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A Bibliometric Analysis of AI Plagiarism in Education

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Abstract:
This study aims to map the development of research on plagiarism related to the use of Artificial Intelligence (AI) in the field of education through a bibliometric approach. A total of 250 scientific articles with the keyword AI Plagiarism in education published between 2015 and 2025 were analyzed. Data extraction was conducted using *Publish or Perish 8* software, sorting data by author keywords and abstract using *Mendeley* software, and bibliometric visualization using *VOSviewer* software. The findings reveal that plagiarism in educational contexts significantly affects academic integrity. The issue has become increasingly complex with the widespread use of generative AI platforms such as ChatGPT. The analysis also shows a strong correlation between plagiarism cases and academic integrity, ethics, and policy. Most of the studies in this field originate from Europe, North America, and certain parts of Asia, indicating a high level of academic concern regarding digital ethics. This research is expected to serve as a comprehensive mapping of research trends, collaboration networks, and emerging themes, providing valuable insights for the formulation of academic policies that are responsive to technological advancements.

Keywords: Bibliometric, AI Plagiarism, Education

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Introduction

The integration of advanced technologies such as Artificial Intelligence (AI) is already included in the concept of Society 5.0 (Yamtinah et al. 2023). AI is one of the main pillars that distinguishes this civilization from previous eras (Subandowo 2022). This technology plays several roles that can support human tasks in so many fields, such as education, medical industry, design, and manufacturing, etc (Alier, García-Peñalvo, and Camba 2024; Gmeiner et al. 2023; Nagi et al. 2023).

Several types of AI that have been developed recently, one of frequently used in the field of education is chatbot website. Chatbot is a type of AI technology that utilizes natural language processing and machine learning (Alfharezi and Kuntardi 2023). The integration of AI into education, particularly through generative chatbots, has the potential to revolutionize teaching and learning for educators, enhancing both administrative and instructional aspects (Williams 2023). The emergence of generative platforms like ChatGPT makes accessing information easier, but it also brings new challenges and opportunities related to plagiarism.

Traditionally, plagiarism refers to the act of copying another person's work without giving proper credit, whereas ChatGPT and other AI tools have the ability to reference and cite existing sources (Flaherty and Yurch 2024). The existence of AI such as ChatGPT can help users improve language structure, generate ideas, and access information quickly (Laily Fitria et al. 2024). Related to this opportunity, one of the challenges is the use of AI in students' academic writing, which can be considered a form of plagiarism (Sysoyev 2024). This practice not only undermines the authenticity and originality of academic work but also raises ethical issues related to academic integrity. Additionally, excessive reliance on AI-generated content can hinder the development of critical thinking and writing skills among students (Zhai, Wibowo, and Li 2024)

Therefore, the phenomenon of AI plagiarism in education has become an increasingly important issue to study. On one hand, AI offers high efficiency and ease of access, but on the other hand, this technology can generate text that is technically original yet does not reflect the student's original thinking, thereby complicating the detection of plagiarism by traditional methods (Mhlanga 2023; Mpolomoka et al. 2025). It creates a dilemma regarding how educational institutions can utilize AI productively while maintaining academic integrity.

Several studies highlight that the emergence of AI plagiarism poses both challenges and opportunities in education. On the one hand, AI can facilitate learning by improving writing skills, generating ideas, and supporting students' academic work. On the other hand, it raises serious ethical concerns, particularly regarding academic integrity and originality (Mhlanga 2023; Suarda et al. 2024). Therefore, a review of the extent of research and publications on AI plagiarism in education is necessary to understand the development of this issue more comprehensively. This study aims to provide a bibliometric literature review to analyze the trends, challenges, and opportunities of AI plagiarism in educational contexts. Furthermore, it is expected that this study can serve as a reference for further insights and future research opportunities in maintaining academic integrity in the era of AI.

Methodology

This study applies a bibliometric literature review to explore the topic of AI plagiarism in education. The research process was carried out in five stages to ensure the validity of the data (Kartimi et al. 2022). The stages are shown in Figure 1.



Figure 1. Stages of Bibliometric Literature Review

The following describes the stages of processing literature data.

1. Defining the Keyword
   In this research, the general keyword "AI Plagiarism in Education" was employed. This keyword was subsequently utilized to gather literature data from the Google Scholar database using the Publish or Perish 8 (PoP 8) software. This software can be free-downloaded at the following link (harzing.com/resources/publish-or-perish/windows).
2. Preliminary Literature Data Retrieval
   Preliminary Literature Data Retrieval was conducted using Publish or Perish 8 software windows version. The process was carried out using the above keyword for the period 2015-2025, sourced from Google Scholar. A total of 250 articles related to these keywords were obtained. Further analysis revealed that these data had a total of 41,979 citations. This indicates that these articles have been highly relevant recently. More detailed data are presented in Table 1. The data were then saved in .ris format for further selection in the next stage.

Table 1. Preliminary Literature Data Retrieval Metrics

No	Preliminary Literature Data Retrieval	Results
1	Publication years	2015-2025
2	Papers	250
3	Citations	41979
4	Cites/author	23534.37
5	Authors/paper	2.54
6	H-index	84

3. Filtering Literature Data
   Data in .ris extension format, then entered into Mendeley Software for literature data selection. This free software can be downloaded at the following link (www.mendeley.com/download-reference-manager/windows). Data filtering was carried out by reading the article titles and manually selecting Author Keywords. The titles and Author Keywords selected were those related to the research topic. A total of 66 data were obtained in this stage. The data were then saved in .ris format for analysis in the final stage.

4. Comprehensive Data Retrieval
   A total of 66 article titles retrieved via Mendeley software were subsequently downloaded from Google Scholar for further analysis. Each article, including those related to AI Plagiarism in Education, was examined in depth. This review was considered essential for identifying and mapping potential research opportunities.
5. Literature Data Extraction and Analysis
   The data consisted of 66 articles stored in a .ris file format, which were then extracted and analyzed using *VOSviewer* software. *VOSviewer* is a software application designed to create and display bibliometric networks. This free software can be downloaded at the following link (www.vosviewer.com/download). The analysis in this study focuses on network visualization, overlay visualization, and density visualization.

Results and Discussion

Visualization Topic Area of AI Plagiarism in Education

Processing the literature dataset with *VOSviewer* resulted in the identification of five clusters (red, purple, blue, yellow, and green). The bibliometric mapping from this analysis is displayed through three visualization types: network visualization (Figure 2), overlay visualization (Figure 3), and density visualization (Figure 5). These visual representations highlight the relationships among the most frequently occurring keywords across 66 articles.

The results of the network visualization are presented in Figure 2 with five color clusters. The first cluster in red is the *artificial intelligence and plagiarism* cluster, consisting of 9 keywords. This cluster reflects research related to the application of AI in plagiarism detection, cheating, and natural language processing. The second cluster in blue is the *academic integrity* cluster with 7 keywords, focusing on issues of honesty, ethic, fairness, and assessment in education. The third cluster in green, comprising 7 keywords, represents the *AI policy and education* cluster, highlighting the role of chatbots, large language models, and ethics in teaching and learning. The fourth cluster in yellow includes 4 keywords and is categorized as the *higher education and assessment* cluster, emphasizing academic writing, ethics, and AI-related plagiarism. The fifth cluster in purple consists of 4 keywords and represents the *generative AI* cluster, which is strongly connected to ChatGPT and OpenAI as emerging topics in this field.

Figure 2 shows the bibliometric network visualization divided into five clusters. The red cluster links artificial intelligence with plagiarism, featuring terms like plagiarism detection, NLP, machine learning, and cheating, reflecting AI's dual role as both innovation and a threat to academic honesty. The blue cluster centers on academic dishonesty, equity, inclusion, and language assessment, indicating that integrity concerns intersect with fairness and inclusivity. The green cluster highlights AI policy and education, with keywords such as chatbots, large language models, and AI ethics, emphasizing the integration of generative technologies and their ethical implications. The yellow cluster connects higher education to academic writing, assessment, and AI plagiarism, showing AI's impact on evaluation, originality, and authorship. Finally, the purple cluster (4 keywords) represents the generative AI research front, where strong

ties between ChatGPT, OpenAI, and generative AI mark them as central in scholarly discussions, bridging issues of policy, integrity, and assessment.

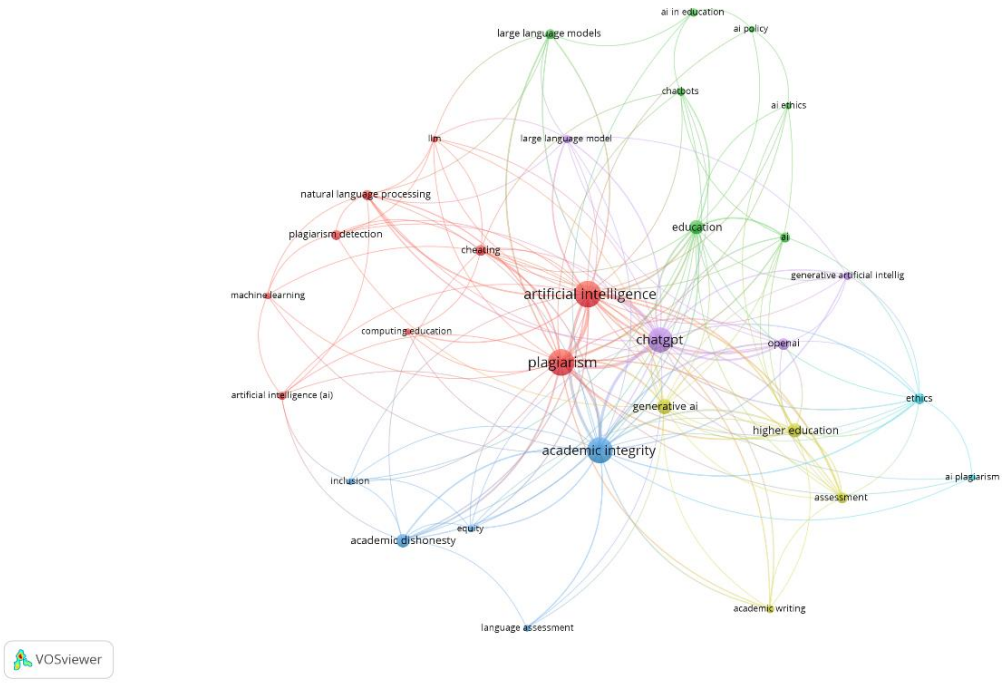


Figure 2. Network Visualization

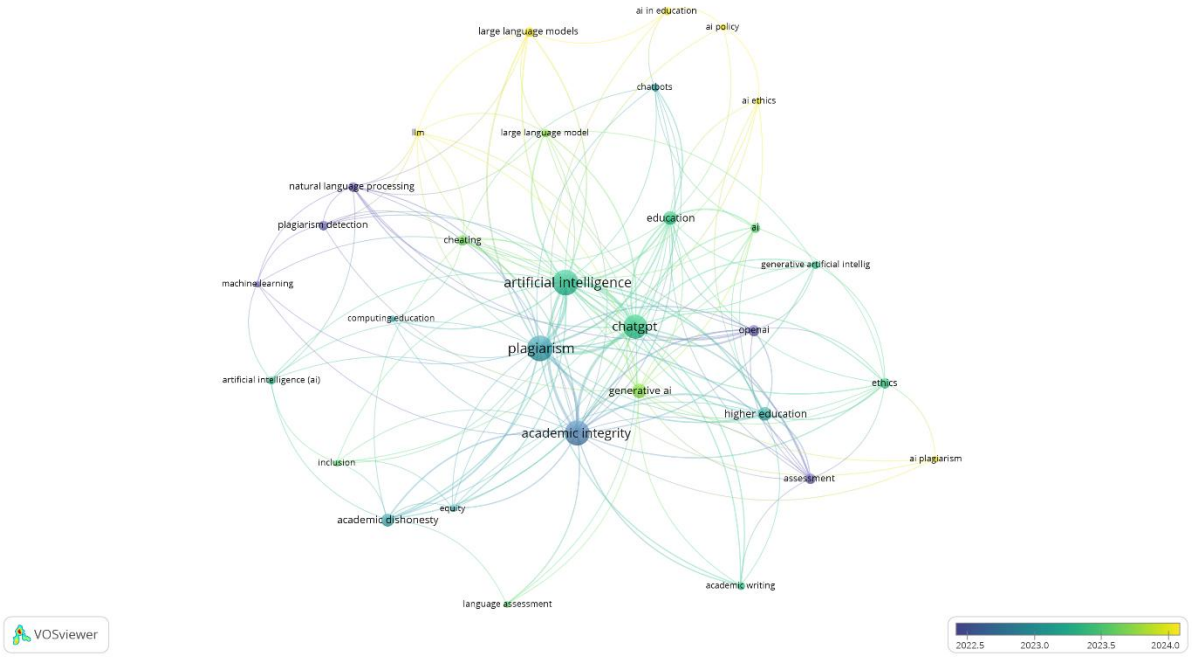


Figure 3. Overlay Visualization

Figure 3 presents an overlay visualization of the bibliometric mapping**.** This map highlights the development of research themes on artificial intelligence, plagiarism, and academic integrity over time. The color gradient from purple to yellow indicates the chronological progression of keywords, where purple represents earlier studies (around 2022) and yellow reflects the most recent trends (2023–2024). From

Figure 3, the keywords “AI policy,” “AI in education,” “large language models,” and “AI plagiarism” are shown in yellow, suggesting that these are the latest emerging topics. Meanwhile, terms such as “plagiarism detection,” “machine learning,” and “academic dishonesty” appear in darker shades, showing that they were more dominant in earlier research. This trend suggests a shift in focus from technical aspects of AI and plagiarism detection toward broader discussions of ethics, policies, and the role of generative AI in higher education. Overall, the visualization indicates that research interest has moved rapidly in recent years toward ChatGPT, OpenAI, and policy-related issues, reflecting the influence of generative AI in reshaping academic practices. Based on the data collected, the number of publications related to AI plagiarism in the field of education increased rapidly in 2023 (Figure 4).

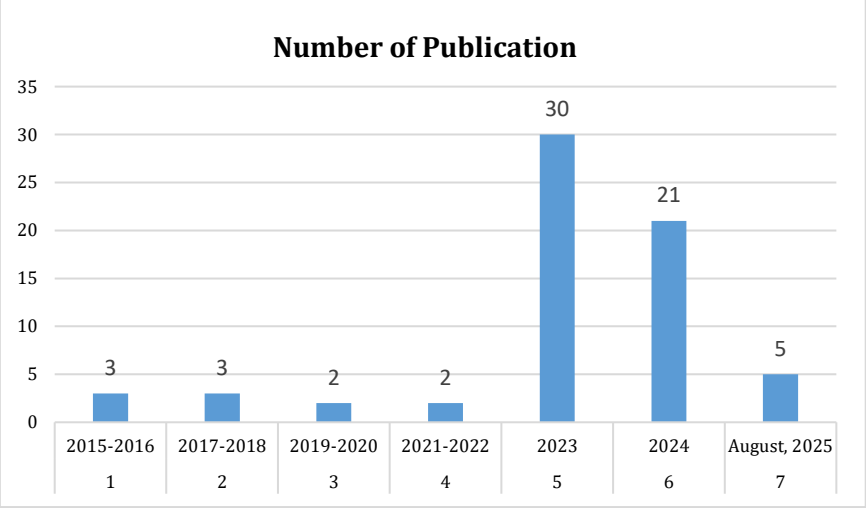


Figure 4. Yearly Publication Comparison

The emergence of generative AI such as ChatGPT poses new challenges in the field of education, particularly regarding issues of plagiarism and academic integrity. Previous research has largely focused on technical aspects, such as plagiarism detection using machine learning, but recent trends indicate a shift toward discussions of ethics, policy, and the impact of large language models on academic practices (Deng and Joshi 2024; Perkins 2023; Plata, De Guzman, and Quesada 2023; Sahu 2016).

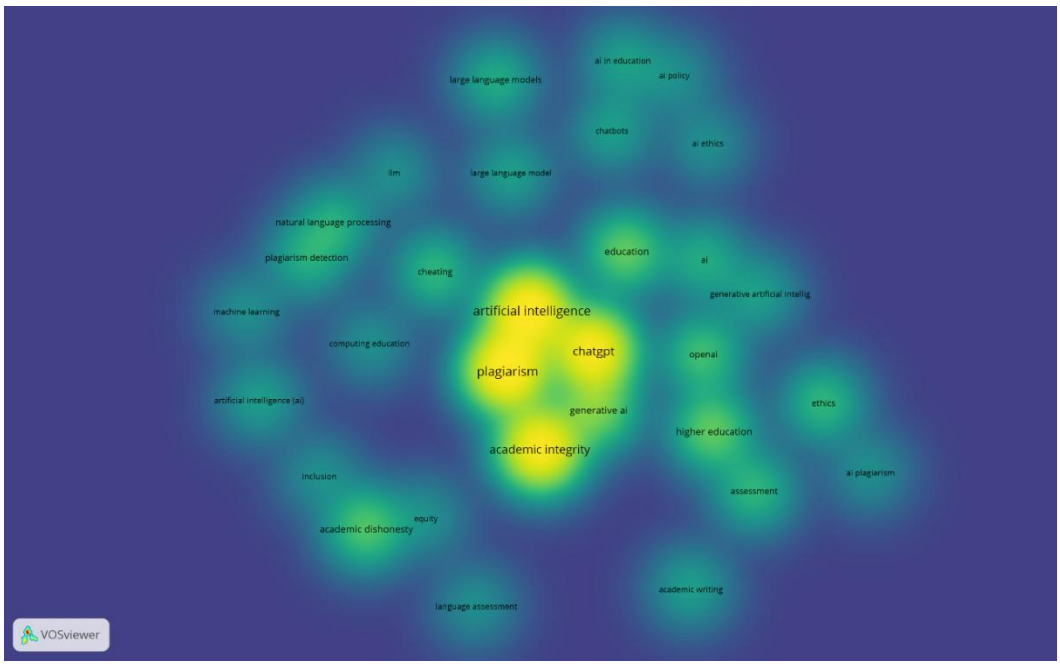


Figure 5. Density Visualiazition

The density visualization in Figure 5 illustrates the frequency of keyword occurrences within the analyzed articles. The brighter yellow areas indicate keywords that appear more frequently compared to others. Based on the 66 articles included in this study, the keywords *"artificial intelligence," "ChatGPT," "plagiarism,"* and *"academic integrity"* show a high level of density. This finding suggests that academic discussions in the field of education are increasingly focused on the intersection between the advancement of artificial intelligence and issues of plagiarism as well as academic integrity. Furthermore, the emergence of keywords such as *"generative AI," "higher education,"* and *"ethics"* reflects a research trend directed toward the impact of large language models (LLMs) on ethics, policy, and academic fairness. Thus, the growing emphasis on academic integrity and plagiarism aligns with the urgent need for education systems to respond to the transformations driven by generative AI technologies (Farrelly and Baker 2023; Kramm and McKenna 2023).

Publication Location

The extracted literature dataset was mapped based on the location of publication using Map Customizer (www.mapcustomizer.com/). This visualization is presented in **Figure 6**, which shows the distribution of 66 articles across several countries. The map reveals that most publications are concentrated in Europe, particularly in countries such as Germany, the United Kingdom, and the Netherlands, where the markers are densely clustered. In addition, a considerable number of studies originate from North America, especially the United States and Canada, as well as from Asia, with India and Indonesia appearing as significant contributors. Meanwhile, Australia also shows an emerging presence in this field. On the other hand, research contributions from Africa and certain parts of the Middle East remain limited. This indicates that while scholarly discussions on artificial intelligence, plagiarism, and academic integrity are strongly emerging in Western countries and parts of Asia, there is

still an opportunity to expand this research area in underrepresented regions to ensure a more global perspective on the topic.

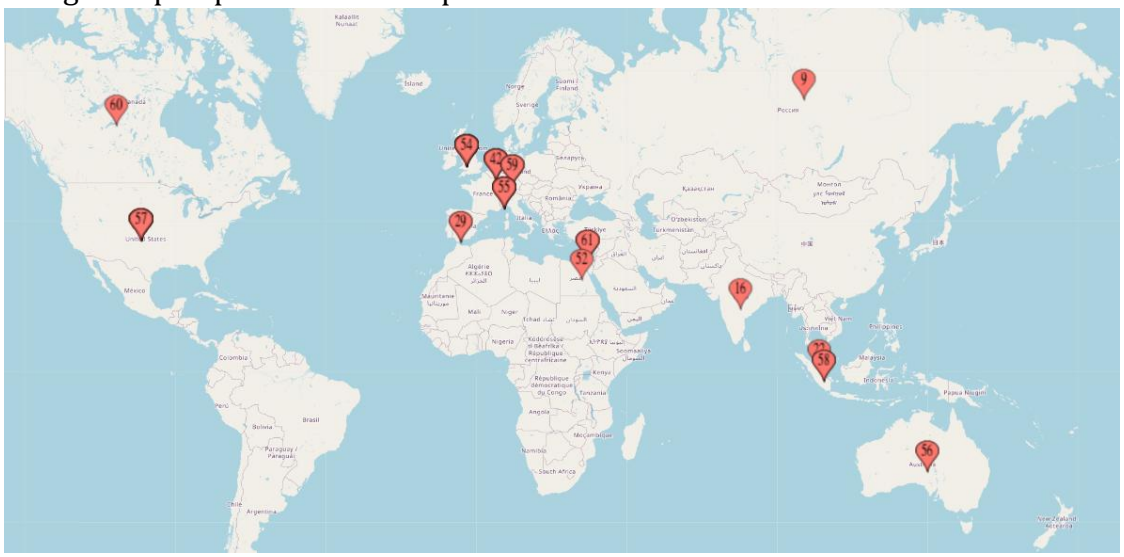


Figure 6. Publication Location

Key Dimensions Influencing AI Plagiarism in Education

In order to understand the broader landscape of AI plagiarism in education, it is important to examine the main aspects that influence its occurrence and regulation. Based on the bibliometric findings, three key dimensions emerge which are AI Policy, AI Ethics, and Academic Integrity. Each of these aspects plays a critical role in shaping how students, educators, and institutions engage with AI technologies in academic settings. AI policies establish formal rules and preventive mechanisms, AI ethics highlight the moral and digital literacy perspectives, while academic integrity reinforces the underlying values and cultural norms of higher education.

To provide a clearer overview, Table 2 summarizes these three dimensions, their forms of influence, and their relationship with plagiarism cases, supported by recent scholarly contributions.

Table 2. Analyzed Aspect of AI Plagiarism in Education

Aspect Analyzed	Form of Influence	Relationship with Plagiarism Cases	Authors
AI Policy (rules & AI usage regulations)	Regulation and prevention	AI Policy for teaching and learning in university	(Chan 2023; Ghimire and Edwards 2024)
AI Ethics (digital literacy, morality, ethical awareness in AI use)	Originality and Plagiarism	Digital ethics limits the misuse of AI and plagiarism.	(Eaton 2023; Lim et al. 2023)
Academic Integrity (values of honesty, responsibility, academic culture)	Academic values	The campus civitas uses AI to support the efficiency of the learning process, not to replace task/jobs.	(Gallent-Torres, Zapata-González, and Ortego-Hernando 2023; Sullivan, Kelly, and McLaughlan 2023)

Conclusion

Plagiarism driven by AI in education has emerged as a growing concern with the rapid advancement of generative tools like ChatGPT. The bibliometric findings reveal five main clusters, showing a research trend that has shifted from focusing primarily on plagiarism detection to broader discussions on ethics, academic integrity, and AI policy. Geographically, publications are largely concentrated in Europe, North America, and certain parts of Asia, suggesting the need for more active contributions from other regions. Moreover, the study highlights that AI plagiarism research is closely connected to three critical dimensions which are AI policy, digital ethics, and academic integrity that crucial for maintaining a balance between technological innovation and academic originality. Future investigations may further examine how these aspects can be implemented across various educational levels and settings.

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