



Cheating, Chatbots, and Change: A Bibliometric Mapping of Academic Integrity and Generative AI in Higher Education

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Abstract

Background and Aim: Generative artificial intelligence (GenAI) tools such as ChatGPT have rapidly entered higher education, reshaping how students write, learn, and are assessed, while intensifying concerns about plagiarism, contract cheating, and academic misconduct. Despite fast-growing commentary and empirical work, bibliometric evidence remains limited on how research at the intersection of academic integrity, GenAI, and higher education has organized itself in the post-ChatGPT period. This study maps publication volume, thematic structure, collaboration patterns, and early visibility indicators in this integrity-focused GenAI literature from 2023 to 2025.

Materials and Methods: A bibliometric and science-mapping design was applied to records retrieved from The Lens (Lens.org) using a misconduct-salient query combining academic integrity terms, GenAI terms (e.g., generative AI, ChatGPT), higher education, and misconduct constructs (plagiarism, cheating, misconduct). Data were extracted on October 30, 2025. After screening and cleaning, 303 records were retained. Descriptive indicators were computed, and VOSviewer was used to generate keyword co-occurrence and co-authorship networks; influential publications were identified using Lens scholarly citation counts.

Results: Publication output increased sharply from 2023, with substantial growth through 2025, although 2025 items had less time to accrue citations at extraction. Keyword mapping revealed four dominant clusters: integrity and misconduct, GenAI tool use and academic writing, student perceptions with population descriptors and selected discipline-linked terms, and ethics and governance. Collaboration patterns showed a small connected core among repeat contributors alongside a larger periphery of single or weakly connected authors. Source and citation indicators suggest that early visibility is anchored in a limited set of integrity-focused and education/educational technology outlets, with highly cited contributions dominated by early synthesis and framing work, alongside studies focused on assessment and detection. Country-level patterns should be interpreted cautiously because affiliation metadata were missing for many records; geographic findings, therefore, reflect the known-affiliation subset rather than a complete global distribution.

Conclusion: In the first three years after ChatGPT's release, integrity-focused GenAI research in higher education expanded rapidly and developed a recognizable thematic and network structure. The field remains strongly shaped by misconduct framings, but the map also shows branching toward student experience and governance, supporting the need for broader collaboration and evidence-informed institutional guidance.

Keywords: Academic Integrity; Bibliometric Analysis; ChatGPT; Generative Artificial Intelligence; Higher Education

Introduction

In just a few semesters, generative artificial intelligence has shifted from a novelty to a routine part of higher education. GenAI is now embedded in many learning and assessment practices, shaping how students' study, write, and complete coursework. Tools such as ChatGPT and other large language models can produce readable, context-appropriate text, give feedback on drafts, and support idea generation at scale. Their widespread availability, however, also raises fundamental questions about academic integrity, authorship, and what assessment is meant to evaluate in higher education (Cotton





et al., 2023; Moya et al., 2024). Concerns now extend beyond traditional plagiarism to include AI-assisted writing, undisclosed automation, and blurred boundaries between legitimate support and misrepresentation of authorship (Chan, 2024).

Empirical studies suggest that student uptake of GenAI has been rapid and global. Surveys across Europe, Africa, and the Middle East indicate that large proportions of university students have used ChatGPT or similar tools for academic purposes, with reported rates ranging from roughly 40–70% in general student populations and exceeding 70–80% in some medical and elite college cohorts (Ajalo et al., 2025; Farinosi & Melchior, 2025; von Garrel & Mayer, 2023). Students commonly report using GenAI to draft and revise assignments, summarize readings, prepare for examinations, and obtain language support, often alongside personal and recreational uses (Abdaljaleel et al., 2024; Ajalo et al., 2025; Črček & Patekar, 2023). This rapid and uneven diffusion has intensified debate about what counts as acceptable assistance and how academic integrity should be interpreted in AI-mediated learning environments.

The emerging literature frames GenAI as both an opportunity and a risk for academic integrity. On the opportunity side, AI-supported tools can provide formative feedback, scaffold academic writing, and offer language support that may be especially valuable for multilingual students and those navigating demanding academic genres (Espinoza Vidaurre et al., 2024). Systematic and scoping reviews also suggest that AI can support process-oriented assessment and help identify text-based misconduct when embedded in education-focused responses rather than punishment-only enforcement, particularly given the documented limitations and risks of relying on detection tools alone (Balalle & Pannilage, 2025; Moya et al., 2024; Perkins et al., 2023; Weber-Wulff et al., 2023). On the risk side, GenAI enables new and less detectable forms of academic misconduct. Students can use these tools for ghostwriting, contract cheating, or fabricated content that may appear original to conventional text-matching systems (Cotton et al., 2023; Song, 2024). Concepts such as “AI-giarism” have been introduced to describe AI-assisted plagiarism and undisclosed AI authorship (Chan, 2024), alongside wider ethical concerns related to transparency, data use, and the commodification of academic work (Nadim & Di Fuccio, 2025; Wan et al., 2025).

Institutional responses have often focused on technical detection, yet the limitations of this strategy are increasingly well documented. Evaluations of AI-detection tools show that they can be bypassed through relatively simple tactics such as paraphrasing, prompt engineering, minor text perturbations, or translation workflows (Perkins et al., 2023; Weber-Wulff et al., 2023). Detection systems also produce false negatives and false positives, with evidence that some multilingual or stylistically atypical human writers may be disproportionately flagged as AI-generated (Elkhatat et al., 2023; Weber-Wulff et al., 2023). Several authors therefore describe the present moment as an “arms race,” where advances in generation and evasion outpace detection and make purely technical enforcement strategies insufficient (Sadasivan et al., 2023).

Alongside these technological debates, research on student perceptions and ethical reasoning highlights the complexity of GenAI’s impact on integrity. Many students view AI tools as helpful for brainstorming, language support, and efficiency, but remain uncertain about when AI use becomes cheating, particularly in relation to disclosure and the acceptable extent of AI involvement in assessed tasks (Johnston et al., 2024; Ventayen, 2023). Studies also identify gaps between students’ stated commitment to integrity and their actual practices, with time pressure, language barriers, and perceptions of peer behavior influencing decisions (Elom et al., 2025; Yusra & Hanifa, 2025). Ethical engagement appears to be linked less to frequency of AI use and more to reflection, guidance, and prior ethics education (Elom et al., 2025). Across contexts, both students and staff call for clearer, practical guidance and dialogic, trust-based approaches rather than blanket prohibition (Johnston et al., 2024; Premat & Farazouli, 2025).

At the level of institutional governance, universities are beginning to revise academic integrity frameworks, develop AI-specific guidelines, and redesign assessment practices. Proposed strategies include emphasizing authentic and process-based assessment, integrating oral and interactive components, providing AI literacy and ethics training for students and staff, and clarifying expectations around acceptable AI use and disclosure in coursework and research (Symeou et al., 2025; Evangelista,





2025). Policy-focused contributions debate whether institutions should primarily legislate or educate in response to GenAI and often argue for flexible, “living” policies and shared governance models that involve multiple stakeholder groups (Symeou et al., 2025).

Despite this rapidly expanding body of work, research on academic integrity, higher education, and GenAI remains fragmented. Existing contributions span conceptual analyses, empirical studies of student and staff perceptions, evaluations of detection tools, discipline-specific case studies, and policy commentaries (Evangelista, 2025; Moya et al., 2024). However, there has been limited systematic mapping of how this research field is structured: which topics dominate, how academic integrity is conceptualized in relation to GenAI, who is producing the work and in what collaborative constellations, and which early publications are shaping subsequent literatures. A bibliometric approach can help to address these gaps by providing an overview of the intellectual structure, collaboration patterns, and influential contributions in this rapidly evolving area. Using publications indexed in Lens and science-mapping techniques in VOS viewer, this study—*Cheating, Chatbots, and Change: A Bibliometric Mapping of Academic Integrity and Generative AI in Higher Education*—examines the research landscape at the intersection of academic integrity, higher education, and generative AI from 2023 to 2025, that is, in the post-ChatGPT era.

Objectives

This study aims to map the early research landscape on academic integrity and generative AI in higher education during the post-ChatGPT period (2023–2025). It describes publication growth and geographic distribution, identifies major themes through keyword co-occurrence analysis, and examines collaboration and influence using co-authorship networks and citation indicators.

Research Questions

This study is guided by the following research questions:

What are the main themes in research linking academic integrity and generative AI in higher education (2023–2025), based on keyword co-occurrence?

How is this field structured in terms of collaboration and influence, based on co-authorship networks and citation patterns (e.g., leading sources/authors and highly cited works)?

Literature review

The literature on generative AI in higher education has grown very quickly since the release of ChatGPT, but it is distributed across multiple themes, disciplines, and problem framings. This review focuses on studies that explicitly connect GenAI to academic integrity in higher education and organizes them into four strands: patterns of AI adoption and integrity concerns, cheating and detection, student perceptions and ethics, and institutional responses and governance. These strands provide the substantive background against which the present bibliometric mapping is interpreted.

Adoption of generative AI and emerging integrity concerns

Since the public release of ChatGPT in late 2022, GenAI has been rapidly normalized in higher education. Surveys conducted in various areas indicate that the usage of GenAI is now widespread among college students. In most general student samples, about 40–70% people report ChatGPT or corresponding tools usage, and in the case of some medical and high-class cohorts, the numbers even reach 70–80% or more (Ajalo et al., 2025; Črček & Patekar, 2023; von Garrel & Mayer, 2023). Such a degree of uptake creates a situation of tension among the educational institutions that they have faced before. GenAI's use in the learning process can enhance it by providing feedback, writing scaffolding, and language assistance, especially for multilingual learners (Espinoza Vidaurre et al., 2024). However, it can also be used for ghostwriting, undisclosed assistance, and plagiarism with the help of AI, which makes it difficult to hold on to the traditional concepts of authorship and integrity (Chan, 2024; Cotton et al., 2023).





GenAI-enabled cheating and the limits of detection

A considerable amount of research is being conducted on the effects of GenAI on cheating and the success of detection methods. The findings show that the students have the capability of using GenAI for generating essays, reports, and even fake data, which are so unique at the level of strings that they are undetectable by the traditional text-matching systems (Cotton et al., 2023; Kofinas et al., 2025). As a consequence of this, universities and commercial tools have come up with AI-detection systems, and plagiarism platforms also employ such detectors (Perkins et al., 2023; Weber-Wulff et al., 2023). The appraisal of these tools indicates that there are serious drawbacks: the detectors can constantly be eluded through different methods like paraphrasing, translating, prompt engineering, or simply by slightly changing the text, and they also produce both false negatives and false positives that could unfairly disadvantage the multilingual or stylistically unconventional writers (Elkhatat et al., 2023; Weber-Wulff et al., 2023). Several researchers see a situation of an "arms race" where the progress of generation and evasion is faster than the detection, hence they imply that only technical tools cannot guarantee academic integrity in the GenAI age (Sadasivan et al., 2023).

Student perceptions, ethics and contract cheating

A third strand of research examines how students judge the ethics of GenAI use, including where it overlaps with contract cheating. Many view AI as helpful for brainstorming, language support, and efficiency, but disagree on when its use becomes cheating, especially if it produces whole assignments (Johnston et al., 2024; Ventayen, 2023). Even students who claim responsible use often remain unsure about disclosure, citation, and acceptable levels of AI input in graded work (Johnston et al., 2024; Premat & Farazouli, 2025). Misconduct studies also point to an integrity–practice gap shaped by deadlines, language barriers, and peer norms (Yusra & Hanifa, 2025). Recent work suggests that ethical engagement depends more on clear guidance, reflection, and ethics training than on use frequency, and students therefore call for practical expectations and dialogue rather than punishment-focused responses (Elom et al., 2025).

Institutional responses, assessment redesign and governance

An increasing number of studies examine how educators and institutions are reacting to GenAI. Redesigning assessments to focus on authenticity, process, and higher-order thinking; adding oral, interactive, or in-class components; and clearly instructing students on how to use AI tools ethically are some of the suggested pedagogical strategies (Evangelista, 2025; Estaphan et al., 2025). Assessment formats that minimize opportunities for AI-enabled cheating while maintaining the advantages of AI-supported learning are also supported by discipline-specific work, particularly within medical and health sciences education (Preiksaitis & Rose, 2023; Symeou et al., 2025). Universities are starting to implement AI-specific policies and update their frameworks for academic integrity at the policy level. Policy-focused contributions contrast models that aim to integrate AI responsibly with prohibition-oriented approaches, contending that effective responses necessitate a balance of shared governance, education, and regulation, supported by adaptable "living" policies that can change with the technology and address equity and ethics (Symeou et al., 2025; Wan et al., 2025).

Existing reviews and gaps in bibliometric mapping

Numerous reviews have begun to compile this rapidly expanding body of work. Scoping and systematic reviews provide frameworks for interpreting integrity in AI-mediated contexts and address how GenAI is impacting academic integrity and assessment (Moya et al., 2024). AI-enabled cheating, detection tools, ethical issues, and discipline-specific cases are all examined in narrative and conceptual papers (Cotton et al., 2023; Song, 2024). But rather than providing a field-wide perspective, the majority of this work concentrates on specific issues. In the early post-ChatGPT era, bibliometric evidence on publication trends, thematic clusters, collaboration patterns, and influential works is still scarce. In order to address this gap, the current study maps research from 2023 to 2025 using Lens data and VOSviewer software, providing an integrated picture of the field's development.



Conceptual Framework

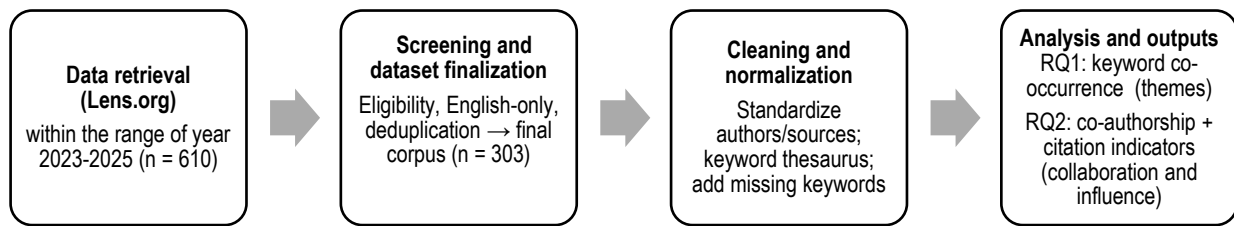


Figure 1. Analytic conceptual framework for bibliometric mapping (2023–2025).

Note. The figure summarizes the analytic workflow and interpretive lens. Arrows indicate the sequence of analysis, not causal relationships.

Figure 1 presents the analytic conceptual framework for this bibliometric mapping study. Records on academic integrity and generative AI in higher education (2023–2025) were retrieved from The Lens, screened, and cleaned to produce the final dataset. Analyses were aligned with the research questions: RQ1 identifies key themes through keyword co-occurrence, while RQ2 examines collaboration and influence using co-authorship networks and citation indicators (for example, leading sources/authors and highly cited works). Together, these outputs summarize the early research landscape in the post-ChatGPT period. In this study, the framework functioned as an interpretive lens for reading the maps rather than as a set of variables to be tested. Keyword co-occurrence clusters were interpreted in relation to the level(s) they most directly reference (student, classroom/assessment, institutional governance, or technology and regulation). Co-authorship patterns were used to describe how the research community is forming among repeat contributors, while source and citation indicators were used to identify early visibility and agenda-setting venues and publications. These interpretations are presented as structured readings of the mapped outputs, not as causal claims about institutional behavior.

Methodology

Research design

This study adopted a bibliometric and science-mapping design to examine scholarly publications on academic integrity and generative artificial intelligence (GenAI) in higher education from 2023 to 2025. Individual scholarly works indexed in The Lens (Lens.org) were treated as the unit of analysis. Descriptive bibliometric techniques were used to characterize patterns of productivity and citation, while network-based science-mapping techniques were employed to visualize intellectual and collaborative structures, specifically co-authorship and keyword co-occurrence networks.

Data source and search strategy

All data were retrieved from The Lens (Lens.org) using the Scholarly Works collection on October 30, 2025, at 3:05 PM Philippine time (UTC +8). The search strategy combined terms related to academic integrity, GenAI, and higher education, together with key misconduct-related constructs, using the following Boolean expression:

"Academic integrity" AND ("generative AI" OR "ChatGPT") AND "higher education" AND (plagiarism OR cheating OR misconduct)

Because the search string explicitly includes misconduct-related terms (plagiarism, cheating, misconduct), the corpus represents a misconduct-salient subset of GenAI–integrity research rather than the full GenAI-in-higher-education literature.

The search was limited to works published between 2023 and 2025, corresponding to the period immediately following the public release of ChatGPT and the rapid uptake of GenAI tools in higher education. No restrictions were applied with respect to country or institution. The initial search yielded



610 records. These records were exported from Lens.org in CSV format, including titles, authors, source information, abstracts, keywords, and citation counts, for subsequent screening and preparation.

Screening and eligibility criteria

Screening and eligibility procedures were conducted in a spreadsheet environment. The following inclusion and exclusion criteria were applied:

Topical relevance

- **Inclusion:** Publications that explicitly addressed (a) academic integrity, research integrity, or closely related constructs such as cheating, contract cheating, plagiarism, or assessment integrity, and (b) the use, impact, risks, or governance of GenAI tools (e.g., ChatGPT, large language models, AI writing tools) in higher education contexts.

- **Exclusion:** Publications that mentioned artificial intelligence only tangentially, did not address integrity or assessment, or were situated entirely outside higher education.

Title and abstract screening were conducted by the author using the predefined inclusion and exclusion criteria in a spreadsheet environment. Full-text checking was conducted when relevance could not be determined from bibliographic metadata alone. Borderline cases were resolved by returning to the study scope and applying the same criteria consistently across records.

Document type and metadata completeness

- Records lacking essential bibliographic information (e.g., missing title, authors, year, or source) were checked against DOIs and publisher websites. When metadata could not be reliably completed, the record was excluded.

- Non-scholarly items (e.g., brief announcements, news items, or non-analytic editorials) were excluded when they did not provide a substantial empirical, conceptual, or policy contribution.

Language: Only English-language publications were retained to ensure consistency in keyword processing and interpretation.

Duplicates: Duplicate entries arising from multiple versions of the same work (e.g., preprint and final published version) were identified using combinations of DOI, title, and author information and were consolidated into single records.

After applying these criteria, the final dataset comprised 303 publications. This corpus formed the basis for all descriptive and network analyses. Because the search string explicitly incorporated terms such as plagiarism, cheating, and misconduct, the resulting dataset is oriented toward studies that foreground breaches of academic integrity and institutional responses. Many of these publications also discuss integrity-enhancing approaches (e.g., assessment redesign, AI literacy, and ethics education). This emphasis is treated as a deliberate focus of the study and later acknowledged as a limitation in relation to more capability-oriented GenAI research.

Data cleaning and normalization

Before bibliometric and science-mapping analysis, the dataset was cleaned and normalized to reduce noise and improve comparability:

Standardization of authors and sources.

- Author names were examined for obvious spelling variants and inconsistent use of initials; where it was clear that records referred to the same individual, entries were standardized. Similar standardization was applied to source titles (e.g., journal names) to avoid artificial fragmentation.

- Keyword harmonization using a thesaurus file. Both author-supplied keywords and indexer keywords (where available) were retained. A custom thesaurus file was created for use in VOSviewer to merge lexical variants and synonyms. Examples include:

- “chat gpt”, “chatgpt”, “gpt” → ChatGPT
- “generative ai”, “genai”, “ai tool”, “ai tools”, “ai writing tool” → Generative AI
- “large language model”, “large language models”, “llm”, “llms”, “language model” → LLM

- Minor spelling and hyphenation variants (e.g., “e-assessment” vs. “e assessment”) were also unified. This procedure reduced noise in the keyword network and improved the interpretability of the co-occurrence map.





Completion of missing keywords

For records without author-provided keywords in Lens, keywords were completed through manual retrieval by locating the published version (via DOI/publisher page) and extracting the author keywords when available. When no author keywords were provided in the published version, a small set of descriptive terms was added based on the title and abstract to support consistent topic mapping across records. Descriptive bibliometric indicators were computed to summarize publication output, geographic and institutional distribution, productivity, and citation performance. These indicators are listed in Table 1.

Table 1 *Bibliometric indicators*

Indicator	Description
Annual publication output (2023–2025)	Number of publications per year.
Country/region distribution	Publications by country or region based on author affiliations.
Source/journal distribution	Publications by institution and by source (e.g., journals, conference proceedings).
Productivity of authors and sources	Publications per author and per outlet.
Citation performance	Total citations per document and per source (Lens citation counts).

These indicators were generated using spreadsheet functions and VOSviewer’s built-in statistics. Citation counts reflect the state of Lens.org at the time of data extraction and were not cross-normalized with other databases.

Science-mapping procedures

Science-mapping analyses were conducted in VOSviewer using full counting. Four networks were constructed: (a) a co-authorship map at author level (minimum 2 documents per author) to identify collaboration patterns; (b) a keyword co-occurrence map based on normalized author and indexer keywords (minimum 5 occurrences), with VOSviewer’s clustering and overlay visualizations used to derive thematic clusters and their temporal evolution (2023–2025); (c) a source (journal) network at outlet level (minimum 5 documents per source) to identify core publication venues; and (d) a citation-based subset of influential documents, defined as those with ≥ 20 scholarly citations in Lens, which was examined in the Results and Discussion to illustrate how highly cited works conceptualize academic integrity and GenAI.

VOSviewer settings were kept consistent across maps to support comparability. Full counting was used for co-authorship and keyword co-occurrence. Co-occurrence was run on normalized keywords after thesaurus-based harmonization, using the minimum occurrence thresholds reported in the Results for readability. Clustering and overlay visualizations were generated using VOSviewer defaults unless otherwise stated. Because threshold choices can affect network structure, maps are interpreted as descriptive representations of the dataset under these settings rather than as definitive boundaries in the broader literature.

Ethics statement

This study analyzed publicly available bibliographic metadata from Lens.org and did not involve human participants or collect sensitive personal data. As a result, formal ethics approval was not required; findings are reported in aggregate and do not evaluate individual authors, institutions, or journals.

Results

Results are presented as a brief dataset overview, followed by findings for RQ1 (keyword co-occurrence themes) and RQ2 (collaboration and influence based on co-authorship and citation indicators).





Dataset Overview

The final corpus comprised 303 publications on academic integrity and generative AI in higher education published between 2023 and 2025. As shown in Table 2, output increased from 56 publications in 2023 (18.5%) to 108 in 2024 (35.6%) and 138 in 2025 (45.5%). Because 2025 publications had less time to accumulate citations at the time of data extraction, citation-based comparisons across years should be interpreted cautiously.

Table 2 Annual Publication Output on Academic Integrity and Generative AI in Higher Education (2023–2025)

Publication year	Number of publications	Percentage of dataset (%)
2023	56	18.5
2024	108	35.6
2025	138	45.5
Total	303	100.0

Author affiliation country information was available for 136 records; 167 records (55.1%) lacked country metadata. For transparency, country results are reported for the known-affiliation subset only (Table 3). Within this subset, the Netherlands contributed the most publications (51), followed by the United Kingdom (33) and the United States (29).

Table 3 Source Countries based on available author affiliation metadata (2023–2025)

Source country	Frequency	% of full dataset (n = 303)	% of records with known country (n = 136)
Netherlands	51	16.8	37.5
United Kingdom	33	10.9	24.3
United States	29	9.6	21.3
Switzerland	8	2.6	5.9
Germany	6	2.0	4.4
Australia	3	1.0	2.2
Canada	3	1.0	2.2
New Zealand	1	0.3	0.7
Philippines	1	0.3	0.7
Belgium	1	0.3	0.7
Unknown	167	55.1	–
Total	303	100.0	100.0 (known countries)

Authorship was dispersed across the corpus. Most authors contributed one publication, while a smaller group produced multiple items during the three-year window. Table 4 lists authors with at least three publications, led by Mike Perkins (6) and Sarah Elaine Eaton (5).

Table 4 Most Productive Authors Publishing on Academic Integrity and Generative AI in Higher Education (2023–2025)

Author	Number of publications
Mike Perkins	6
Sarah Elaine Eaton	5
Jasper Roe	4



with another included author, while 14 appeared as isolates (multiple publications but no co-authorship links within the mapped subset). Figure 3 shows the resulting network.

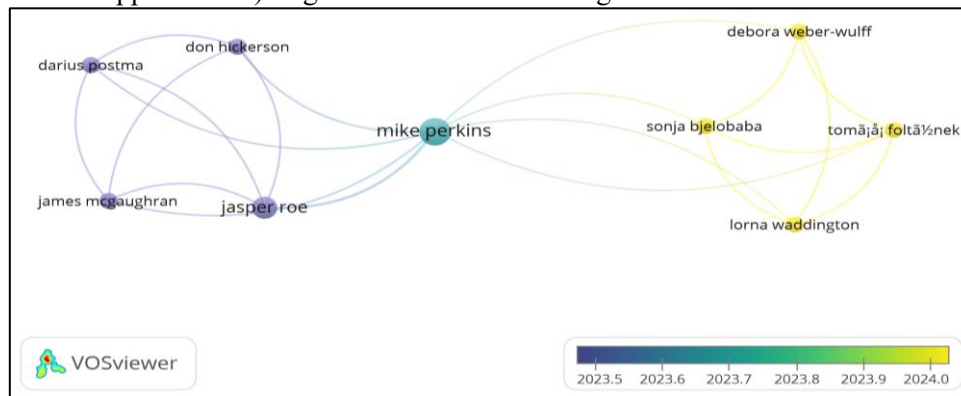


Figure 3. Author co-authorship network on academic integrity and generative AI in higher education (minimum 2 documents per author).

Among the included authors, Mike Perkins is the most central and shows the highest total link strength, indicating collaboration across multiple teams. One subgroup clusters Perkins with Jasper Roe and colleagues (including Darius Postma, Don Hickerson, and James McLaughran). Another clusters Debora Weber-Wulff with Sonja Bjelobaba, Tomáš Foltýnek, and Lorna Waddington, who are tightly connected within that component. Perkins also links across groups, suggesting a bridging role. Because the visualization uses a two-publication threshold and affiliation metadata were incomplete, institution- and country-level collaboration maps were not examined.

2.2 Leading Sources (journals/ outlets)

Publications were concentrated in a relatively small number of outlets. The Journal of Academic Ethics published the most papers (29), followed by the International Journal for Educational Integrity (21). Other recurring venues included Discover Education, International Journal of Educational Technology in Higher Education, and Education and Information Technologies. Table 5 summarizes the most productive sources and their Lens citation totals at the time of extraction.

Table 5. Most productive journals publishing on academic integrity and generative AI in higher education (2023–2025).

Source/journal	Number of publications	Total citations	Mean citations per publication
<i>Journal of Academic Ethics</i>	29	168	5.8
<i>International Journal for Educational Integrity</i>	21	578	27.5
<i>Discover Education</i>	13	51	3.9
<i>International Journal of Educational Technology in Higher Education</i>	9	381	42.3
<i>Education and Information Technologies</i>	8	93	11.6
<i>TechTrends</i>	6	59	9.8
<i>Education Sciences</i>	5	1,850	370.0
<i>PLOS ONE</i>	5	81	16.2
<i>Heliyon</i>	4	199	49.8
<i>Frontiers in Education</i>	4	103	25.8

Extremely high mean citation values in a small number of sources likely reflect a small number of highly cited early publications and the short citation window; these values should be interpreted as early visibility rather than stable influence. Citation counts are Lens-based and not field- or time-normalized. Mean citation values are therefore influenced by early highly cited papers and should be read as early visibility rather than stable influence. Figure 4 complements Table 5 by visualizing how key venues relate to one another in the source network.

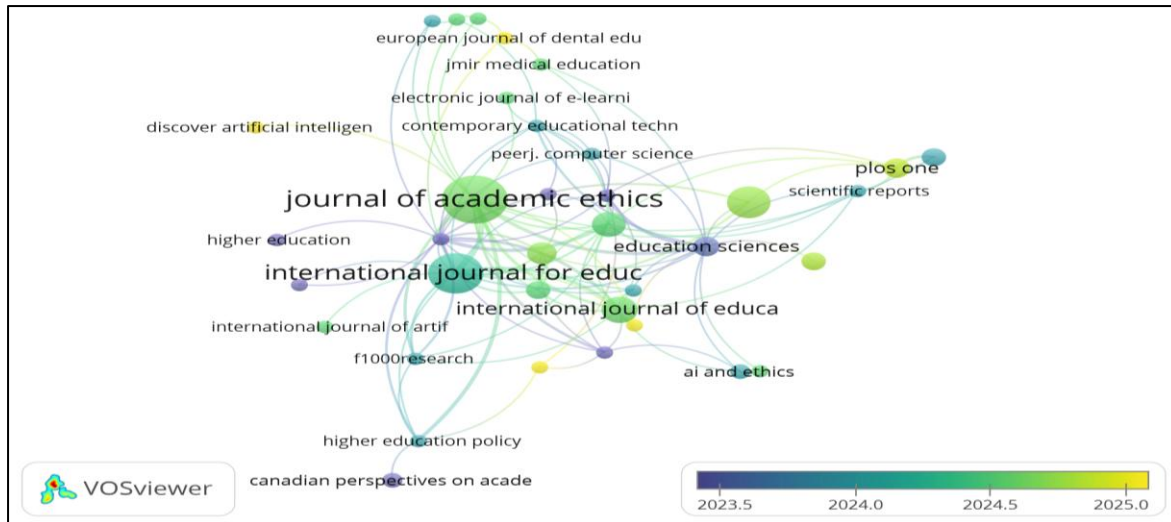


Figure 4. Source overlay map for publications on academic integrity and generative AI in higher education (2023–2025).

2.3 Highly cited authors

Among authors with at least two publications, citation totals were concentrated in a small group (Table 6). J. Reuben Shipway and Chung Kwan Lo were the most highly cited (each with two publications and more than 1,100 citations). Mike Perkins combined high output with high citation visibility (six publications; 600 citations). Lorna Waddington, Tomáš Foltýnek, Debora Weber-Wulff, and Sonja Bjelobaba also appeared as influential contributors in this early period.

Table 6 Most highly cited authors in the corpus on academic integrity and generative AI in higher education (2023–2025).

Author	Number of publications	Total citations	Mean citations per publication
J. Reuben Shipway	2	1,277	638.5
Chung Kwan Lo	2	1,162	581.0
Mike Perkins	6	600	100.0
Lorna Waddington	2	223	111.5
Tomáš Foltýnek	2	223	111.5
Debora Weber-Wulff	2	223	111.5
Sonja Bjelobaba	2	223	111.5
Jasper Roe	4	215	53.8
Darius Postma	2	113	56.5
Don Hickerson	2	113	56.5

Note. Authors are ordered by total citations (Lens.org scholarly citations at the time of data extraction). Data are based on authors with at least two publications in the corpus.

Figure 5 provides a visualization of the highly cited author set within the threshold set for the author network.

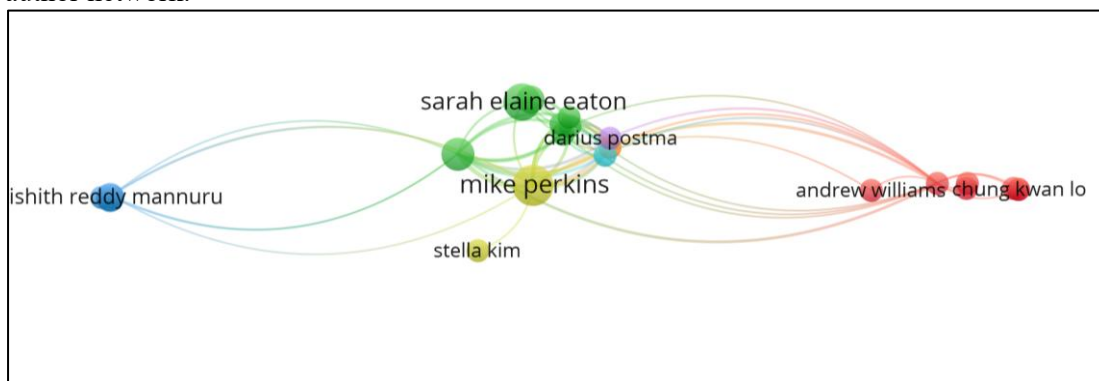


Figure 5. Overlay author network showing the most highly cited authors (minimum two publications).

2.4 Highly Cited Publications

Using Lens “Citing Works Count,” 54 publications in the corpus had ≥ 20 citations (about 18% of the 303 documents). These highly cited works were concentrated in 2023 (28 items) and 2024 (23 items), with only three from 2025, reflecting the shorter citation window for the most recent year. Table 7 presents the ten most cited publications in the corpus; all published in 2023.

Table 7. Top-cited publications on academic integrity and generative AI in higher education (2023–2025).

First author	Year	Title	Source/journal	Document type	Citations*
Chung Kwan Lo	2023	What Is the Impact of ChatGPT on Education? A Rapid Review of the Literature	<i>Education Sciences</i>	Journal article	1,131
Debby R. E. Cotton	2023	Chatting and cheating: Ensuring academic integrity in the era of ChatGPT	<i>Innovations in Education and Teaching International</i>	Journal article	1,109
Rosario Michel-Villarreal	2023	Challenges and Opportunities of Generative AI for Higher Education as Explained by ChatGPT	<i>Education Sciences</i>	Journal article	469
Michael R. King	2023	A Conversation on Artificial Intelligence, Chatbots, and Plagiarism in Higher Education	<i>Journal of Academic Ethics</i>	Editorial	435
Mike Perkins	2023	Academic integrity considerations of AI Large Language Models in the post-pandemic era: ChatGPT and beyond	<i>Journal of University Teaching and Learning Practice</i>	Journal article	381
Joseph Crawford	2023	Leadership is needed for ethical ChatGPT: Character, assessment, and learning using artificial intelligence (AI)	<i>Journal of University Teaching and Learning Practice</i>	Journal article	303



First author	Year	Title	Source/journal	Document type	Citations*
Muhammad Imran	2023	Analyzing the role of ChatGPT as a writing assistant at the higher education level: A systematic review	<i>Contemporary Educational Technology</i>	Journal article	225
Debora Weber-Wulff	2023	Testing of detection tools for AI-generated text	<i>International Journal for Educational Integrity</i>	Journal article	219
Tom Farrelly	2023	Generative Artificial Intelligence: Implications and Considerations for Higher Education Practice	<i>Education Sciences</i>	Journal article	216
Benjamin Luke Moorhouse	2023	Generative AI tools and assessment: Guidelines of the world's top-ranking universities	<i>Computers and Education: Open</i>	Journal article	206

Across these highly cited works, early influence is anchored by rapid or systematic reviews, conceptual and policy-focused discussions of integrity and institutional response, and studies centered on assessment practices and detection tools. Given the short observation window, citation counts primarily reflect early uptake and visibility; these publications are therefore treated as early anchors rather than definitive indicators of long-term scholarly impact.

Discussion

This study mapped early scholarship on academic integrity and generative AI in higher education (2023–2025) using bibliometric and science-mapping techniques. The results suggest a fast-growing literature that is still settling its shared vocabulary, core outlets, and collaborative centers. Citation-based patterns should be read as early visibility rather than stable influence because 2025 items had limited time to accumulate citations at the extraction point. Geographic patterns are also interpreted cautiously because affiliation metadata were missing for more than half of the records; country results, therefore, reflect the known-affiliation subset rather than full global coverage.

RQ1. Themes from keyword co-occurrence

The keyword co-occurrence network forms four recurring clusters: (1) integrity and misconduct, (2) GenAI tool use and academic writing, (3) student perceptions with population descriptors and selected discipline-linked terms, and (4) ethics and governance. Together, these clusters show that early work tends to treat GenAI as an integrity-sensitive educational technology, where authorship, disclosure, and assessment design are central concerns. The prominence of misconduct-related terms near the network's center is also partly design-driven: because the search string included plagiarism, cheating, and misconduct terms, the dataset represents a misconduct-salient intersection of GenAI and integrity research rather than the wider GenAI-in-higher-education literature. Even within this bounded scope, the clustering is informative because it shows the literature branching beyond detection and enforcement toward student-facing questions and governance debates. In short, the early integrity-focused GenAI literature is already differentiating into recognizable lines of inquiry, even within a corpus that foregrounds misconduct-related terms.

RQ2. Collaboration and influence from co-authorship and citations

The co-authorship map highlights a small set of repeat contributors who form the main connected components, alongside a larger periphery of weakly connected or one-off contributors within the mapped subset. This core-periphery pattern is consistent with an emerging area, where a few teams develop multi-paper lines of work while many others contribute single, context-specific studies. Because the visualization uses a minimum-publication threshold for readability and because affiliation metadata were incomplete, the map is best interpreted as collaboration patterns among repeat authors rather than a complete description of the research community. This pattern suggests that early influence



has been shaped more by agenda-setting syntheses and policy framings than by mature, cumulative empirical programs.

Influence indicators also point to a relatively concentrated early landscape, with specialist integrity journals and education or educational technology journals serving as key publication venues. Highly cited authors and papers are dominated by 2023 publications, reflecting first-mover advantage in a short citation window. The most visible early contributions are largely reviews and framing papers, alongside work on assessment and detection, suggesting that the field’s initial agenda has been shaped by synthesis and guidance-oriented scholarship, followed by more specialized empirical work.

Conclusion

Overall, the study provides a baseline view of how integrity-focused GenAI scholarship organized itself in the first three years after ChatGPT’s release: rapid growth, clear thematic branching, and early influence concentrated in a small set of venues and publications, interpreted with appropriate caution due to missing affiliation metadata and the intentionally bounded query.

Knowledge Contribution

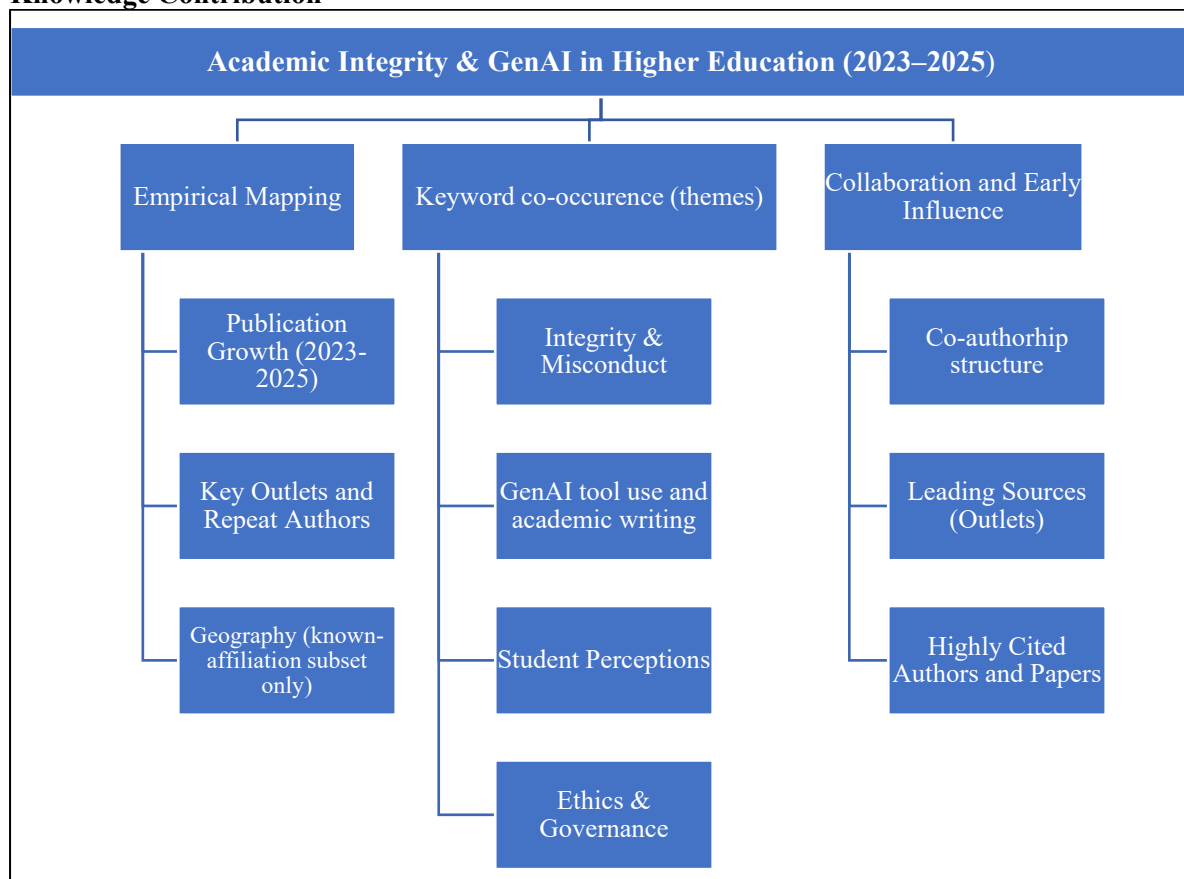


Figure 6. Mind map of Knowledge Contribution

Note. Geography reflects records with available affiliation metadata only. Arrows indicate structure, not causal relationships.

The mind map summarizes this study’s contribution to early research on academic integrity and generative AI in higher education in the post-ChatGPT period (2023–2025). First, it provides an empirical snapshot of the literature by documenting publication growth, identifying recurring outlets and repeat authors, and describing geographic patterns based only on records with available affiliation metadata. Second, it clarifies the field’s thematic structure using keyword co-occurrence, showing four recurring clusters: integrity and misconduct, GenAI tool use and academic writing, student perceptions,



and ethics and governance. Third, it highlights early collaboration and visibility by combining co-authorship structure with citation-based indicators (leading sources and highly cited authors and papers). Taken together, the study offers a structured baseline of how this misconduct-salient subfield has organized itself during the first three years of rapid GenAI adoption, while keeping conclusions within the limits of the available metadata and the study's bounded query.

Recommendations

These recommendations follow directly from the mapping results and are meant to be practical for researchers, universities, and instructors working in AI-rich higher education.

Research

The keyword co-occurrence map shows a field centered on integrity and misconduct while also branching into student perceptions and governance. Building on this, future work should move beyond single-institution snapshots and short observation windows. Comparative and longitudinal studies can better track how policy changes, assessment redesign, and AI literacy initiatives relate to student practices across time, disciplines, and institutional types. Given that this review drew on English-language Lens records and used a misconduct-salient search string, future bibliometric reviews should broaden coverage by including additional databases and, where feasible, non-English outputs. Where possible, sensitivity checks should be run using expanded queries (for example, adding "LLM," "large language model," "AI writing," "authorship," and "assessment integrity") to test whether the thematic structure holds under different inclusion rules.

Institutional policy and governance

Early "influence" in this area is concentrated in highly visible synthesis and policy-facing publications, suggesting that institutions are still working toward shared definitions and workable guidance. Universities should therefore treat GenAI as a system-level issue shaped by students, instructors, assessment practices, and institutional rules, rather than framing it mainly as an individual misconduct problem. Policies are most useful when they clearly state acceptable and unacceptable uses, disclosure expectations, and authorship boundaries, while remaining flexible enough to be updated as tools and practices change. Given the mixed evidence and ongoing debate around AI-detection tools, these systems should not be positioned as the primary safeguard; they are more defensible when used cautiously within transparent procedures and paired with educational responses.

Teaching, learning, and assessment practice

Because the mapping also links GenAI strongly to writing and assessment, making course and task design a practical leverage point. Instructors can reduce unreflective AI outsourcing by emphasizing process and accountability, such as requiring drafts or checkpoints, asking for brief reflective justifications when AI is used, and incorporating interactive or in-class components when appropriate. Clear instructions about what kinds of AI support are allowed, alongside short AI literacy and ethics activities, can help students align everyday tool use with integrity expectations. Together, these steps reflect the study's framework by treating academic integrity in AI-rich settings as something shaped by student practice, assessment design, institutional guidance, and available technologies.





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