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GENERATIVE AI AND ACADEMIC KNOWLEDGE PRODUCTION: A SYSTEMATIC REVIEW OF ETHICAL, EPISTEMIC, AND GEOPOLITICAL DIMENSIONS

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Abstract

This systematic review examines how scholarly literature addresses generative artificial intelligence (GenAI) in academic writing and knowledge production. Following PRISMA reporting guidelines, it analyzes 217 journal articles published between 2020 and mid-2025 and retrieved from Scopus, Web of Science, and Lens. Bibliometric analysis maps publication trends, languages, venues, and author affiliations, while exploratory topic modeling and lexical analysis examine the ten most cited articles. Publications increased after 2022, and English accounts for 99.5% of the corpus. The most cited articles foreground educational and practical applications, while ethical and epistemic concerns also appear through lexical associations. Explicit geopolitical terminology is absent from this subset. These findings identify patterns within the retrieved literature and indicate the need for broader multilingual research on GenAI and the unequal conditions of academic knowledge production.

Keywords: GenAI; academic writing; knowledge production; epistemological implications; geopolitics of science.

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1 Introduction

The rise of generative artificial intelligence (GenAI) tools, particularly large language models (LLMs) such as ChatGPT, has introduced significant transformations in academic writing and knowledge production. These tools, capable of producing coherent and persuasive texts, have quickly gained traction among researchers, educators, and students, prompting (pun intended) renewed debates about authorship, development of academic voice (e.g., Finardi, 2025), human cognitive deficit, and the role of automation in intellectual labor and academic integrity. While initial reactions have focused on the novelty and efficiency of these technologies, broader questions have begun to emerge regarding their ethical use, epistemological consequences, and the shifting geopolitical dynamics in the production of global science (Finardi, in press).

In academic contexts, GenAI has been adopted as both a support tool for writing and a subject of inquiry in its own right. Scholars have explored its potential to assist with literature reviews, the provision of automated feedback, and even the co-authoring of scientific texts. However, this expanding presence also raises concerns about reliance on algorithmically generated knowledge, the standardization of discourse, the invisibility of knowledge produced in other languages besides English (e.g., França, 2025; Demeter et al., 2025; Qin et al., 2025), and, no less important, underlying biases and hallucinations observed in LLMs. As generative AI becomes increasingly integrated into academic writing, it risks exacerbating existing global inequities in knowledge production, privileging researchers and institutions in technologically dominant regions and languages while marginalizing those with limited access to AI infrastructure or training (Crawford et al., 2023; UNESCO, 2023). The epistemic implications are particularly relevant when considering whose knowledge is produced, validated, and amplified through these tools and whose is marginalized or rendered invisible.

Despite the growing number of publications discussing GenAI in higher education, few studies have systematically examined how the academic literature itself frames the use of these tools, particularly with regard to ethical, epistemological, and geopolitical tensions. There is a pressing need to understand not only what is being written about GenAI, but also whose voices dominate these narratives, what assumptions underpin their claims, and what issues remain underexplored. Mapping this landscape is essential to grasp the scope, blind spots, and future directions of this rapidly evolving field.

This study maps scholarly literature on GenAI in academic writing and knowledge production, examining publication patterns alongside the ethical, epistemic, and geopolitical dimensions addressed in the retrieved studies. It distinguishes between the distribution of publications across languages and institutional locations and the ways in which selected articles discuss the implications of GenAI.

The study addresses two research questions: (1) What publication patterns characterize the scholarly literature on GenAI in academic writing and knowledge

production? (2) How are ethical, epistemic, and geopolitical concerns represented in the ten most cited articles? To address these questions, we combine bibliometric analysis of 217 peer-reviewed journal articles published between 2020 and mid-2025 with an exploratory analysis of the ten most cited publications. By examining publication trends, thematic concentrations, and critical perspectives, the study contributes to understanding how GenAI is discussed in academic knowledge production and identifies areas requiring further investigation, particularly regarding linguistic diversity, epistemic justice, and geopolitical inequalities.

2 Review of Literature

2.1 The Rise of Generative Artificial Intelligence in Academia

Generative AI tools have gained increasing visibility in academic contexts, particularly following the public release of ChatGPT in November 2022. Their capacity to generate, revise, and synthesize texts has stimulated debates about their implications for teaching, learning, academic writing, and research. Although these technologies offer new possibilities for academic practices, their adoption also raises concerns about how knowledge is produced, validated, and disseminated (Fütterer et al., 2023). Beyond their educational applications, GenAI tools must therefore be examined in relation to the linguistic, epistemic, and geopolitical inequalities that characterise global knowledge production.

Recent developments in AI have stimulated substantial growth in academic research across multiple educational domains, including studies addressing research funding, conferences, scholarly publications, software tools, and institutional research practices (Chen et al., 2020). Yet, despite the use of AI in research and other academic practices, most of the existing research on AI in education has focused on reducing teachers' workload, promoting more contextualized learning for students, transforming assessment practices, and developing intelligent tutoring systems (Chaudhry & Kazim, 2022). As Crain et al. (2024) observe in their review on AI in higher education, AI has been applied to enhance learning outcomes, improve administrative efficiencies, and support personalized learning. However, challenges persist regarding the implications of AI for equity, diversity, and inclusion of knowledge produced and circulated in different regions and languages, as well as ethical considerations regarding the evolving roles of educators, researchers, authors and students.

2.2 GenAI and Academic Writing

AI tools have increasingly been used in academic writing and research, especially after the advent of ChatGPT. Jin et al. (2025) explain that GenAI is viewed as a tool for technical support and text development in academic writing while emphasizing that it is more than just a writing tool due to its transformative

potential. However, they also highlight the threats that GenAI could pose, such as technology addiction, lack of innovation and reinforcement of biases. A systematic literature review conducted by Khalifa and Albadawy (2024) revealed that AI helps facilitate academic writing and research in various ways: in idea generation and research design, content organization and structuring, drafting the literature review, data management and analysis, editing, reviewing and publishing, communication, outreach and compliance. Golan et al. (2023) converge with that idea, claiming that AI should be widely used in academic writing to save time and improve efficiency by aiding authors and researchers in the process of analysing data and writing papers; however, they agree with other claims in the literature that AI tools should not replace human innovative thinking, and authors should not rely on AI for critical thinking. Despite the potential benefits of GenAI for improving efficiency in academic writing, its implications for critical thinking, epistemic autonomy, and the diversity of knowledge produced and disseminated remain insufficiently understood and warrant further investigation.

Another facet of AI that merits consideration in terms of academic knowledge production is its dual role as a supportive tool and an interactive participant, especially when we consider multilingual users. In Wang et al.'s (2025) study with postdoctoral researchers, the authors found that AI has been viewed in different ways: as a mechanical system that simply produces answers, a social construct that is shaped by human interaction, or a form of distributed agency shared by humans and AI contributing to the meaning-making process. Within these different views of AI, there is a need for more studies on how AI tools can be used to enhance academic writing without jeopardizing the ecology of knowledges and languages in academia (e.g., Finardi et al., 2022; Finardi et al., 2023; França & Finardi, 2025).

2.3 Ethical Considerations in the Use of GenAI

The systematic review by Bond et al. (2024) suggests that ethical concerns have been continuously discussed in relation to GenAI. They emphasize that though AI can enhance educational experiences, it also poses significant ethical, methodological and pedagogical challenges associated with privacy and data protection, inequality generated by algorithmic bias, academic integrity, ethical behavior, and digital illiteracy. This view is further supported by Stahl and Eke (2024), who identify four major categories of ethical concerns associated with AI tools such as ChatGPT: social justice and rights, individual needs, culture and identity and environmental impact. As can be seen in the previous study and also suggested in the literature (Lee et al., 2021; Salas-Pilco & Yang, 2022; Tagare et al., 2025), it is evident that more research on issues permeating the ethical use of AI is needed, and more studies are warranted.

Notwithstanding the above claim and the growing use of AI in academic writing, how it should be used and the extent to which it should be employed is still an open question. Laher (2025), for example, refers to the boundaries of AI

use in academic writing, citing the guidelines issued by some reputed academic organizations. These guidelines specify that employing AI for minor linguistic improvements - such as grammar correction or stylistic editing - does not require formal disclosure. However, when AI tools are used to analyze data, generate figures or tables, or produce textual content, authors must disclose the use of AI, mentioning the name of the tool, as well as the version and the specific prompts used. Further, authors are expected to take full responsibility for the accuracy, originality, and ethical integrity of AI-generated content, ensuring that it remains free from bias, plagiarism and copyright violations. Reviewers are likewise cautioned against using AI tools to generate reviews for manuscripts. Thus, it is recommended that while AI tools can be used to improve academic writing, their use must be guided by transparency, responsibility, and a commitment to maintain academic integrity.

2.4 Geopolitical Dimensions and Linguistic Inequalities in AI-Mediated Knowledge

With the rapid digitalization of society and the emergence of AI tools such as ChatGPT, information has become increasingly accessible worldwide. However, these developments also raise questions about how information is transformed into scholarly knowledge and whose languages, perspectives, and epistemologies are represented in this process. Given that most widely used GenAI tools are predominantly trained on English-language data, their use may privilege English-language scholarship and reinforce existing hierarchies in global knowledge production. Consequently, voices from the Global South and other linguistically diverse contexts risk being marginalized or underrepresented in academic discourse shaped by these technologies.

Here, linguistic inequality refers to unequal opportunities to produce, access, and circulate scholarly knowledge across languages. Epistemic inequality concerns whose knowledge, interpretive frameworks, and standards of credibility are recognized in academic communication. The geopolitical dimension concerns the distribution of resources and authority across institutions, regions, and technological infrastructures. These dimensions intersect, but they are not interchangeable: publication in English does not, by itself, establish epistemic homogenization, and institutional location does not determine an author's epistemic position (Canagarajah, 2002; Dados & Connell, 2012; Díaz, 2018).

Popow (2025) calls for the decolonization of knowledge production and validation in the post digital era. Related discussions of the AI divide draw attention to unequal access to infrastructure, governance, and technological resources (Das & Muschert, 2024; Png, 2022). Correa Lucero and Martens (2025) examine how AI can reproduce colonial structures affecting marginalized communities in the Global South. Hao's (2025) account of the AI industry provides a complementary perspective on corporate power and the unequal distribution of the resources and labor supporting AI development. Together, these contributions situate

GenAI within existing relations of power and invite scrutiny of who controls its infrastructures and benefits from its use.

2.5 Positioning the current study within existing literature

Existing reviews address different levels of AI use in education. Chiu et al. (2023) organize their analysis around learning, teaching, assessment, and administration, while Wang et al. (2024) map educational applications, research topics, and methodological approaches. Lee et al. (2021) examine AI training in undergraduate medical education, and Labadze et al. (2023) focus specifically on educational chatbots. Albadarin et al. (2024) review empirical research on ChatGPT in education, bringing the discussion closer to the recent expansion of GenAI. Bond et al. (2024), in turn, synthesize reviews of AI in higher education and call for greater attention to ethics, collaboration, and methodological rigor. These contributions provide a foundation for examining how educational applications intersect with academic writing and knowledge production.

The present review extends this discussion by combining a bibliometric account of the retrieved literature with an exploratory analysis of its most cited articles. Its contribution lies in examining publication languages, institutional locations, and thematic emphases together, using ethical, epistemic, and geopolitical perspectives to interpret their implications for academic writing and knowledge production.

3 Methodological Procedures

The study focused on data from academic production collected from three bibliographic databases: Scopus, Web of Science, and Lens. The choice of these three sources was made with the aim of achieving greater coverage in terms of the number of records retrieved. This is because the first two databases tend to be more restrictive in their inclusion criteria for locally circulated journals, unlike the latter, which indexes a larger number of journals from countries outside the core of global knowledge production.

The review followed the PRISMA 2020 reporting guidelines (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) to document the identification, screening, and inclusion of studies (Page et al., 2021).

The search for records indexed in the databases was carried out in July 2025, covering documents published between 2020 and the first semester of 2025. The inclusion of 2025 publications is justified by the fact that this is an emerging topic, with a growing number of studies investigating the phenomenon as GenAI tools become more widespread.

Publications in English, Portuguese, and Spanish were eligible for inclusion. However, the database searches used English-language terms only. Language eligibility should therefore be distinguished from search language: studies published in Portuguese or Spanish could be retrieved through their indexed

English-language metadata, but studies without matching metadata may have been missed. The following search expression was applied across the three databases: ("generative AI" OR "generative artificial intelligence" OR "LLMs") AND ("academic writing" OR "scientific writing" OR "knowledge production") AND ("ethics" OR "epistemology" OR "geopolitics")

The initial search, without applying exclusion criteria, resulted in a total of 394 records, distributed as follows: Lens (316), Scopus (44), and Web of Science (34). However, when restricting the selection to only peer-reviewed journal articles, the total number was reduced to 336 records. Additional eligibility criteria used during the screening process are detailed in Table 1.

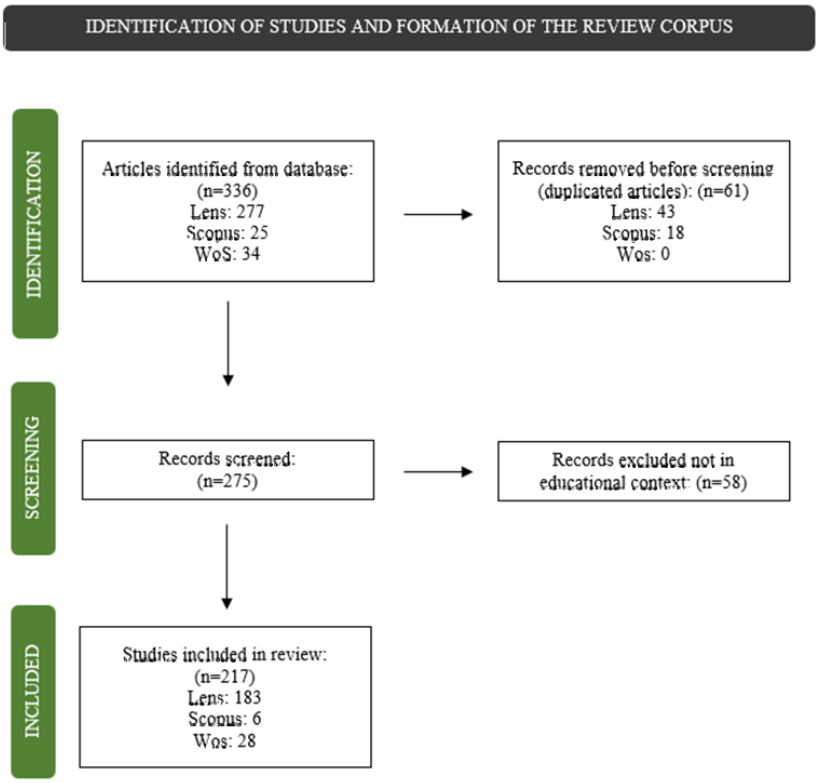
Table 1
Inclusion and exclusion criteria for corpus formation

Inclusion	**Exclusion**
• Articles published in peer-reviewed journals; • Works that address the use of generative artificial intelligence in the context of academic writing or knowledge production; • Studies that discuss ethical, geopolitical, or epistemological aspects related to the topic; • Publications between 2020 and 2025; • Texts available in English, Portuguese, and/or Spanish.	• Articles that deal solely with technical applications of AI without any connection to academic writing; • Opinion pieces, editorials, or reviews without empirical or theoretical basis; • Duplicate studies or studies with incomplete data.

Once the inclusion and exclusion criteria were defined and the documents were identified in the databases, the next step, recommended by the PRISMA systematic review protocol, as illustrated in Figure 1, consisted of identifying duplicate records. After this process, the corpus totaled 275 documents, distributed across the databases as follows: 234 in Lens, 7 in Scopus, and 34 in Web of Science (WoS).

Figure 1

Corpus formation process - PRISMA Protocol



The screening stage involved a preliminary reading of three elements contained in the articles: title, abstract, and keywords. As a result of this process, documents not related to the educational context were excluded before establishing the final corpus. To achieve the study's objectives, both quantitative and qualitative analyses were employed. The quantitative approach provided an overview of the publications addressing the topic, highlighting aspects such as the evolution of the literature over time, the most relevant publication venues, and the most impactful works based on citation count. These analyses were carried out using the Bibliometrix software, a graphical package developed for the R programming language, widely used in science mapping and bibliometric studies (Aria & Cuccurullo, 2017).

The qualitative approach, in turn, was used to identify the most recurrent themes in the sample of publications, as well as their possible connections with the three central variables of this study: the ethical, geopolitical, and epistemological impacts of the use of GenAI in academic writing and knowledge production. For this purpose, the software Voyant Tools (Sinclair & Rockwell, 2020) was used, focusing on similarity analysis through word co-occurrence, identifying key terms and their lexical associations. In line with the aims of review studies, the present study seeks to synthesize trends, convergences, and gaps in the literature so as to inform and inspire future research. In what follows, the results of the study are presented with a discussion based on the objectives pursued and the literature brought to bear in the study.

4 Results

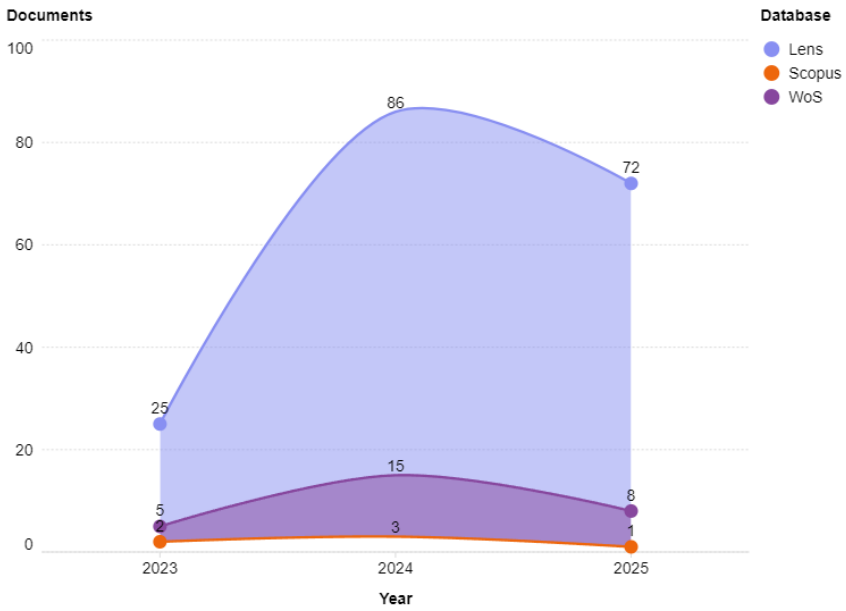
4.1 Temporal Evolution and Publication Venues

As mentioned in the methods section, the research design adopted a time frame covering articles published between 2020 and 2025. Considering that the use of GenAI tools gained greater visibility following the launch of ChatGPT in November 2022, the expectation was that most studies on the application of these tools to academic writing would be concentrated in the subsequent years. This hypothesis was confirmed by the analysis of the publication year of the articles comprising the research corpus.

We also observed that there are no records of studies on the topic prior to 2023. It should be noted that, since the database search was carried out in July 2025, the data for 2025 cover only the first half of the year; therefore, the lower number of articles shown for that year in Figure 2 reflects an incomplete period rather than a decline in publications. Considering the complete years, Figure 2 shows a trend of continuous growth, highlighting the emergence and deepening of discussions on the application of GenAI in the context of knowledge production.

Figure 2

Temporal evolution of articles published and indexed in databases (2020-2025; data for 2025 refer to the first half of the year only)



Regarding the number of publications in 2025, it is important to highlight that the authors' decision to include them was intentional, aiming to verify a possible growth trend in the scholarly production on the topic. As illustrated in

Figure 2, this trend seems to be confirmed, since the data refer only to the first half of the year and already show significant numbers. This leads us to believe that by the end of the second half of the year, the total number of publications in 2025 may surpass that of 2024.

Across the three databases, 32 articles were published in 2023, with the first record dating back to February 2023, indexed in the Lens database, and published under the title "What if the devil is my guardian angel: ChatGPT as a case study of using chatbots in education" in the journal Smart Learning Environments. Given the novelty of chatbot use, particularly ChatGPT, the study presents possible applications in the field of education and, through a user experience, points to potential problems related to honesty, factual accuracy, privacy, and manipulation.

Regarding the distribution of articles across journals over the analyzed period, we observed a high degree of dispersion. In total, the 217 articles were published in 128 different journals. Even so, it is worth noting that 15 of these journals published three or more articles on the topic, as shown in Table 2.

Table 2

Journals with the highest number of published articles

Sources	Articles
AI & Society	13
AI and Ethics	13
Education and Information Technologies	12
Discover Education	8
Journal of Academic Ethics	8
International Journal for Educational Integrity	7
Post digital Science and Education	6
Ethics and Information Technology	5
International Journal of Educational Technology in Higher Education	5
International Journal of Artificial Intelligence in Education	4
Science & Education	4
Smart Learning Environments	4
Humanities and Social Sciences Communications	3
Journal of Science Education and Technology	3
Scientific Reports	3

When analyzing the scope of the journals with the highest number of publications, we observe that they are mostly focused on the fields of technology and education, with particular emphasis on the application of technological resources in education. Based on the analysed corpus, it is possible to state that the discussion on the use of GenAI tools to support academic writing and

knowledge production is predominantly situated within dissemination channels linked to the technology and educational fields.

All of the journals with the highest number of publications are based in Global North countries, with 13 of them located in Western Europe. The remaining two are from the United States (Education and Information Technologies) and Australia (International Journal for Educational Integrity). It is also worth noting that all 15 journals are published by a single editorial group, namely, Springer, a multinational commercial publishing conglomerate. This choice of outlet results in the adoption of a single language for article dissemination: English.

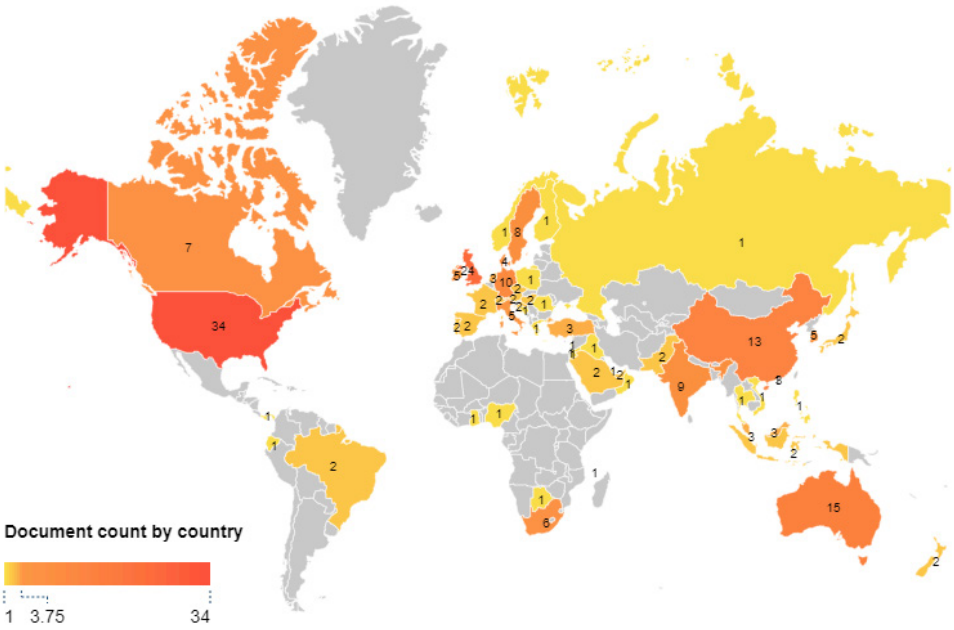
4.2 Language and Geographic Distribution of Authorship

The broader context, that is, the one encompassing the entire corpus included in the study, does not differ from what was previously outlined regarding the language of publication of the articles. English appears as the language in almost all articles (99.5% / N=217), even in journals published in Global South non-English-speaking countries. As an example, it was observed that two articles published in Brazilian journals adopted English and Spanish as their languages of publication.

The predominance of English as the language of publication becomes even more evident when the geographic distribution of authors' institutional affiliations is examined. As shown in Figure 3, authors affiliated with institutions in predominantly English-speaking countries, particularly the United States, the United Kingdom, and Australia, account for a substantial share of the publications. This pattern is consistent with the prominent position of English in international scholarly communication and reflects broader inequalities in the geographic distribution and visibility of academic knowledge production (Díaz, 2018).

However, the corpus also includes authors affiliated with institutions in countries where English is not the predominant first language, such as China, India, Sweden, and Germany. Their participation demonstrates that the use of English in academic publishing extends beyond predominantly English-speaking countries. Although the data do not establish individual authors' motivations for publishing in English, this pattern can be understood in relation to the broader role of English in international scholarly communication, where publication language intersects with academic visibility, journal policies, and the circulation of knowledge.

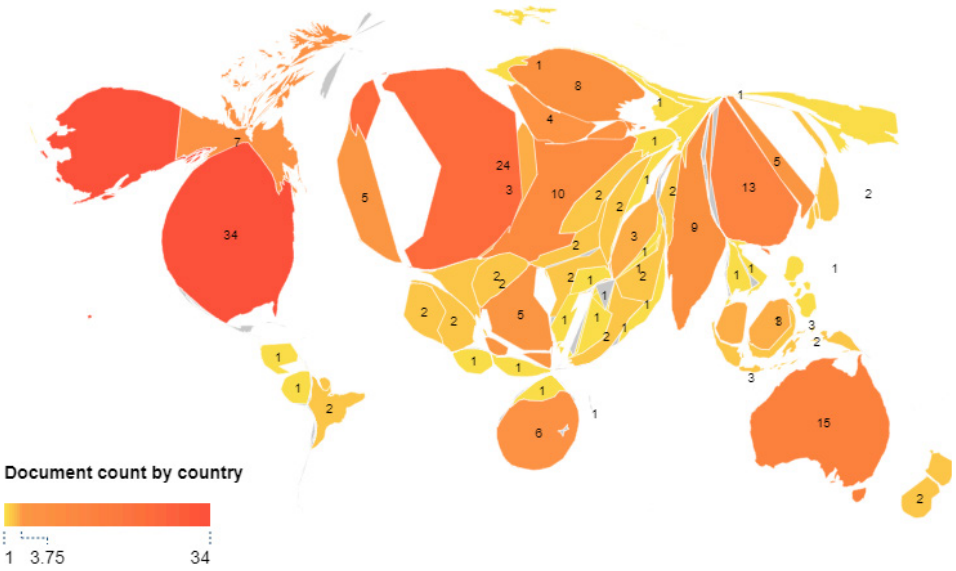
Figure 3
Document count by country based on author affiliation



Beyond the choice of English as the predominant language of scientific dissemination, the geographic distribution of production by country allows the analysis of the geopolitical distribution of knowledge production. The distribution observed in our data reinforces the primacy of Global North countries over Global South nations. Although there is a certain diversity of nationalities among the authors represented in the analyzed corpus, the absolute numbers show a significantly lower participation from these countries when compared to the hegemonic centers of scholarly production.

Figure 4 illustrates this panorama, revealing that the highest concentration of publications is found in North America and Western Europe, with secondary participation from Oceania and Southeast Asia (again corroborating data and claims in Díaz (2018) about the intersection between language and geopolitical position). In contrast, regions with less political, economic, and scientific influence, such as Latin America, Africa, the Middle East, and Eastern Europe, appear with limited representation. This asymmetry indicates that, although present, these regions still exert limited influence in global discussions on the topic under investigation.

Figure 4
Asymmetric distribution of international scholarly production on generative AI



4.3 Citation Impact and the Most Cited Articles

Citation counts are commonly used as indicators of the visibility and influence of scholarly publications. Although they do not necessarily reflect the quality or significance of individual studies, they provide a useful measure of how frequently publications are referenced within the academic literature. In this study, citation counts were examined to identify the most frequently cited articles in the corpus and select a subset for further thematic analysis.

From this perspective, when analyzing the number of citations received by the articles that make up the research corpus, we observed that the majority (150 out of a total of 217) were cited at least once, representing 69.1% of all works. When considering only the articles that received three or more citations, the number falls to 99 articles, which still corresponds to 45.6% of the entire corpus (99 out of 217) and to 66% of the articles cited at least once (99 out of 150). In descriptive terms, therefore, nearly half of the corpus received three or more citations, a considerable proportion for a body of literature published from 2023 onward.

This citation pattern suggests that a substantial proportion of the corpus has attracted scholarly attention within a relatively short period. However, citation counts alone do not establish the quality, practical applicability, or broader influence of individual publications. Moreover, differences in publication dates

affect the time available for articles to accumulate citations. The findings should therefore be interpreted as descriptive indicators of scholarly visibility rather than definitive measures of research impact.

In order to explore more closely the most frequently recurring themes in the articles, we selected a sample composed of the ten works that received the highest number of citations, based on the total mentions across the three databases used in the study. As presented in Table 3, the gap between the top three articles and the others in the sample is particularly notable in terms of citation count.

Table 3

Most cited articles

Article ID	Title	Citations
1	ChatGPT utility in healthcare education, research, and practice: systematic review on the promising perspectives and valid concerns	1069
2	What if the devil is my guardian angel: ChatGPT as a case study of using chatbots in education	841
3	Students' voices on generative AI: perceptions, benefits, and challenges in higher education	629
4	Artificial intelligence and illusions of understanding in scientific research	212
5	A meta systematic review of artificial intelligence in higher education: a call for increased ethics, collaboration, and rigor	164
6	The effects of over-reliance on AI dialogue systems on students' cognitive abilities: a systematic review	157
7	Artificial intelligence can generate fraudulent but authentic-looking scientific medical articles: pandora's box has been opened	141
8	Not quite eye to A.I.: student and teacher perspectives on the use of generative artificial intelligence in the writing process	121
9	Fighting reviewer fatigue or amplifying bias? Considerations and recommendations for use of ChatGPT and other large language models in scholarly peer review	120
10	ChatGPT is bullshit	103

Beyond the thematic analysis of their content, it is relevant to note that the top three articles were published in the early months of 2023 (February, March, and June) and already included ChatGPT, - recently launched in November 2022 - within their investigative scope. For this reason, it is plausible to consider that these publications played a seminal role in the field of studies on the application of GenAI tools in academic writing and knowledge production, thus justifying the high number of citations they received.

4.4 Thematic Categories in the Most Cited Articles

For the ten most cited articles presented in Table 3, we sought to identify the most recurrent themes in these studies, interpreted here as potential indicators of the main discussions present in the literature of the field.

The full texts of the ten most cited articles were uploaded to Voyant Tools after removing their reference lists. The built-in English stopword list was applied. The Topics tool, which uses latent Dirichlet allocation (LDA), generated five exploratory word clusters and estimated their distribution across the documents. The authors independently examined the highest-weighted terms in each cluster and agreed on interpretive labels, presented in Table 4. Figure 5 reports the model-estimated topic proportions; these proportions should not be interpreted as direct measurements of the amount of discussion devoted to each theme.

Table 4

Recurring themes in the 10 most cited articles

Thematic	ID
Use of artificial intelligence in education and learning	1
Review study on research involving ChatGPT	2
Artificial language models applied to higher education	3
Textual production of LLMs compared to human peers	4
Research that uses AI in scientific analysis	5

The percentage analysis of the distribution of these categories made it possible to observe, even in articles with different scopes and research objects, the topics and approaches that have most frequently stood out in the scientific discussions on the subject. Figure 5 illustrates this scenario, showing that four of the ten most cited articles have as their main focus Category 1, the use of artificial intelligence in education and learning. Another three articles are concentrated in Category 2, which focuses on empirical studies about the use of ChatGPT as a research support tool. The remaining categories, while relevant in specific contexts, show more limited distribution and lower incidence throughout the analyzed corpus.

Figure 5

Distribution of thematic categories in the 10 most cited articles



Going beyond the individual examination of the predominance of one theme over others, Figure 5 is illustrative in pointing to the cross-cutting nature of contemporary debates on GenAI in education, academic writing, and knowledge production. This is corroborated by the fact that most articles address more than one category simultaneously, albeit in different proportions, rather than focusing on a single theme; for example, some combine analyses of the use of GenAI in the classroom (Category 1) with reflections on text production supported by LLMs (Category 4), as can be seen in articles 1 and 9.

Categories 3 and 5, which address applications of GenAI more directly related to higher education and academic knowledge production, appear less frequently in the ten most cited articles. Their relatively limited representation suggests that these dimensions receive less attention within the analysed sample. Nevertheless, their presence indicates that the use of GenAI in scholarly knowledge production is already part of the emerging research agenda. Given the exploratory nature of this analysis, however, the findings do not allow us to predict whether these themes will become more prominent in future publications.

In summary, Figure 5 indicates that categories 1 and 2 predominate among the ten most cited articles, suggesting greater attention to the educational applications of GenAI and its practical uses in research. By contrast, themes more directly concerned with academic knowledge production and its ethical, epistemic, and geopolitical implications receive comparatively less attention in this sample. These findings highlight the importance of further investigating how

GenAI may reproduce or challenge existing inequalities in scholarly knowledge production, particularly those related to linguistic diversity and epistemic inclusion.

4.5 Ethical and Epistemic Dimensions: Co-occurrence Networks

Through the content analysis procedure adopted and described above, it was not possible to identify, in the selected sample, a predominance of discussions that addressed, as main themes, the topics of interest of this study. Specifically, issues related to the ethical, epistemological, and geopolitical impacts of adopting GenAI tools in academic writing and knowledge production did not stand out.

However, in order to investigate whether the themes of interest in this study, even if addressed indirectly, appear in the most cited documents used as a sample, we once again used the Voyant Tools software to identify the frequency and context of word usage in the ten analyzed articles. The textual corpus comprises 127,464 unique word forms and, within this universe, the terms 'ethics' and 'epistemology', including their morphological variations, are mentioned 282 times.

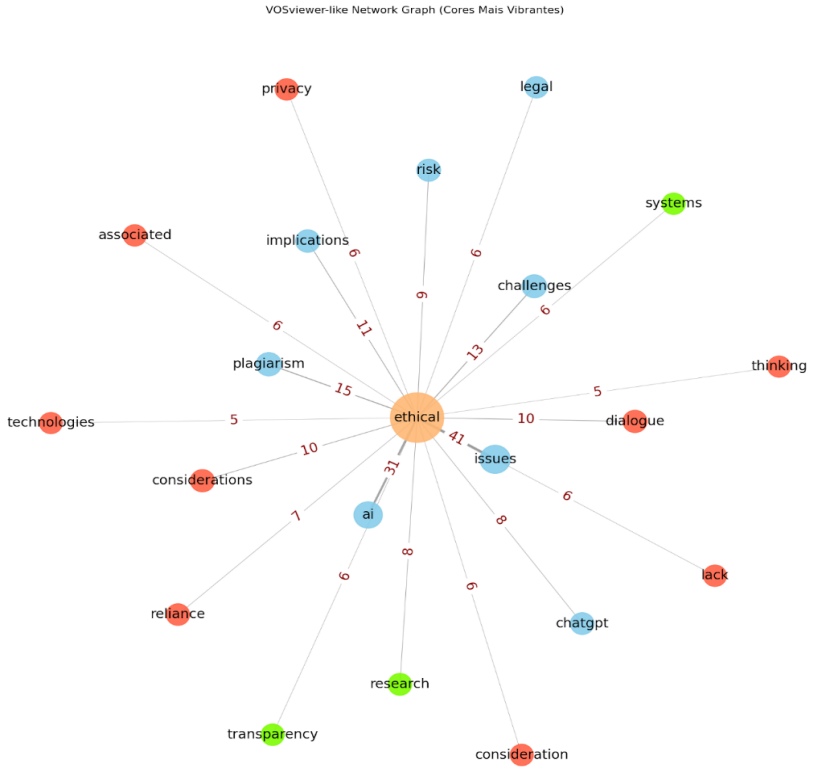
The selected terms yielded 1,401 co-occurrences within a context window extending five words before and five words after each occurrence, excluding stopwords. The exact search forms and morphological variants should be reported to make this procedure reproducible. The word 'geopolitics' was not found in the analyzed sample; this lexical absence does not establish that geopolitical issues were absent from the articles.

Figures 6 and 7 display lexical associations derived from Voyant Tools, with graphical representations produced using Gemini AI. Edge thickness represents co-occurrence frequency. Node distance from the center is a visual feature of the layout and does not measure association strength. The colored groupings are interpretive visual groupings and should not be read as statistically validated communities unless a separate clustering procedure was performed.

For the purposes of this study, we considered the 20 most frequent co-occurring words. Thus, Figure 6 shows the relationships surrounding the term 'ethics', which, in the graphic representation, contains three clusters grouped according to semantic proximity. As observed, the most prominent cluster is shown in blue, and the connections with 'issues', 'AI', 'plagiarism', 'challenges', and 'implications' suggest that the ethics debate is closely linked to technical problems, dilemmas, and the consequences of using this technology.

Figure 6

Word co-occurrence network associated with the term 'Ethical'



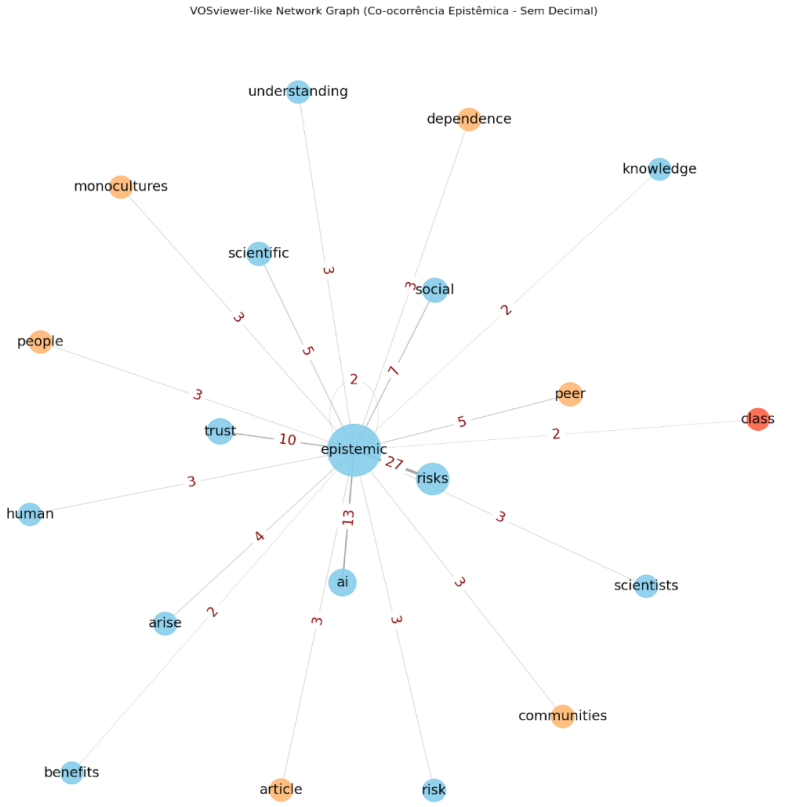
Although the words 'plagiarism' and 'challenges' are not among the most prominent in the network, their presence is significant, as they point to relevant ethical issues in the context of academic writing and knowledge production. This scenario highlights how the use of new technologies has proven to be challenging, especially by amplifying practices associated with plagiarism.

The co-occurrence network around the term 'epistemic' shows less reach compared to the previous one, both in the number of connected terms and in the intensity of the occurrences related to the center of the network. As illustrated in Figure 7, the blue cluster concentrates most of the links, with the strongest relationships being between 'epistemic' and 'risks' — the most intense — followed by 'epistemic' and 'AI', and 'epistemic' and 'trust'.

In a broader perspective, the strong co-occurrence between these terms and the center of the network indicates a recurring concern with epistemic aspects related to the risks of using artificial intelligence. Furthermore, it highlights a growing debate about trust in AI applications within the context of scientific writing and knowledge production.

Figure 7

Word co-occurrence network associated with the term 'Epistemic'



Source: Data obtained from Voyant Tools and generated in Gemini AI (2025).

The orange grouping brings together terms associated with social, structural, and ethical dimensions of knowledge production.

By emphasizing these particular terms, it is observed that the word 'dependence', when associated with the network's central term, tends to refer, in the context of co-occurrence, to issues related to epistemic autonomy. Its association suggests discussions about the vulnerability to restricted sources of information based exclusively on GenAI tools, as well as the need to diversify knowledge bases in order to mitigate epistemic risks such as excessive dependence on algorithms.

In turn, the term 'monocultures' points to the risk that GenAI may promote the standardization of theoretical, methodological, or data-source approaches within a field of study. Such standardization runs counter to fundamental principles of knowledge production, such as diversity, plurality, and accessibility, thereby compromising the richness and complexity of scientific approaches to global knowledge advancement.

4.6 Synthesis of Findings: Linguistic Hegemony and Epistemic Risks

English accounts for 99.5% of the retrieved corpus, and the distribution of author affiliations and publication venues indicates geographical concentration. These patterns can be interpreted in relation to the unequal conditions of academic

knowledge production discussed by Canagarajah (2002) and Díaz (2018). They do not, however, directly demonstrate that GenAI causes linguistic homogenization or reproduces colonial relations. Rather, they identify the publication landscape within which debates about GenAI circulate and raise questions about whose languages, institutions, and perspectives become most visible.

Regarding content, the thematic concentration observed in the analyzed texts -largely centered on notions of "usefulness" and the "pragmatic use" of tools such as ChatGPT - reflects the stance that, given the impossibility of resisting technological advancement, the most viable strategy is to embrace it within academic practices (Tseng & Warschauer, 2023). However, this pragmatic acceptance appears to occur at the expense of a more critical engagement with both the transformative potential and the risks associated with GenAI technologies, including the reinforcement of biases and the possible atrophy of human critical thinking (Jin et al., 2025). Moreover, the tendency to frame ethics primarily in terms of technical issues, such as plagiarism or operational implications, suggests that the debate remains confined to instrumental categories, overlooking deeper dimensions related to culture and identity, which we consider fundamental to the dynamics of knowledge production.

Taken together, the findings support further investigation of how GenAI interacts with existing linguistic and epistemic inequalities. The lexical presence of terms such as 'dependence' and 'monocultures' identifies concerns expressed in the sampled literature rather than demonstrating their effects on researchers' practices. Preserving an ecology of knowledges and languages therefore requires examining how AI-assisted writing affects academic voice, epistemic autonomy, and the recognition of diverse knowledge traditions. This remains an agenda for empirical research beyond the scope of the present review.

5 Conclusion

This systematic literature review mapped and analyzed how generative artificial intelligence (GenAI) is discussed in relation to academic writing and knowledge production. The findings reveal a rapidly expanding body of literature, particularly following the public release of ChatGPT in late 2022, with considerable attention devoted to educational applications and research support. However, the thematic analysis of the ten most cited articles suggests that ethical, epistemological, and geopolitical implications receive comparatively limited explicit attention. Although terms associated with ethics, trust, and epistemic risks emerge in the lexical analysis, their occurrence does not necessarily indicate sustained critical engagement with these dimensions. These findings point to the need for further research examining how GenAI shapes academic knowledge production beyond its immediate practical applications.

The analysis also reveals important asymmetries in academic knowledge production. English predominates as the language of publication, while the distribution of journals and authors' institutional affiliations points to

geographical concentrations in scholarly visibility. These findings suggest that the growing use of GenAI in academic writing should be examined in relation to existing linguistic and geopolitical inequalities. Although the results do not establish that GenAI directly reinforces these inequalities, they highlight the need to investigate whether AI-mediated academic practices reproduce dominant linguistic and epistemic norms or create opportunities for greater diversity and inclusion.

These findings are subject to limitations associated with the review's search strategy and analytical design. The corpus was restricted to journal articles retrieved from three databases using English-language search terms, which may have excluded relevant scholarship indexed elsewhere or employing different terminology. Moreover, the analysis of ethical, epistemic, and geopolitical dimensions focused on the ten most cited articles, limiting the extent to which its findings can be generalized to the entire corpus. Citation-based selection may also favor earlier publications that have had more time to accumulate citations. Future research should therefore examine broader multilingual corpora, incorporate additional databases and publication types, and investigate how GenAI-mediated academic practices affect linguistic diversity, epistemic autonomy, and the visibility of knowledge produced in different geopolitical contexts.

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