

Academic writing with generative AI: Ethics, writing processes, and reflective practices

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Abstract

Generative artificial intelligence (AI) tools are increasingly used in academic writing, raising questions about ethics, authorship, learning, and the nature of scholarly work. This paper describes and reflects on a workshop on Academic Writing with AI conducted at IRMEC 2025. The workshop addressed three interconnected perspectives: (1) ethics, rules, and regulations governing academic integrity; (2) self-awareness in the writing process, drawing on established theories of writing as thinking; and (3) practical, reflective uses of AI tools in academic work. The workshop combined short conceptual inputs, individual and collaborative reflection exercises, and hands-on experimentation. Participant feedback indicated strong appreciation for the explicit focus on institutional rules and legal boundaries, as well as for the discussion of academic voice and identity in AI-supported writing. The paper argues that AI does not fundamentally change academic integrity principles, but it significantly alters writing practices, making reflexivity, transparency, and self-awareness more important than ever. The workshop format proved robust and reusable and may serve as a model for professional development initiatives addressing generative AI in higher education.

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Introduction

Generative AI tools have rapidly become part of academic writing practices. Large language models can assist with drafting, revising, summarising, translating, structuring arguments, and even generating code or analytical scripts. These developments have prompted intense debate across academia, focusing on issues such as plagiarism, authorship, transparency, learning, and the potential erosion of scholarly responsibility.

While many institutional responses have concentrated on rule-setting and compliance, there is a growing need to address how AI affects writing as a cognitive, rhetorical, and identity-forming practice. Academic writing is not merely a means of communicating finished knowledge; it is deeply intertwined with thinking, learning, and professional self-formation. Consequently, the use of AI in writing raises questions that go beyond detection or prohibition.

This paper presents and reflects on a workshop entitled *Academic Writing with AI*, designed to address these challenges in an integrated manner. Rather than positioning AI as either a threat or a solution, the workshop aimed to support researchers in developing reflective, responsible, and professionally grounded AI-supported writing practices. The workshop outline and content are documented in detail in the workshop materials.

The paper contributes a structured description of the workshop's conceptual foundations, pedagogical design, and practical activities, as well as a reflective account of how the workshop was received and what appeared to work particularly well.

Purpose and Design of the Workshop

The overarching purpose of the workshop was to explore how generative AI can be used in academic writing in ways that are both ethically sound and compliant with institutional and publisher rules, supportive of learning, thinking, and scholarly development, and practically useful in everyday academic work.

To achieve this, the workshop was organised around three perspectives:

- Ethics, rules, and regulations (academic integrity and professional responsibility)
- Self-awareness in the writing process (writing as thinking, problem-solving, and identity work)
- Practical tips and practices (reflective, efficient, and responsible uses of AI tools)

The workshop format combined short lectures, guided reflection exercises, and hands-on experimentation. This design was chosen to balance conceptual grounding with participants' immediate concerns and experiences.

The workshop was facilitated by the author, whose background includes more than two decades of research on writing, representation, and learning, with a particular focus on mathematical writing processes and the role of tools and media in thinking. This background informed the workshop's emphasis on literacy, understood as the interplay between tools, materialities, and meaning-making.

Ethics, Rules, and Regulations: Academic Integrity Revisited

Academic Integrity in the Age of Generative AI

A central message of the workshop was that generative AI does not change the principles of academic integrity, but it does change writing practices in ways that require these principles to be revisited and interpreted anew.

The workshop drew explicitly on the European Commission's (2025) Living Guidelines on the Responsible Use of Generative AI in Research, which articulate four core principles: reliability, honesty, respect, and accountability. These principles emphasise verification and reproducibility, transparency about AI use, respect for intellectual property and societal impact, and the continued responsibility of human researchers for all scholarly output.

In contrast to earlier ethical debates in academic writing, often centred on plagiarism, authorship disputes, or fabrication, AI introduces more fine-grained and process-level risks. These include uncritical reliance on generated text, blurred boundaries between authorial and tool-based contributions, and the outsourcing of reasoning processes that traditionally supported learning and scholarly judgement.

Institutional and Publisher Rules

The workshop highlighted that institutional and publisher guidelines differ in important details. While there is broad consensus that AI should be treated as a tool rather than an author, expectations regarding disclosure vary considerably. Some institutions require transparency only when AI contributes substantially to content or analysis, while others expect disclosure even for minor language editing.

Concrete examples from major publishers were discussed, including Springer's AI policies (Springer, n.d.) and Brill's reliance on COPE guidelines (COPE, n.d.). These examples helped participants see that ethical compliance is not only a matter of general principles, but also of situated, context-specific rule interpretation.

Exercises and Participant Reflections

Participants were invited to select one principle of academic integrity and reflect on its implications for a project they had brought to the conference.

This exercise proved effective in shifting discussion from abstract norms to concrete professional dilemmas.

A second exercise asked participants to identify a “borderline” use of AI (e.g., drafting a discussion section from notes) and plan how to conduct this practice in compliance with specific publisher rules. According to participant feedback, this activity was particularly valuable in clarifying where ethical boundaries are flexible and where they are firm.

Knowing Your Own Writing Process

Writing as Thinking

The second part of the workshop addressed writing not merely as text production, but as a core epistemic activity. Drawing on research from the 1980s to the early 2000s, three perspectives on writing were presented:

- Writing as discovery, where articulating ideas generates new insights (Galbraith, 2009).
- Writing as rhetorical problem-solving, where writers test and reshape arguments in relation to an imagined reader (Scardamalia & Bereiter, 1987).
- Writing as self-presentation and identity work, where writers perform identity and voice within academic communities (Ivanič, 1998; New London Group, 1996).

These perspectives emphasise that writing is deeply connected to learning, sense-making, and professional development.

Implications for AI-Supported Writing

Each perspective was used to analyse potential consequences of AI-supported writing. From a discovery perspective, AI may support idea generation but also risks displacing the writer’s own exploratory thinking. From a problem-solving perspective, AI can assist with reformulation but may also bypass the inferential work through which arguments are developed. From a self-presentation perspective, AI can influence tone, style, and positioning in ways that affect academic identity.

Participants were encouraged to reflect on a recent writing project and identify moments where these perspectives were particularly prominent, as well as moments where AI support might enhance or undermine them.

Media, Technology, and Thinking

The workshop further situated AI within a broader tradition of research on mediated cognition and instrumental genesis that we know so well in mathematics education. Writing technologies, from algebraic notation to word processors, have long shaped how scholars think and work (diSessa, 2000). AI can be understood as a particularly powerful medium that may

shift attention from detail-level reasoning to more abstract, prompt-level thinking.

Drawing on work in cognitive ergonomics, the workshop emphasised the bidirectional relationship between users and tools: tools shape thinking, but are also shaped by use. This perspective helped participants frame AI not as an external agent, but as a potential component of their personal writing instruments (Vérillon & Rabardel, 1995).

Practical Tips, Practices, and Sharing

The final part of the workshop focused on practical strategies for reflective AI use. Examples included:

- using speech-to-text for early drafting and feedback,
- employing AI for minimal editing rather than content generation,
- treating AI as a conversational partner for clarifying reasoning,
- automating repetitive tasks such as formatting or reference checking, and
- using AI-assisted programming for data analysis, with local execution and ethical safeguards.

Participants shared their own experiences and tips, which contributed to a collective repertoire of practices grounded in professional responsibility rather than efficiency alone.

Reflections on the Workshop and Participant Feedback

The workshop was well received, and most planned activities were completed within the allocated time. Participant feedback highlighted two aspects in particular:

1. The focus on rules and regulations was perceived as highly relevant, especially the opportunity to reflect on personal practices and explore how potentially concerning uses of AI could be reshaped into legally and ethically sound approaches.
2. The emphasis on voice and writing processes resonated strongly with participants, many of whom appreciated connecting AI use to established writing research rather than treating it as a purely technical issue.

Overall, the workshop appeared to strike a productive balance between normative guidance, theoretical grounding, and practical relevance. Several participants indicated that the format and content would be valuable for reuse in other academic contexts.

AI Use Statement

In the preparation of this manuscript, I have made use of OpenAI's ChatGPT model 5 for speech-to-text, and to improve the style/grammar

of selected parts of the text. All generated text has been reviewed and edited by myself, and I retain full responsibility for the content.

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