The Role of Vocabulary in Technical Communication: Challenges, Trends, and Solutions

Daniel O. Agbo
Missouri University of Science and Technology, Rolla, USA

Abstract

Vocabulary is the key element of technical communication, shaping the way complex ideas are broken down into simple, actionable formats. In this paper, I examined into the role of vocabulary in curating clear, precise, and cultural adaptable documents in technical communication. I looked at emerging trends, such as inclusive language and the influence of AI, and confront challenges like jargon overload and inconsistent use of terminology in documentation. By combining personal insights, practical examples, and academic research, this article offers actionable strategies for navigating the evolving demands of vocabulary in technical communication.

Keyword: vocabulary, technical communication, trends, and challenges

1. Introduction

Have you ever read a user manual and felt like you were trying to understand an old script? Or perhaps you have received instructions that left you thinking and, wondering what the message means or if the writer was speaking a different language. Communication in occurs through modes like text, audio, images, and manuals both printed and online. However, using the wrong vocabulary could misunderstanding or misinformation.

In the field of technical communication, vocabulary is more than just a collection of words. It's a foundation that determines how effectively ideas are communicated. Whether you are explaining how to use develop a product or troubleshoot a piece of equipment or document a project development process, using the appropriate words can mean the difference between the success and failure of the process. Technology and industries are changing rapidly; so too does the fluid vocabulary we use in various fields. Technical communicators today face a growing list of demands: translation and localization, risk management processes, social and cultural values, meeting up with globalization, incorporating inclusive language, and staying ahead of technological advancements. This article explores how vocabulary shapes technical and professional communication and suggests solutions to the challenges that professionals encounter in their everyday work.

2. The Power of Vocabulary in Technical Communication

Accuracy and Precision

In the world of technical communication, especially for fields like medicine and the military, a single word can carry a heavy burden. Imagine reading a medical prescription label where "twice daily" is mistakenly written as "use often." The difference here isn't just choice of word, it could be life-threatening.

Accuracy and precision are particularly critical in fields such as medicine, aerospace, engineering, and software development. A personal example comes to mind: during a software migration project, a colleague once entered the numbers "0000" to mean "00.00." However, for our IT team, ".00" meant "cents." That simple misunderstanding caused a significant delay. Lesson learned: words and numbers matter, especially when the stakes are high.

Consistency

Think of building a house where the developer's blueprint uses "beam" in one section and "pillar" in another for the same structural element. Would you trust the construction? I don't think so. Similarly, inconsistency in terminology can undermine trust in technical documents.

For example, the global organization (ISO) International Organization for Standardization stresses the importance of consistent vocabulary across the board in documents to avoid misinterpretation or confusion. An industry colleague once shared how inconsistency in terminology led to a multimillion-dollar dispute between contractors during a software development project because the term "completed" was interpreted differently by both parties: the contractor wrote "completed" in the documentation; however, the project was never deployed to the live environment and thus was never used.

Audience Understanding

It is important for technical communicators to know their audience. Writing for an audience of civil engineers requires a different vocabulary than writing for end-users. A manual for a truck builders might include terms like "safety regulations" and "screw guide" for developers, but would simplify these for consumers into "speed limit" and "nozzle."

As a graduate teaching assistant, I witnessed firsthand how adapting vocabulary for different audiences can transform understanding. A student who struggled to comprehend a technical concept suddenly understood it when the explanation was reframed using practical and familiar language.

3. **Trends Shaping Vocabulary in Technical Communication**

Emerging Technologies and AI
Since the introduction of generative (Gen AI) and artificial intelligence (AI), technical communicators must now keep pace. Artificial Intelligence tools like ZeroGPT, and Grammarly are now not only presently used to write and proofread documents, but they also introduce new jargon into our vocabulary—think terms like "prompt engineering," or "reinforcement learning."

For example, a technical writer in the automotive industry might now have to explain

AI-driven features like adaptive cruise control. This involves not only learning the terminology but ensuring it is understood and communicated in a way that makes sense for drivers who are not technology inclined.

Cultural Localization
In a globalized world, words don't always translate seamlessly. For instance, a "fanny pack" or "waist bag" in the U.S. is called a "bum bag" in the U.K.—but the word "fanny" has a completely different connotation across the Atlantic. Additionally, the term "leather bag," as known in Africa is referred to as "plastic bag" in the U.S. I remember asking a waiter at Walmart for a "leather bag"; from the expression on the waiters face, I could tell the waiter didn't understand what I was saying until I pointed at the bag—surprisingly, the waiter shouted Oh! You mean "plastic bag ? ."

Technical communicators must navigate these cultural differences to create documents that are both globally acceptable and locally relevant. In my own experience during my virtual communication class working on a multilingual project, I found that even seemingly universal icons and colors, like a thumbs-up, the red color, and nodding the head, could be misinterpreted in certain cultures to mean different things. This highlighted how crucial it is to involve local reviewers and custodians in writing or formation process.

Inclusive and Unbiased Language
Inclusive language isn't just a trend; it's important in the growing world of diversity and inclusion. Technical communicators are rapidly adopting gender-neutral terms and avoiding discriminatory language that could raise concerns. For instance, replacing terms like "master/slave" in technology with "primary/secondary" reflects a shift toward sensitivity and inclusivity. Additionally, technical writers are also embracing and engaging with social justice issues in their work.

This shift also involves making documents accessible to people with disabilities. Using plain language and descriptive alt text for images ensures that everyone, regardless of

ability, does not feel excluded and can understand the content.

4. Challenges in Vocabulary Usage

Jargon Overload
Technical communication often involves breaking down complex concepts into simple and concise information. How do we determine the amount of jargon to include in our work? Striking a balance is challenging, particularly in specialized fields like technology. A technical document about data analysis might overwhelm readers if it goes too deeply into terms like "transposing of data", "data manipulation", and "data truncation" without adequate context.

Evolving Language
Industries like technology, construction, and pharmaceuticals are always changing, and so is the way we talk about them. Think about the word "cloud." Not long ago, it only described the fluffy things in the sky, but now it's a go-to term for online data storage. For technical communicators, keeping up with these changes means staying curious, learning constantly, and evolving with the language of the industries we serve.

Standardization Across Audiences

One of the most significant challenges is maintaining consistent terminology across diverse audiences. During a usability test for a product manual, we discovered that engineers interpreted the term "node" differently than the marketing team. This highlighted the need for standardized glossaries to ensure everyone is on the same page.

5. Solutions and Best Practices

Leveraging Standardized Terminology Databases
Tools like the ISO Terminology Database or the Microsoft Writing Style Guide can help maintain consistency and clarity. These resources provide vetted terminology for various industries, reducing the risk of miscommunication.

Working with Subject Matter Experts (SMEs)
SMEs are invaluable partners in ensuring technical accuracy. When writing a user manual for a medical device, for example, collaborating with doctors or biomedical engineers ensures the vocabulary aligns with industry standards.

Incorporating Usability Testing
Usability testing isn't just for software. It is a powerful tool for refining language. By observing how real users interact with documentation, technical communicators can identify confusing terms and adjust accordingly.

Adopting Inclusive Language Guidelines
Technical communication documents like the Conscious Style Guide and the American Medical Association's Inclusive Language manual provide strategies for avoiding biased language. For example, replacing "he/she" with "they" ensures gender neutrality without sacrificing clarity. Discourage the use of dehumanizing language.

6. Practical Implications for Professionals

For Industry Practitioners
For technical communicators in the field, these strategies are more than theoretical—they're actionable steps to enhance everyday work. Adopting standardized tools and collaborating with SMEs can streamline workflows and reduce errors.

For Scholars
Academics can contribute by researching how vocabulary impacts user comprehension and exploring how technologies like AI can assist in maintaining consistency and clarity. Future research might also investigate how cultural localization affects global audiences.

7. Conclusion

As industries continue to expand and globalize, the importance of precise, consistent, and culturally sensitive vocabulary will only increase. By remaining adaptable and committed to clarity, we can ensure that technical

Daniel Agbo

communication remains a vital and impactful practice.

References:

1. *Heard, S. B. (2022). The scientist's guide to writing: how to write more easily and effectively throughout your scientific career. Princeton University Press*

2. Casden, J., & Romani, D. (2021). *Language matters: Anti-oppressive software terminology.*https://doi.org/10.17615/nfgy-ys84

3. *Knodel, Mallory and ten Oliver, Niels. (August 24, 2020). "Terminology, power, and inclusive language inInternet-Drafts and RFCs", Work in Progress, draft-knodel-terminology-04. Internet Engineering Task Force(IETF). https://tools.ietf.org/id/draft-knodel-terminology-04.html*

4. International Organization for Standardization. (2023). *ISO 24183:2023 - Information and documentation — Internationalization of video content — Methods of creating and exchanging internationalized text for scripts, captions, and subtitles.* https://www.iso.org/obp/ui/en/#iso:std:iso:24183:ed-1:v1:en

5. Danowitz, A. (n.d.). *Assessing the Effects of Master Slave Terminology on Inclusivity in Engineering Education.*

6. https://www.ama-assn.org/system/files/ama-aamc-equity-guide.pdf