

Checklist to Correct 10 Common Errors in Technical Papers and Reports

- ❑ **1. Faulty organization.** Why is logical organization so important? A well-chosen structure for a paper or report guides readers comfortably through the content and increases readers' understanding. Within report templates, use familiar organizational patterns such as the following:
 - **Order of importance** for readers who are apt to agree with your conclusions and recommendations. Begin the paper or report with the information of greatest interest to readers. Provide an informative abstract or summary for busy decision makers.
 - **Reverse order of importance** for readers who may disagree with your conclusions or recommendations. In persuasive documents (such as recommendations when readers may not at first agree or when you have to refuse a request but want to maintain readers' goodwill), create common ground and present your rationale before your recommendation or refusal.
 - **Chronological order** for site visits and trips reports. Since methodical time order can bury critical information, preface your chronology with a summary that captures your most important findings and recommendations.
 - **Spatial or sequential order** for process descriptions and instructions. Before taking readers into the details of your spatial description (moving north to south, left to right, or clockwise, for example) or of your linear process or procedure, orient your readers with an overview.
 - **Comparisons** to juxtapose advantages and disadvantages. Present the evaluation criteria in order of importance to the decision makers.
- ❑ **2. Failure to provide enough context to orient readers.** Are readers prepared intellectually to understand your paper or report? To help ensure their understanding, begin with an Introduction. And consider providing a Background section that creates common ground. List and explain the assumptions that are the basis for your approach and findings. Introduce any specialized terms and abbreviations. Write a purpose statement that predicts the contents of the paper or report.
- ❑ **3. Failure to guide readers through the content.** What format devices have you used to make your paper's or report's structure immediately evident to readers? Use a Table of Contents as well as specific, predictive topic headings and subheadings. Introduce each new section with a lead paragraph or sentence. Use transitional sentences to introduce illustrations. Also, use lists to increase the accessibility and readability of content you want to emphasize.
- ❑ **4. Failure to provide enough supporting description and detail.** Consider your readers: Do they understand the significance of the information? Do they share your level of expertise? Anticipate and answer readers' questions such as *Who?*, *What?*, *Where?*, *When?*, *Why?*, *How?*, and even *So What?* Provide definitions and examples. Explain the benefits/rationale of approaches and features. For example:
 - **Project Status Reports.** Answer the questions: *What is the status of the project?* and *What happens next?* Describe positive outcomes achieved in this reporting timeframe and the benefits to the organization of those outcomes, any significant information (such as

increased/reduced risk to schedule, budget, or outcomes) that the Management Team should be made aware of, and any Lessons Learned or solutions to problems that are important to share.

- **Recommendations.** Provide enough context/background to help the audience understand the problem and your proposed solution. List the criteria for successfully resolving the problem and evaluating the solution. Explain the advantages and disadvantages of your solution versus alternative solutions.
- **Commendations.** State what was done and how it was done as well as the benefits to the organization of the achievement/contribution. Explain how the achievement aligns with the organization's mission or a specific goal.

❑ **5. Poor use of illustrations.** Where can you add depth and visual appeal to your paper or report? Illustrations add interest and texture to a presentation. In your text, to illustrate your topic, you can provide definitions and examples. Also use graphics such as charts, drawings, tables, etc., to clarify your topic or provide supplementary content. Apply these suggestions:

- **Select the type of illustration to best make your point.** For example, keep in mind that tables make data quickly accessible but are less memorable than other types of illustrations. You may require several versions of one illustration, such as an overview and then different aspects of the overview presented with more detail.
- **Ensure that each illustration can stand alone for readers who may look at only your illustrations or at your illustrations first and then the text.** Increase the specificity of illustration titles. Focus readers' attention with arrows or shading. Use a caption to highlight the illustration's "take away"—what the reader should conclude from viewing your illustration.

❑ **6. Lack of consistency.** Why is consistency so important for technical writers?

Inconsistency in format and wording may distract and confuse readers and affect their perception of you as a reliable, credible author. Consistency improves the paper's or report's flow and clarity and thereby readers' comprehension. To help ensure consistency throughout a paper or report:

- As you write and edit, apply the standards and rules of your organization's style guide (or the Writer's Guide of the organization to whom you are submitting a paper). Have the guide open and ready for quick reference.
- Create a paper- or report-specific style guide including standards for capitalization, enumeration, graphics, headings, numbers, paragraphing, punctuation, and spacing; for abbreviations, spelling, and use of terminology; and for how you develop comparable topics. Have this guide open and ready for quick reference.
- Create a paper- or report-specific glossary of terms and abbreviations. Have the glossary open to allow your reference, and update it as you work on the paper/report.
- Use your computer's features such as Microsoft Word **Insert>Quick Parts** to save re-usable wording and **File>Save as>Word Template** to create re-usable document outlines/models from previously written documents. Annotate each template with prompts describing the content to insert into each section. Create placeholders for cover pages, tables of contents, acronym lists, glossaries, headings, titles and captions for graphics, as well as reference lists. Insert standard language such as disclaimers. And create links to useful documents that provide examples of preferred writing style and effective use of graphics or re-usable content.

- Within each section of your paper or report, use familiar patterns to organize your content (such as Order of Importance, Chronological Order, or Sequential Order).

With consistency, your writing style will “disappear,” and both you and your readers will focus on your paper’s/report’s content.

- ❑ **7. Unclear, ambiguous wording.** How do you ensure that your sentences can be read once and immediately understood as intended?
- Delete unnecessary words (such as *actually* and *very*) and worthless phrases (such as *It is important to note that*) that obscure meaning.
 - Keep only those words that add meaning to a sentence. Also keep words that help readers correctly determine a word’s grammatical use (such as the articles *a*, *an*, and *the* used before nouns) or predict a sentence’s structure (such as the relative pronoun *that*, signaling an embedded clause).
 - Translate any specialized terminology that may be unfamiliar to less expert readers or that may have different meanings in different technical contexts or for different technical disciplines.
 - Use precise words with only one meaning. (For example, avoid *sufficient* and *reader-friendly*. Those words may have different meanings for different readers. Depending upon context, even common words such as *since* may be ambiguous: does *since* mean *because* or *since the time that*?) Use factual, literal wording. Consider how sentences would translate into another language.
 - Include the information that is essential to readers’ understanding each sentence individually and your paper or report as a whole.
 - Correct any vague pronoun use. Use pronouns precisely. Since a pronoun must refer to a specific noun, in each paragraph, introduce the antecedent noun before using each pronoun. Be especially careful with the pronoun *it* and with the demonstrative pronouns (*this*, *that*, *these*, and *those*).
 - Ensure that you have used familiar vocabulary as well as kept sentences and paragraphs short. Enable Microsoft Word’s **Readability** feature for objective feedback on the readability of your writing style.
- ❑ **8. Poorly written Methods sections.** The Methods section of a paper or report describes what was done to answer the technical question or to solve the problem posed in your Introduction. The validity of the whole paper or report rests on the Methods section. How do you ensure a clear, credible, sufficiently detailed, and logically organized description of your methodology?
- Consider writing the Methods section while you complete the work, when details are fresh in your mind.
 - Follow the established Methods format for your area of expertise. For example, information technology and social sciences may use a format such as the following: (1) provide a **methodology overview**, (2) describe the **design concept** including how results will be measured and how your evaluation terminology will be defined/quantified, and (3) describe the **procedure** step by step.
 - Provide enough supporting description to allow readers to evaluate or replicate the procedure. Mention all controls and identify specific equipment, material, or other

resources that are critical to the success of the experiment/study/work. Include any Lessons Learned or cautions that will be helpful to those replicating the procedure.

- Provide cross-references to resources and supporting documentation. Cite the author(s) of well-established protocols. Describe, provide the rationale for, and illustrate any modifications to usual protocols.
- Ensure that the Methods section aligns with the Results and Conclusions sections of your report. Cross-check those three sections for consistency and completeness.

❑ **9. Unnecessary, inaccurate, or out-of-date content.** When you are very familiar with the information presented in the paper or report, how do you maintain objectivity to ensure that the content is pertinent, accurate, and current?

- Clearly define the purpose and scope of your paper or report, and consider the expectations and requirements of your readers. Include only information that supports your purpose, is within your scope, and meets your readers' needs. Do not include information or graphics just because you have them at hand.
- Once your outline is prepared, request feedback from expert peers on the content you intend to include in/exclude from your paper or report.
- To identify errors in fact that can immediately destroy credibility, proofread your content (especially numerical data and the spelling of names and specialized terminology) against your source material. Check all computations. Check data in the technical discussion as well as in tables and charts. Watch for obvious but common numerical errors such as corrupted numbers (*a* instead of *b*), transposed numbers (*ba* instead of *ab*), and omitted numbers (*b* instead of *ab*).
- Read edited sections of your paper or report against draft versions, watching for omitted words and sentences as well as misplaced insertions that can change sentence meaning.
- Request that an expert peer review the paper or report for content accuracy and currency.

❑ **10. Mechanical errors.** When you review your own writing, you may read what you intended to type rather than what you did type. Or you may miss errors resulting from cutting and pasting words or sentences. How do you ensure that your paper or report is free of mechanical errors?

- Use a checklist to proofread methodically for errors in punctuation, spelling, usage, grammar, and sentence structure. Especially check for commonly confused words (for example, *its/it's* and *their/there*), subject-verb agreement, precise pronoun use, too-long sentences, as well as omitted letters and words.
- Proofread separately for errors that you typically make. For example, a fast typist may omit letters at the ends of words.
- Read sections and paragraphs out of order. As you read (out loud if you can), touch each word with the eraser of a pencil.
- Proofread illustrations separately and against their text introductions and against their data sources. Check all computations. Ensure that the final version of each illustration aligns with the final version of the text.
- Read the paper or report against an earlier draft, paying special attention to sections where there have been changes.
- Request that an individual with good proofreading skills review the paper or report to find any mechanical errors.