AI-Infused Technical Communication: Human-in-the-Loop Approaches to Writing, Pedagogy, and Practice

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Rationale for Topic

The field of technical communication is undergoing a structural shift in how writing is produced, managed, and evaluated due to the introduction of AI. This change is not simply about the emergence of large language models (LLMs) such as those that drive ChatGPT, Claude, Gemini, and Copilot; it represents a fundamental reconfiguration of the writing process. As Stephen Jay Gould's theory of 'punctuated equilibrium' reminds us, long periods of stability can be disrupted by periods of rapid transformation. What is emerging is a complex ecology in which AI handles certain writing and revision functions while human communicators provide oversight, context, and ethical guidance. This human-in-the-loop (HITL) configuration is becoming essential for ensuring quality and accountability in AI-infused workflows. Understanding these shifts is critical for both preparing students to enter AI-rich workplaces and helping professionals adapt their practices to new technological realities.

Because of these shifts, researchers, practitioners, and teachers are experiencing a move from human-authored to human-machine co-authored communication. In both workplace and classroom settings, generative AI systems are beginning to function as collaborators capable of taking on discrete roles (e.g., idea generator, first drafter, reviser, formatter), fundamentally altering how tasks are sequenced and who performs them [1], [2], [3], [4]. This is not the occasional use of a peripheral tool; AI is becoming embedded in the very architecture of authoring platforms and content management systems, and thus is increasingly integral to end-user workflows. Such integration demands intentional human-in-the-loop (HITL) checkpoints where prompts are crafted, Retrieval Augmented Generation (RAG) knowledge bases are created, outputs are evaluated, and decisions are made about when automation is acceptable [1], [4], [5], [6].

As AI becomes a presence in writing workflows, the result is a new form of rhetorical load sharing [1], [2]. Lower-order tasks (e.g., paraphrasing, summary, surface-level clarity, style enforcement, keyword optimization) can be delegated to AI, allowing human communicators to focus on higher-order concerns such as adapting content for specific audiences, ensuring ethical framing, and maintaining contextual nuance. This redistribution of rhetorical responsibility is reshaping the skill sets required in technical communication, privileging editorial judgment, critical evaluation, and ethical decision-making over manual production. Simultaneously, automation is reconfiguring professional roles: routine drafting, boilerplate generation, and some

localization tasks are increasingly machine-assisted, while new roles (e.g., prompt engineering, bias detection, compliance validation, AI-specific usability testing) emerge in their place [3], [6], [7], [8], [9].

These developments carry certain pedagogical implications. For educators, the shift may require moving beyond teaching students to generate text entirely on their own, toward equipping them with strategies for managing and critically engaging with AI-infused work [4], [10], [11]. For practitioners, the challenge is balancing efficiency gains with accuracy, accountability, and ethical compliance in real-world deliverables [6], [9], [12]. Across both contexts, structured frameworks are urgently needed to guide AI integration. Without them, adoption risks becoming ad hoc, inconsistent, and detrimental to professional standards [1], [2], [5], [6]. This special issue of *IEEE Transactions on Professional Communication* seeks scholarship that documents, critiques, and advances AI-infused writing practices and HITL approaches, building a shared knowledge base that addresses the pedagogical, professional, and research implications of this transformation.

The complexity of this shift also lends itself to thinking of AI adoption in technical communication as a matter of rhetorical and ethical decision-making that happens within a technology-mediated writing process, a focus that has always been central to the field. Though the conversation around AI is new and evolving at a pace rarely seen in the field, the scholarship that has already emerged is multifaceted. It includes the development of pedagogies for teaching AI literacy and responsible tool use [4], [10], [11]; the adaptation of research methods for studying AI-infused writing processes [2], [5]; the reporting of case studies from both classroom and industry contexts [6], [7], [8], [14]; and theoretical explorations of how AI redefines rhetorical labor, authorship, and professional identity [1], [6], [9], [12]. This body of work is too diverse to capture fully in a single paragraph, but we can draw several broad strokes:

- AI and HITL approaches now intersect with technical communication academically, professionally, and in the career trajectories of graduates entering AI-rich workplaces.
- While some specialized courses and initiatives focus exclusively on AI, AI-infused writing is quickly becoming a key focus within technical communication curricula, though it is not clear to what extent this focus has permeated across individual programs.
- The introduction of AI into our central identity requires the field to develop new pedagogies, ethical frameworks, and workflow models that enable us to teach and apply AI-infused writing responsibly within our programs and professional practice.
- We must also tie these academic developments to evolving workplace needs, including training for new professional roles that emerge as AI becomes a standard component of technical communication work.

This change has been so rapid that it’s no surprise so many scholars of technical communication are attempting to make sense of it. This issue will invite scholars thinking about these topics to help to articulate best practices, which will lead to the development of frameworks for sustainable, ethical, and effective adoption.

The Scholarship We’re Looking For

This special issue extends technical communication scholarship on AI from studies of individual tools and classroom practices to the level of integrated pedagogy, professional practice, and programmatic development across academic and workplace contexts. We are especially interested in contributions that document how technical communicators and organizations are

adopting, adapting, and evaluating AI-infused writing processes. Possible topics include, but are not limited to: workplace case studies of AI integration, rhetorical load sharing in HITL workflows, emerging professional roles and skill sets, compliance and localization practices, programmatic approaches to AI literacy, and the ethical and social justice implications of AI-infused communication. At the same time, we welcome studies that explore how academic programs prepare students to participate in these evolving practices. Together, these perspectives will help the field develop sustainable frameworks that connect pedagogy, research, and professional practice.

We invite submissions that address questions such as:

- How are students, early-career professionals, and practicing communicators being trained in AI-infused writing and HITL practices? What kinds of educational, credentialing, internship, mentoring, or workplace training experiences are emerging?
- What skill sets are essential for technical communicators working with AI? How are these skills, such as prompt engineering, rhetorical oversight, and AI output validation, taking shape in both workplace practice and academic preparation?
- What approaches, methods, and frameworks are being developed in industry and in higher education to support AI literacy and HITL practices? How do these approaches differ across contexts such as courses, professional workshops, internships, and organizational training programs?
- How do technical communicators ensure rigor, accountability, and ethical oversight when integrating AI into fast-moving industry contexts such as rapid prototyping, automated localization, or compliance review?
- What case studies illustrate the successes, challenges, or failures of AI integration in professional communication, and what lessons can be drawn from them?
- What terms, concepts, and methods in AI-infused writing are beginning to shift, and how should these shifts be reflected in evolving workplace standards and also in curricula?
- How do AI-infused writing practices intersect with broader commitments to inclusive design, accessibility, social justice, and ethical communication across professional and academic contexts?

Types of Projects

The types of research projects accepted for this special issue include:

- Research articles
- Integrative literature reviews
- Case studies
- Tutorials
- Teaching cases

For further details on these manuscript genres, please consult project formats supported by IEEE Transactions on Professional Communication at https://procomm.ieee.org/transactions-of-professional-communication/for-prospective-authors/guidelines-to-follow/

Submission Process

This special issue has a two-step review process (See below for timeline):

1. If you have a project that you believe is a good fit, send a 500-word abstract in Microsoft Word format summarizing your proposed article to the guest editors at

getto_ga@mercer.edu. The guest editors will use the abstracts to select authors, who will be invited to submit a complete draft.

2. Authors who are invited to submit a full article draft will have their manuscripts peer-reviewed. Based on these peer reviews, the guest editors will select articles for the special issue.

IMPORTANT: If you plan to present the results of a study involving human research subjects or will use examples from corporate or government communications, please obtain all approvals and permissions for publishing your results from your institution, company, and/or agency before you submit your abstract for review.

Timeline for Submissions

- Publication of call for proposals: **September 1, 2026**
- Abstract submission deadline: **October 15, 2026**
- Notification of authors: **November 15, 2026**
- Submission of complete drafts: **March 15, 2027**
- Reviews returned to authors: **June 1, 2027**
- Revised drafts submitted for second review: **August 1, 2027**
- Reviews returned to authors: **September 15, 2027**
- Final and complete articles submitted: **November 1, 2027**
- Editing of articles completed by guest editor(s): **December 1, 2027**
- Correction of proofs by article authors: **January/February 2028**
- Special issue published: **March 1, 2028**

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