

Perceptions of Faculty Members and Graduate Students on Guidelines in the Face of Use of Text Generative Artificial Intelligence

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***Abstract.** Major scientific institutions worldwide have integrated ethics into their policies to promote sound scientific writing practices and to guide authors in the AI era. This article summarizes initial discussions on academic writing and presents a comparison of perspectives on the development of guidelines for scholars across four distinct academic disciplines in higher education. Additionally, we underscore the importance of understanding the perceptions of these academic participants, as this insight can support decision-making by academic leaders. Furthermore, this understanding is essential for reassessing technology literacy within the academic community, with the goal of preserving academic integrity.*

1. Recent AI Regulation Discussions in Brazil and Worldwide

It is observed that recent discussions on Artificial Intelligence (AI) regulation are on the rise in various communities in our society. Among them, the practices involving writing have been gaining traction among researchers and publishers, leading to the emergence of movements in the development of authorship guidelines for either articles or scientific papers. In a broader context, with the proposal to regulate AI with The Artificial Intelligence Act (AI Act), the European Union establishes obligations based on the potential risks and impact levels of AI. In Brazil, there is Bill, PL No. 2338, which addresses the use of AI and establishes general norms regarding the responsible use of systems classified as artificially intelligent (Brasil, 2023).

Despite this initial effort by the Brazilian government, it is important to mention that regulations need time for the involved parties to understand the subject better and for other sectors of society to participate in the ongoing debates (Pesquisa Fapesp, 2023). In universities, concerns about institutional policies on good practices and research integrity are not new, as in the case of the University of Campinas and the University of São Paulo. Nevertheless, these institutions do not specifically mention guidelines on the use of technologies but generally address authorship and misconduct issues, such as “guest authorship, ghost authorship, reciprocal agreements in authorship, pressured authorship, and uninformed authorship” (Consu, 2024), which does not guide what to do in the face of the reality of both features and capabilities of text generative AI. Likewise, in the

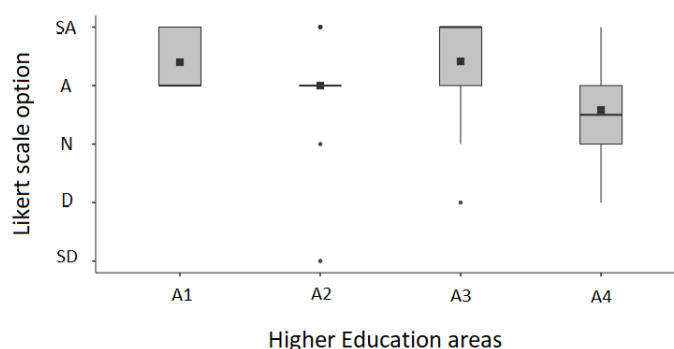
“Comitê de Boas Práticas Científicas da Universidade de São Paulo”, the authorship is addressed, but issues involved in technology are not mentioned.

Regarding ethical guidelines for scientific publication, the Committee on Publication Ethics (2023), in collaboration with the World Association of Medical Editors and the Journal of the American Medical Association, published that AI tools cannot meet authorship requirements, as they are not capable, like a human, of taking responsibility for what they write. Similarly, Science (2023), in its editorial policies in Science Journals: Editorial Policies, mentions that AI-generated texts cannot be used in articles published in scientific journals. Nature (2023), in conjunction with all Springer Nature journals, published two basic principles on the use of AI for authors regarding the non-credit of authorship to Large Language Model tools and that if a researcher uses these tools, they should document the use in the methods or acknowledgments sections. In the same direction, Elsevier (2023) published new publication policies on using AI-assisted technologies to provide transparency and guidance to the scientific community.

2. Perceptions of the Guidelines in Academic Writing in the Face of AI Age

Authorship involves reflecting on the actions an author initiates when publishing a work, creating opportunities for other works to be produced, and extending the role of the author beyond the work itself. This concept highlights the nature of how discourses exist, circulate, and function within society (Foucault, 1969). Consequently, it is essential to remain mindful of ethical behavior within scientific and academic practices.

Since last year, we have been investigating the perceptions of the academic community, including both graduate students and faculty members, to understand how their perspectives can contribute to ongoing discussions about AI guidelines in postgraduate programs. Our objective is to provide an overview of AI use in academic practices, particularly in tasks such as literature reviews. This research emphasizes the importance of these perceptions in shaping and informing AI-related guidelines while recognizing the differences across four distinct academic fields. One of the survey questions posed was, “Should my graduate program establish guidelines for the use of text generative AI?”



SA: Strongly Agree; A: Agree; N: Neutral; D: Disagree; SD: Strongly Disagree.

A1: Biological Sciences and Healing (14,7%); A2: Hard Sciences and Earth (25%). A3: Human Sciences, Social and Arts (42,6%); A4: Technological (17,6%)

Figure 1. Perceptions of thirty graduate students and thirty-eight faculty members about having guidelines for using AI in higher education programs at the University of Campinas.

The Kruskal-Wallis test, a non-parametric method used to compare the distributions of three or more independent groups, was applied to assess whether there are significant differences between the medians of the groups. While the test does not indicate which specific groups differ, the post-hoc Dwass-Steel-Critchlow-Fligner (DSCF) test was used for pairwise comparisons to identify these differences. The Kruskal-Wallis test resulted in a p-value of 0.02, indicating a significant difference in the distribution of at least one of the groups. As a result, multiple comparisons using the DSCF test showed a p-value of 0.03 between participants from the Human Sciences, Social and Arts (A3) and Technological (A4) groups, indicating a significant difference in their distributions, as illustrated in Figure 1. The p-values for the other group combinations were: $p_{A1-A2} = 0.64$, $p_{A1-A3} = 0.98$, $p_{A1-A4} = 0.11$, $p_{A2-A3} = 0.27$, and $p_{A2-A4} = 0.37$, indicating no significant differences and similar distributions of perceptions among individuals in those groups.

As part of our qualitative research, we also proposed complementary questions to allow participants to justify their Likert scale responses. This approach was necessary because, despite the statistical results, we cannot confirm our hypothesis of similar distributions across the independent groups based solely on statistical analysis. To gain deeper insights, we conducted a supplementary analysis using Natural Language Processing (NLP) techniques from the spaCy library, which enabled us to uncover additional details that may help clarify whether and how the distinct groups' fields are related to guidelines awareness in postgraduate programs. The qualitative results revealed different perspectives for interpreting these comparisons. As illustrated in Table 1, we compared the responses to generate a similarity score ranging from 0 to 1, where a score of 1 indicates high similarity.

Table 1. Similarity test of the texts related to the same question in Figure 1

	A1	A2	A3	A4
A1	-			
A2	0.47	-		
A3	0.41	0.53	-	
A4	0.49	0.54	0.50	-

The statistical test reveals a significant difference only between groups A3 and A4. However, this new approach using text analysis provides additional insights beyond the statistical outcomes, enriching our qualitative understanding of these groups and their perceptions. This indicates that we have two complementary methods of analysis: the statistical test and the text analysis, each offering unique contributions to a more comprehensive understanding of the data.

In summary, after closely examining the responses from groups A3 and A4, we found that both groups acknowledge the importance of discussing and establishing guidelines for the use of generative AI in academic research, particularly regarding ethics and education. However, the groups differ on key aspects, such as the autonomy of

postgraduate programs, the approach to developing these guidelines, and the balance between regulation and freedom. While A3 tends to be more conservative and focused on maintaining academic integrity, A4 is more open to experimentation and flexibility in the use of AI, provided that appropriate guidelines are in place.

As a result, although further analyses will be conducted in our research using all the other questions, this initial analysis can provide valuable insights for academic leaders and government officials. It can help them understand the importance of considering the academic community's perceptions before developing guidelines, aiding in decision-making related to academic writing practices and ethical behavior. Moreover, we believe that our findings could contribute to a reevaluation of technology literacy within the academic community, particularly regarding the boundaries of AI technologies and the skills of scholars at universities. Through this research, we aim to establish a pedagogical approach that mitigates unethical behavior while preserving academic integrity.

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