conclusion or inference clause to the main clause by making the clause beginning with the final conjunction a separate sentence, using a semicolon before the conjunction and a comma after, or adding a coordinating conjunction before the final conjunction.

*Incorrect:* The robot was constructed at the corporate lab where I work, therefore, it is owned by the corporation.

*Correct:* The robot was constructed at the corporate lab where I work. Therefore, it is owned by the corporation.

*Correct:* The robot was constructed at the corporate lab where I work; therefore, it is owned by the corporation.

*Correct:* The robot was constructed at the corporate lab where I work; it is, therefore, owned by the corporation.

*Correct:* The robot was constructed at the corporate lab where I work, and therefore it is owned by the corporation.

Final conjunctions sometimes introduce phrases within sentences.

*Correct:* Robots constructed in a corporate lab are considered corporate property, hence the robot I built is owned by the corporation, and therefore I cannot publish the details of its construction on my DIY robotics blog.

**Compound Predicates.** A predicate is the part of a sentence that consists of a verb and any of its complements. The predicate tells the reader what the subject is doing or what is being done to the subject. A compound predicate is when one subject has two or more predicates where the subject is not repeated.

*Incorrect:* I meant to buy tickets for the magic show, but ran out of time.

*Correct:* I meant to buy tickets for the magic show but ran out of time.

When the subject is repeated, then the sentence becomes a compound sentence, which does use a comma:

*Incorrect:* I meant to buy tickets for the magic show but I ran out of time.

*Correct:* I meant to buy tickets for the magic show, but I ran out of time.

Sometimes, however, a comma is needed in a compound predicate to help with clarity:

The engineer saw her colleague had entered the lab and turned on the test equipment.

The engineer saw her colleague had entered the lab, and turned on the test equipment.

This subject is “engineer” and the compound predicate is “saw...and turned”; however, because the first object also has a verb phrase “had entered,” the reader can become confused and think that the compound predicate is “had entered..and turned on” when the compound predicate is actually “saw...and turned on..” Without the comma, the sentence can easily be misread as the colleague being the one that turned on the test equipment. With the comma, the engineer is the one who turned on the test equipment. Though you probably should rewrite the sentence to make it even clearer (remember, your readers can be skimming or scanning).

The engineer waited to turn on the test equipment until she saw her colleague enter the lab.

**Introductory Phrases.** Commas are usually used after an introductory participial phrase; however, if an adverbial infinitive phrase is the subject of the sentence, do not use a comma between the phrase and its verb.

*Correct:* After checking the instruments, the technician left the lab.

*Correct:* To test the robot, we need to power it up first.

*Incorrect:* To always proofread your writing, is a smart habit.

*Correct:* To always proofread your writing is a smart habit.

Use a comma after an introductory adverbial phrase. The comma lets the reader know they are at the end of the introductory phrase.

*Correct:* Although the robot was thoroughly tested, it failed on the first day of the DARPA Robotics Challenge.

Commas are usually used after an introductory prepositional phrase longer than three words; however, use a comma for a short phrase to emphasize the phrase or to prevent the sentence from being misread.

*Correct:* After the robot was built, the technicians took a day off.

*Incorrect:* Once inside the robot was ready to run.

*Correct:* Once inside, the robot was ready to run.

*Correct:* Between 1066 and 1087, the Saxons repeatedly organized rebellions against William the Conqueror.

*Correct:* In 1066 Duke William of Normandy defeated King Harold II at Hastings.

*Correct:* In 1972, the last Apollo mission landed on the Moon.

(Here the comma is added to emphasize how long ago the last landing was.)

When an absolute phrase or an adverb modifies the entire sentence, use a comma.

*Incorrect:* The clouds clearing away for the first time in three days we were finally able to view Saturn's rings through the telescope.

*Correct:* The clouds clearing away for the first time in three days, we were finally able to view Saturn's rings through the telescope.

*Incorrect:* Finally the experimental robot was completed.

*Correct:* Finally, the experimental robot was completed.

## Clarity

Technical writing requires clarity as the purpose for the writing is to communicate information effectively and efficiently to a busy reader who *needs* to understand the material. Reread your writing, looking to see how it could be misread. Have a peer review it as well (someone who will give you honest feedback). If a sentence needs to be read twice to be understood, it needs to be rewritten. You will not prevent all misreads, but you need to make an honest effort to reduce the possibility of misreading as low as you can.

## Closing

If you have questions, please contact me via email or the course Moodle page (forum or messaging service). Do not forget to do your assigned readings and to read *Merchant's English Usage Guide for Technical Writers* located at [davidmmerchant.com/merchants-english-usage-guide-for-technical-writers/](http://davidmmerchant.com/merchants-english-usage-guide-for-technical-writers/) and refer to it as you write.