Simple Rules for Improving Credibility--
How to Avoid Common Errors in Writing and Source Citation

No matter how well we know rules for spelling, grammar, punctuation, and usage and for citing sources, all of us have made mistakes in our prose. However, numerous errors in a document hamper reader understanding, cause readers to doubt the writer’s credibility and professionalism, and undermine the reputation of our research program. With more mechanically correct prose and source citations, you as a writer have a better chance of convincing readers about your ideas because readers will believe that you are in control. Below, we will review some of the more typical errors that come up in technical prose and how to correct them so that you can write more convincingly.

Rule 1—Parallel Construction and Punctuation in Bulleted and Numbered Lists

Entries in a list must be parallel in structure (grammatically and syntactically).

Incorrect: The testing will be conducted in a series of three steps:
1. Preparing standards
2. Conduct acid digestion
3. Interpretation of the analytical results

(Note that words “preparing” and “conduct” are presented in different verb forms, while the word “interpretation” is a noun.)

Correct: The testing will be conducted in a series of three steps:
1. Preparing standards
2. Conducting acid digestion
3. Interpreting the analytical results

Another way to rectify problems with parallelism in a list is to use complete sentences and periods for each item in the list.

Correct: The testing will be conducted as follows:
• The first step is to prepare standards.
• The second step is to conduct acid digestion.
• The third step is to interpret the analytical results.

Rule 2—Abbreviations and Acronyms

An abbreviation or acronym should be spelled out after its first mention in the body of the document followed by the abbreviation or acronym in parentheses. Once an acronym or abbreviation is defined, consistently use the acronym through the remainder of the document except at the start of paragraphs and sentences, where the full, spelled-out form is appropriate. In a lengthy document, you may wish to spell out the acronym more often, say at the start of each section or chapter. Abbreviate a term only if you plan to use repeatedly through the document. Abbreviations and acronyms that are defined in an abstract or executive summary should be redefined in the body of the document.
Rule 3–Unit Modifiers
Hyphens are parts of unit modifiers, which are phrases or clauses of two or more words that precede a noun to modify it. The following are examples of unit modifiers:

- 15-page fax
- mud-like substance
- 500-kV transmission line
- bench-scale experiment

As a simple test, apply each modifier to the noun separately; if the phrase does not make sense with just one of the modifying words, then a hyphen is necessary.

Do not hyphenate two-word modifiers if the first word is an adverb ending in “ly.” The adverb is actually describing the other word it is paired with rather than the noun being modified.

Incorrect: cementitiously-stabilized soil
Correct: cementitiously stabilized soil

Do not hyphenate two-word modifiers that appear after the noun they modify.

Incorrect: a modeling system that is computer-based
Correct: a modeling system that is computer based
Correct: a computer-based modeling system

Rule 4–Samples Versus Specimens
In general, you collect “samples” and test “specimens.”

Rule 5–Mechanics of Punctuation
The Comma
The comma is one of the hardest marks of punctuation to master because of its great versatility. It is a signal that some element, some word or cluster of related words, is being set off from a main clause for some reason. Following are some rules, conventions, and examples for commas that our program uses.

In a series of three or more items, consistently use a comma between the “and” or the “or” and the last element:

- The engineer, hydrologist, or geologist can perform the evaluation.
- Transport can be minimized by reduction, absorption, and precipitation mechanisms.

If you are joining two independent clauses (i.e., groups of words that can stand alone as sentences) together with a coordinating conjunction like and, but, so, for, or, and yet, then a comma is necessary before the conjunction:

Incorrect: The testing sequence included lab-scale hydraulic conductivity testing and the results were compared to field-scale data.
Correct: The testing sequence included lab-scale hydraulic conductivity testing, and the results were compared to field-scale data.

For a series of adjectives with more than one adjective modifying the same noun, the general rule is to use a comma if “and” could replace the comma without the phrase sounding awkward or if changing the order of the adjectives would read just as logically:
• Jointed, folded sandstone
• Moist, dense brown clay
• Full-scale, municipal-industrial wastewater treatment facilities

The Em Dash (—)

The *em dash* signals a pause that is more significant than that indicated by a comma. Used alone, the *em dash* suggests that the reader pay more attention to the part of the sentence that appears after it. Used in pairs, *em dashes* highlight words or phrases by separating them from the rest of the sentence. The *em dash* can introduce an explanation, an example, or a series; in addition, it can signal a sudden break in thought. Here are some examples:

The in situ treatment of chromium ore processing residue—converting hexavalent chromium to trivalent chromium—could be a viable means of achieving the goals of health and environmental protection.

Summary statistics—mean, median, and standard deviation—were determined for the sample sets.

The samples were analyzed for gasoline constituents—benzene, toluene, ethylbenzene, and xylenes.

The Colon (:)

The *colon* announces that additional information is following which readers take notice of because that information typically clarifies what has come before in the sentence. Use a colon to introduce a list, an important statement, a question, a quotation, or an appositive phrase, a summary, or an explanation. The following examples show colons used correctly:

Three volatile organic compounds (VOCs) were used as organic contaminants: methylene chloride (MC), trichloroethylene (TCE), and toluene (TOL).

Bacteria grow by cell division: one cell divides into two, two cells divides into four, and so on.

In technical writing, a colon must always follow a complete statement or an independent clause, but must never be used as a break within an independent clause.

Incorrect: The major flaw of the experimental method is: controls and blanks were not incorporated.

Correct: The major flaw of the experimental method is controls and blanks were not incorporated.

Correct: The major flaw of the experimental method is as follows: controls and blanks were not incorporated.

The Semicolon (;)

The *semicolon* most typically joins together sentences that are closely connected in thought, signaling that readers should pay attention to their relationship (i.e., the second may be amplifying the first, contrasting it, suggesting a causal connection, etc.), especially if there is no transitional phrase like “in addition,” or conjunctive adverb like “however” which makes the relationship plainly obvious. Here are several examples:

Readers will not spend the extra time needed to comprehend complex, grammatically flawed text; they simply will not read it at all!

The experimental columns will be sampled twice a day; this will ensure the measurement of the breakthrough point.

Semicolons are also used to separate elements in a series containing internal punctuation to
signal groupings or units of information. Using semicolons in such instances helps avoid confusion in lengthy, complex sentences.

The report contains key problems: no executive summary, which fails to summarize the key points for busy readers; numerous spelling errors, which undermine the writer’s accuracy and credibility; incorrect in-text citations, which do not credit sources sufficiently; and no captions for the figures, which leave readers to try to figure out the reasons for their inclusion.

Semicolons should not be used to separate dependent clauses from the main or independent clause to which they are attached. Typically, in this case, a comma is the appropriate mark of punctuation instead.

Incorrect: The report contains key problems; the most exasperating of which is the number of spelling errors.

Correct: The report contains key problems, the most exasperating of which is the number of spelling errors.

Parentheses ( )

Parentheses offer writers the opportunity to signal relative importance. They set off material and, more often than not, dilute the force of the statement within them. Sometimes, however, parentheses are used to drive a point home though not as dramatically as the em dash does; instead, parentheses quietly accommodate an extra bit of information, an example, a comment, or an aside. Following are some examples:

The shallow sediment at Dundalk Marine Terminal is characteristic of lacustrine deposits (stratified layers of silt, clay, and sand with shell fragments).

Any salvageable or recyclable instrumentation (moisture probes, thermistors, and fittings) will be saved, decontaminated, and returned to the laboratory manager.

The results show a steady decline in VOC concentrations in the upper reservoir of the column (likely a result of losses through the vinyl gaskets).

No evidence of significant biological activity is apparent at the downgradient or sidegradient monitoring wells. (This is not unexpected since there is no indication of significant VOC impacts at either location.)


For in-text citations, use (Author Year) format:

• Tinjum (2008) showed that…
• (Tinjum 2008)
• (Tinjum and Benson 2008)
• (Tinjum et al. 2008)
• (Tinjum et al. 2008; Chrysoochou et al. 2007)

That is, use the last name of the authors if the cited publication has one or two authors. Use the last name of the first author followed by the Latin abbreviation “et al.” (which stands for et alium, meaning “and others”) when the cited publication has three or more authors.

For your reference section, use our established standard for Thesis/Dissertation work:


Correct reference examples follow:


For references,

1. You need to follow the correct, established format for all references consistently.
2. There are absolutely no excuses for incorrect spellings of author names!
3. For internal documents such as theses and dissertations, use journal abbreviations that are standardized in Thomas Reuters’ *Web of Science*. Common journal abbreviations for the UW–Madison Geoengineering Program include
   - ASCE Geotechnical Special Publication–*Geotech. SP.*
   - ASTM Geotechnical Testing Journal–*Geotech. Test. J.*
   - Canadian Geotechnical Journal–*Can. Geotech. J.*
   - Environmental Science and Technology–*Environ. Sci. Technol.*
   - Geosynthetics International–*Geosynth. Int.*
   - Geotextiles and Geomembranes–*Geotext. Geomembranes*
   - Vadose Zone Journal–*Vadose Zone J.*

4. For external documents such as conference proceedings and journals, use the exact format required by that organization. Typically, publications associated with organizations such as American Society of Civil Engineers (ASCE), ASTM International, and Transportation Research Board (TRB) have standard guidelines that tell you exactly what format they require for references.

**Rule 7–Unsupported Use of References**

*Only* cite references that produce actual data, analysis, procedural development, or modeling and *not* those that restate or synthesize the work of others. For example, “Hexavalent chromium is toxic through oral and dermal exposure” (Geelhoed et al. 2002) is an inappropriate citation because Geelhoed et al. (2002) is a model paper that studied Cr(VI) mobility, not the health impacts of Cr(VI), and thus it should not be cited in this context. Only cite the original source of information rather than a secondary source that referred to the material from the original source.


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