

From Technical Aid to Research Partner: The Adoption of Generative AI by Indonesian Lecturers

Aksendro Maximilian¹, Putut Wisnu Kurniawan^{2*}, Hajjah Zulianti³, Nurdin Hidayat², Galuh Dwi Ajeng³, Andri Wicaksono³, Purnama Hanan Murod¹

¹Faculty of Teacher Training and Education, Universitas Lampung, Lampung, Indonesia

²Department of Social Sciences Education, STKIP PGRI Bandar Lampung, Lampung, Indonesia

³Department of Languages and Arts Education, STKIP PGRI Bandar Lampung, Lampung, Indonesia

*email: pututbukan1@gmail.com

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ABSTRACT:

This study investigates the adoption of Generative Artificial Intelligence (GenAI) technologies in academic writing and publication among history education lecturers in Indonesia. Using a case study approach, data were collected from 50 lecturers across Sumatra, Java, Kalimantan, Sulawesi, and Bali through questionnaires, interviews, and focus group discussions. The findings reveal that ChatGPT, Grammarly, Google Translate, Gemini, Quillbot, and Turnitin are the most frequently used GenAI tools, with adoption driven by their simplicity, efficiency, and ability to support multiple stages of research writing. Five primary objectives are identified, i.e., idea generation and research design, literature synthesis, data analysis, content editing and proofreading, and preparation for publication and dissemination. Despite these benefits, lecturers face four significant challenges, i.e., maintaining academic integrity, uneven digital literacy, over-reliance on GenAI, and issues of data validity and accuracy. The study highlights both the opportunities and challenges of integrating GenAI in academic practices, emphasizing the need for ethical clarity, institutional support, and capacity-building programs. Findings contribute to the broader discourse on technology adoption in higher education, offering insights for policymakers, educators, and journal publishers seeking to balance innovation with academic rigor.

Keywords: GenAI, Artificial Intelligence, Indonesian History, Academic Writing, Publication

1. Introduction

Generative Artificial Intelligence (GenAI) is increasingly being adopted in the education sector, transforming learning, assessment, classroom management, and publication. However, the use of GenAI also raises pressing issues, particularly regarding the authorship and credibility of educational outcomes. There are several objectives for using GenAI in the context of education, such as personalising learning, analysing data to evaluate students' performance, and developing adaptive education platforms [1]. In addition, the integration of GenAI into education can also create interactive learning

experiences through educational chatbots and virtual tutors for supporting the academics productivity [2]. Thus, the use of GenAI in education is expected to be useful to improve the efficiency, relevance, and quality of education to prepare future generations to face the increasingly complex demands of the era.

To support the fourth Asta Cita of the Government of the Republic of Indonesia, which relates to strengthening human resource development, science, technology, and education, various GenAI technologies have been widely used by teachers to help students for achieving learning objectives by utilising technological

advances. However, there are diverse views on the use of GenAI in the context of education in Indonesia. Some studies show significant enthusiasm for its application [3], [4], while others express concerns regarding its effectiveness, implementation, and maintenance of academic integrity among users in higher education. Some researchers state that trust in authors declines when the involvement of AI in the writing process is detected [5]. In addition, the use of GenAI in writing requires ethical validation to prevent potential misuse in efforts to generate new scientific insights and educate future professionals [6]. The integration of GenAI also raises concerns about the potential replacement of human labour by technology [7]. Therefore, social science educators, including history educators, must be able to address these concerns by integrating GenAI into academic use.

In recent years, a number of studies have discussed the integration of GenAI technology in the context of academic writing. Scientific research suggests that incorporating GenAI-based tools can benefit writing proficiency [4], [8]. Other literature reviews have confirmed that the integration of GenAI in an educational context requires substantial adaptation to teaching methodologies due to the challenges and advantages that arise in this technological paradigm shift [9]. Simultaneously, other research has explored the use of GenAI technology to support academic writing, with the aim of enhancing personalisation and contextualisation in authentic learning contexts [10]. Furthermore, empirical investigations into the acceptance of GenAI reveal that users appreciate the feedback provided by GenAI in the context of academic writing, leading to the creation of a method to effectively and accurately distinguish text generated by GenAI for the sake of academic integrity [11]. However, these studies have a research gap, namely that they do not discuss the use of GenAI technology as a tool that can be used by history lecturers in publishing their scientific articles. Based on this gap, there are several research problems, namely:

1. What GenAI technologies are frequently adopted by Indonesian history education lecturers to write and publish research articles?
2. What are the objectives of history education lecturers in adopting GenAI technology in the process of writing research articles for publication?
3. What are the main challenges faced by history education lecturers in utilising GenAI technology when writing research articles for publication?

The urgency in answering the above research questions is to gain an up-to-date understanding of the use of GenAI technology in the scientific writing process. This is useful for supporting lecturers as researchers in selecting and applying the GenAI technology that best suits their needs. Thus, there is an increase in efficiency and quality in scientific article writing. In addition, understanding the objectives to be achieved in adopting GenAI technology in the process of writing research articles is also important. This can assist in the development and adaptation of GenAI technology to suit specific needs and objectives in scientific writing. On the other hand, studying the main challenges faced by history lecturers is also an important step aimed at helping to develop strategies to overcome obstacles that may reduce productivity and quality in scientific writing.

There are several reasons to research the various types of GenAI technology that lecturers in the field of history can use to write research articles for publication. GenAI technology can assist lecturers in the process of literature search, data analysis, and even offer suggestions for writing improvements [12], [13], [14], thereby accelerating the research process and allowing lecturers to focus on more in-depth analysis. Second, the use of AI in research can open the door to new innovations [15], [16], [17], namely that GenAI technology can help lecturers find patterns or trends that may be missed manually, paving the way for more innovative and relevant research. Third, the use of GenAI technology can also increase accessibility to knowledge and information for history lecturers [6], [18], namely by helping to translate and interpret texts other than Indonesian so that lecturers can access

literature and research from various sources more effectively. Thus, these three things can help lecturers as researchers to optimise their potential in producing impactful research and meeting the increasingly high demands of professionalism in the academic world.

Previous research has focused on the use of GenAI in education [3]-[11]. However, research discussing the use of GenAI for history education lecturers in scientific article publications has never been conducted, especially in Indonesia, making it urgent to do so. The use of technology, particularly GenAI, is an important component for lecturers who have research tasks to produce impactful research and enhance professionalism. Therefore, this is a novelty of this research that can contribute to the wider integration of AI technology in the field of history learning.

2. Methodology

This research is a case study that aims to reveal social phenomena within contextual boundaries and treat them as cases. This research uses a dual data collection method, and the placement of researchers as critical instruments is the reason for choosing a case study research design. Using a qualitative approach, this study explores how history lecturers describe the types of GenAI technology used in writing research articles for publication, examines the objectives of adopting GenAI technology in the process of writing research articles for publication, and explores the various challenges faced in utilising GenAI technology when writing research articles for publication.

This case study research was conducted in Indonesia, particularly in the higher education institutions. The participants of this research were 50 history education lecturers spread across Indonesia, including in Sumatra, Java, Kalimantan, Sulawesi, and Bali. The method used in this study is purposive sampling with the following criteria: participants must be history education lecturers, have experience in publishing research articles in national and international journals, have at least a master's degree and have taught history at their institutions, and be willing to participate in this

study. In addition, the researchers provided informed consent to the research respondents regarding the purpose of the research and the duration of data collection. Participants were provided with information about the general results of the research via email, and the confidentiality of the data obtained was guaranteed.

The researchers used three instruments in this study, namely questionnaires, interviews, and focus group discussions. The data collection process was conducted online and offline in the city of Bandar Lampung. Offline data collection was conducted for participants residing in Lampung province and its surroundings, while other participants participated online. The research team rented a co-working space as a research support room to invite participants to come for interviews, FGDs, and questionnaires. The research questionnaire serves to determine the objectives of adopting GenAI technology in writing research articles. The questionnaire was adopted from previous studies [4], [22]. Meanwhile, interviews were conducted to obtain data on the various types of AI technology used and the main challenges faced in utilising AI technology when writing research articles for publication. The research questions were compiled based on several studies [12], [23], [24]. FGDs were conducted to gain in-depth insights into the main challenges faced in utilising AI technology when writing research articles. The FGD implementation guidelines refer to the research by Mahapatra [25]. The research team has submitted an Ethical Clearance from LPPM STKIP PGRI Bandar Lampung before collecting research data.

After obtaining the research data, the researchers analysed the data using descriptive statistical analysis to describe the questionnaire data using SPSS version 27. The researchers asked lecturers in the field of statistics to analyse the research data obtained from the questionnaire. Meanwhile, thematic analysis [26] was used to analyse data obtained through interviews and FGDs. Thematic analysis was analysed by two professors in the field of History Education to identify patterns and themes regarding the types

of AI technology used and the main challenges faced in utilising AI technology when writing research articles for publication.

3. Results

3.1. Adoption of GenAI Technology by Indonesian History Education Lecturers

The findings of this study focus on answering the first research question, for which data was obtained using questionnaires, interviews, and focus group discussions. The data obtained covers knowledge and use of GenAI-based technology, types of GenAI-based technology or tools, how often lecturers use GenAI-based technology (frequency), reasons for using GenAI technology, and the conveniences offered by GenAI to its users. The questionnaire data shows that there are 19 respondents who have high knowledge of GenAI-based technology. There are 24 respondents who have moderate knowledge. Meanwhile, there are 14 respondents

who have low knowledge of GenAI technology. The distribution of research respondents has been divided into three categories, i.e., knowledgeable, average, and unknowledgeable. From Figure 1, it can be seen that 38% of lecturers fall into the knowledgeable category, 48% fall into the average category, and 14% fall into the unknowledgeable category. The results of the FGD reinforce the finding that participants in the average category stated that they were familiar with these tools because they often used generative tools that are quite well known, such as ChatGPT, Gemini, and Grammarly, to help them write faster. According to a study, most users of well-known GenAI technologies, i.e., ChatGPT, do so because of their ease of use [6]. One reason for this is that they are easy to understand and have a user-friendly design for a wide range of users. Therefore, new users do not need to learn and adapt much, making it easier for them to adopt this technology.

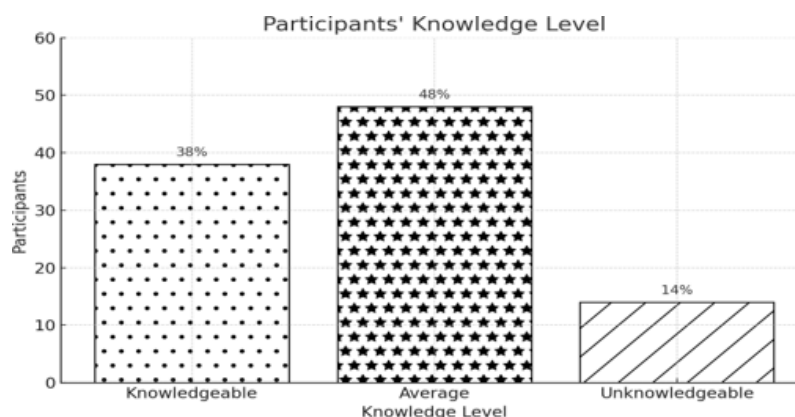


Figure 1. Distribution of lecturers' knowledge of GenAI technology

GenAI-based tools used by respondents were also found in this study. From the results of this study, the most widely used GenAI-based tool was ChatGPT, which was used by 48 respondents. In second place, Grammarly and Google Translate were also widely used tools each used by 43 respondents. Gemini ranked third, used by 39 respondents. Quillbot is also a popular tool that has been used by 38 respondents. Turnitin is also popular and has been used by 35 respondents. Publish or Perish is used by 20 respondents. Other GenAI-based tools are also quite widely used by respondents, including VOSviewer, which is used by 18

lecturers, Google AI, which is used by 17 lecturers, and Semantic Scholar, which is used by 10 lecturers. Other GenAI-based tools such as Perplexity, NVivo, Consensus, SCISummary and Jenni AI were less widely used by respondents, with these tools being used by 1 to 5 lecturers. From these findings, respondents showed their preference for certain GenAI-based technologies. ChatGPT, Grammarly, Google Translate, Gemini, Quillbot, and Turnitin are the most popular GenAI tools. FGD participants expressed their views on these GenAI tools. The ability of these tools to help generate topics and ideas for writing, as well as generalise complex

writing tasks, such as planning, drafting, editing, reviewing, and publishing, are the reasons for using these GenAI tools. In addition, the features of GenAI tools, such as writing error correction, paraphrasing, translation, data synthesis, and similarity testing, which are easy to use and useful, are the reasons respondents use these tools. These findings are in line with

previous studies which state that the most popular AI-based tools are ChatGPT and QuillBot because they provide immediate feedback to users which can simultaneously improve the structure and grammar of users' writing [6], [7], [14]. The distribution of findings on the use of GenAI-based tools by history education lecturers is illustrated in Figure 2.

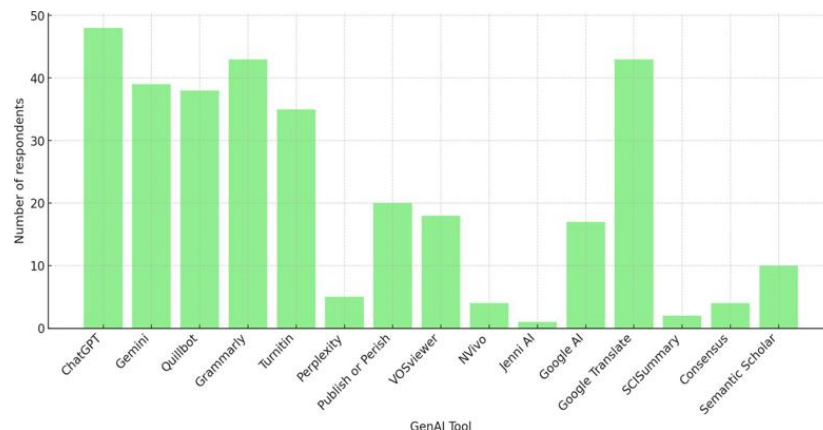


Figure 2. GenAI-based tools adopted by lecturers

In the FGD, participants stated that ChatGPT, Gemini, Grammarly, Quillbot, and Google Translate are often used to improve the quality of content and language in research articles, especially for those who have difficulty using English. Previous studies have shown that academics use ChatGPT, Quillbot, and Grammarly as proofreading tools to correct structural and grammatical errors [12], [16]. Meanwhile, Google Translate is used by many users to translate languages accurately. Turnitin can also be very useful in helping writers test the similarity of their writing, so that writers can be more confident in publishing their work. Conversely, Consensus, SCISummary, and Jenni AI appear to be less popular. Most users stated that they had never used them. From the results of the FGD data integration, many respondents use these popular tools because of their simplicity, effectiveness, efficiency, and usefulness in producing high-quality writing. They revealed that many participants appreciate these tools because of their simplicity and effectiveness in producing high-quality writing, as well as their ability to streamline the writing process, especially in situations that require quick turnaround times. With these fast and effective

results, the process of publishing academic writing can be completed successfully.

3.2. Purpose and Benefits of Adopting GenAI Technology in the Research Writing and Publication

The findings of this study are the result of data analysis related to the second research question obtained from interviews and focus group discussions. From the data obtained, based on thematic analysis, there are five themes related to the objectives of adopting GenAI technology in writing research articles for publication. These themes are (1) Planning ideas and research design; (2) Synthesis and literature review; (3) Data analysis; (4) Content editing and proofreading; (5) Preparation for publication and dissemination of the paper.

Planning research ideas and designs.

Planning, compiling and developing research ideas and designs are important objectives underlying the adoption of GenAI-based technology in the scientific writing and publication process. GenAI technology provides significant support in exploring topics, mapping issues and formulating research questions. These findings are reinforced by statements R2 and R5:

"With the help of GenAI, I can see the latest research trends more quickly, so my research ideas become more colourful." (R2)

"I often use ChatGPT and Gemini. These tools help me organise my research framework more systematically, especially in determining variables and analysis methods." (R5)

The results of this study show that GenAI technology functions as a cognitive partner in the process of exploring research ideas. In addition, most respondents agreed with the statement that GenAI technology can help identify research gaps and systematically develop a research framework. The implication is that research design is no longer constructed entirely by researchers as sole actors, but rather is formed from human work with the help of GenAI technology.

Synthesis and literature review. The use of GenAI-based technology also aims to make it easier for lecturers, writers, and researchers to search for articles, analyse citations, and map literature. This can be useful for improving the quality and effectiveness of the synthesis and literature review process. These findings are supported by statements R6 and R12, which state:

"Whereas before I needed days to read dozens of articles, now with the help of GenAI I can see the map of literature connections in minutes." (R6).

"GenAI tools make it easier for me to find the latest relevant articles, even from journals that are usually difficult to access." (R12).

AI plays an important role in literature mapping, which makes it easier for researchers to compile systematic syntheses. AI has been proven to help overcome information overload through literature mapping and analysis of the connections between articles. This supports information retrieval theory [27], in which AI technology acts as an intelligent search system that expands researchers' reach in accessing

knowledge. The theoretical implication is a redefinition of the knowledge construction process [28]. Previously, literature synthesis was the result of individual cognitive skills, but with the advent of GenAI, this process has become an activity that involves relevant technology, making it easier for researchers to determine the relevance and interconnections between pieces of literature.

Data analysis. With regard to the data analysis process, GenAI technology can be useful for speeding up the process for both qualitative and quantitative data. Respondents (R23 and R31) expressed their views:

"I usually find it difficult to perform manual thematic analysis of interview data, but with the help of AI, the thematic results come out much faster and can be accurate." (R23)

"AI helps me create more interesting and easy-to-understand visualisations of quantitative data, without having to do it manually." (R31)

From these findings, the efficiency, effectiveness and convenience offered by GenAI technology have been felt by Indonesian history lecturers in analysing their research data. AI language models such as ChatGPT can analyse quantitative data. Descriptive, inferential, parametric, regression and correlation analyses can be performed with GPT-4 by uploading CSV data. In addition, this tool also allows visualisation through tables and graphs, which makes academic writing and research easier. On the other hand, NVivo, as a GenAI-based tool, is also very useful in qualitative data analysis to manage, analyse, and find insights in qualitative data. NVivo can also recognise patterns, investigate relationships between themes, and provide qualitative data visualisation for deeper interpretation. This tool allows researchers to categorise, code, and identify themes in textual data, such as interview transcripts or survey responses. From these findings, it can be concluded that GenAI is useful for speeding up the data analysis process, while also improving the accuracy of research results.

Content Editing and Review Process. History lecturers in Indonesia can utilise GenAI technology for editing, reviewing, and proofreading their research articles. The purpose and benefits of using GenAI technology were highlighted by respondents (R9 and R47), who stated:

“GenAI helps me ensure my writing is more academic, especially in terms of grammar and clarity of argument.” (R9)

“I often overlook technical details such as formatting or citations, and GenAI technology reminds me to adjust the format.” (R47)

From the respondents' statements, it can be concluded that Gen AI can ensure that research papers are more academic, and that the structure and grammar of the writing are more accurate. AI-based tools such as ChatGPT, Grammarly, and Quillbot are used for editing and proofreading manuscripts, improving grammar and writing style, which is very helpful for people who are not fluent in English. These artificial intelligence-based tools can help history teachers find writing errors, make manuscripts clearer, concise, and effective in conveying complex scientific concepts. In addition, these AI-based tools can generate summaries and ensure that important findings are documented, which helps writers develop and refine their ideas for further development. Furthermore, GenAI technology can improve the quality of manuscripts before they enter the peer-review stage. GenAI technology has been proven to help improve grammar quality, clarity of argument, and conformity to academic style. From theoretical perspective, this relates to theories that explain writing as a repetitive cognitive process (planning, translating, reviewing) [10]. Incorporating AI-based tools into editing, reviewing, and publishing support helps produce research that meets evolving academic standards.

Preparation for publication and dissemination of papers. In addition to being useful in the process of writing and producing research papers, GenAI technology can also be used for journal selection, format adjustment,

and dissemination strategies. History education lecturers in Indonesia can utilise artificial intelligence tools to search for and determine the appropriate target journal for publication based on the article's field, and to structure the article according to the target journal's template. Respondents (R36 and R20) shared their views on this matter:

“AI provides recommendations for journals that match my topic and even predicts the chances of acceptance. This is very helpful for novice researchers.” (R36)

“I find it helpful because AI can prepare article summaries and even create graphical abstracts, which usually take a lot of time.” (R20)

At the publication stage, GenAI is considered very helpful for novice researchers. R36 explained GenAI's function as a strategic guide in publication because this technology can provide recommendations for journals that are relevant to the research topic. In addition, respondents also said that GenAI can prepare article summaries and even create graphical abstracts, which usually take a lot of time. Artificial intelligence-based journal recommendation systems enable researchers to maximise their publication strategies. However, the FGD discussion also noted that if researchers rely too heavily on AI recommendations, there is a risk that they will choose journals based solely on algorithms, rather than academic quality or field relevance.

3.2. The main challenges faced by history education lecturers in using GenAI technology for the research writing and publication process

The third research question relates to the main challenges faced by history education lecturers in utilising GenAI technology when writing research articles for publication. The data obtained shows that there are four main challenges recognised by history education lecturers. These challenges are related to ethical clarity and academic integrity, uneven digital literacy, concerns about over-reliance on GenAI, and data validity and accuracy.

Clarity of ethics and academic integrity. The most significant challenge faced by lecturers is maintaining academic integrity amid the widespread use of technology. Many lecturers admit to feeling uneasy because works produced with the help of GenAI raise doubts about their originality. Some argue that such works can be categorised as covert plagiarism. One lecturer (R43) said:

"If students use ChatGPT without understanding it, the results could be like covert plagiarism. We as lecturers are also concerned about what if our own writing is considered impure?" (R43).

This statement highlights the ethical dilemma faced by lecturers, both in their roles as authors and as student research supervisors. The lack of clarity regarding ethical standards makes it difficult for lecturers to determine when the use of GenAI is acceptable and when it violates academic principles. Some lecturers even worry that their academic reputation will be damaged if the public finds out that their work was produced with the help of artificial intelligence. This situation emphasises that the issue of ethical clarity is a serious challenge that must be addressed immediately through academic regulations and clear, globally applicable scientific writing guidelines.

Uneven digital literacy. The digital literacy gap between lecturers has proven to be a significant challenge. Younger lecturers generally adapt more quickly to GenAI, while senior lecturers often experience technical difficulties and lack confidence. As a result, the use of this technology is uneven and has led to a gap in research productivity. One lecturer (R37) stated:

"I admit that the younger lecturers are quicker to understand how to use GenAI. For those of us who are used to manual methods, it can sometimes be difficult to keep up. Sometimes we still feel more comfortable using traditional methods" (R37).

This opinion reflects the differing views between generations on the use of new technology. Some senior lecturers admit to being afraid of misusing

GenAI, so they prefer conventional methods. Meanwhile, lecturers who are already familiar with technology feel more advantaged because they can utilise GenAI to speed up the writing process. The lack of formal training from higher education institutions also plays a role in this situation, as lecturers must learn independently with varying levels of quality. This shows that digital literacy remains a fundamental challenge in the utilisation of GenAI in academic environments.

Concerns about over-reliance on GenAI. Although GenAI can speed up the writing process, some lecturers are concerned that this technology may be overused. Over-reliance on GenAI is feared to dull critical thinking skills, both for lecturers and students. One lecturer (R49) emphasised:

"If we become too dependent on AI, our critical thinking skills may eventually become dulled. We will only receive the finished product without going through the process." (R49).

This statement reflects concerns that GenAI could reduce lecturers to the role of editors rather than creators of scientific ideas. In the long term, this could lower the quality of research because the intellectual process that should be inherent to researchers is being replaced by machines. Lecturers are also concerned that students will imitate this habit, relying more on GenAI rather than training their independent analytical skills. This dependence is not merely a technical issue, but a threat to academic quality and the continuity of scientific tradition. Therefore, lecturers feel that clear boundaries are needed in the use of GenAI, so that this technology is only positioned as a tool, not a replacement for writers in the process of scientific writing for publication.

Data validity and accuracy. There are concerns that GenAI often produces data that is not entirely accurate, even false references (hallucinations), which is a serious problem for lecturers. Many respondents admitted to having found journals or citations that do not exist in

the real world. One lecturer (R35) shared their experience:

"I once asked AI to find a journal, but it turned out that some of the references were fictitious. If I hadn't checked, it could have been dangerous for my scientific publication, especially since it was related to history." (R35).

This experience shows that lecturers cannot simply trust the results of GenAI. The output provided is often convincing, but weak in terms of scientific methodology. This situation forces lecturers to carry out manual verification, which actually increases their workload. Furthermore, data bias in GenAI training poses another risk, as the information generated may not be relevant to the research context in Indonesia. Lecturers feel that the validity of research results may be compromised if GenAI is used without critical supervision. Therefore, the issue of validity is one of the biggest challenges in the use of GenAI in academia. Thus, it can be concluded that although GenAI has great potential to support academic productivity, the challenges that arise cannot be ignored. The use of GenAI must be carefully managed through an ethical approach, clear policies, improved digital literacy, and strategies to maintain the originality and scientific creativity of history education lecturers in Indonesia

4. Conclusion

This study demonstrates that history education lecturers in Indonesia are increasingly integrating GenAI technologies into their academic writing and publication processes. The tools most widely adopted, such as ChatGPT, Grammarly, Google Translate, Gemini, and Quillbot, play a vital role

in enhancing efficiency, improving linguistic quality, supporting data analysis, and facilitating publication strategies. These findings suggest that GenAI has become not only a technical aid but also a cognitive partner in scholarly work. However, the research also underscores four persistent challenges: ethical ambiguity surrounding academic integrity, disparities in digital literacy, risks of over-dependence on AI tools, and the problem of data reliability and hallucinated references. Addressing these challenges requires a multi-level strategy. At the institutional level, universities must provide training, clear ethical guidelines, and infrastructure to ensure equitable access. At the policy level, academic associations and journals should establish transparent standards for GenAI use in research writing. Theoretically, the study contributes to debates on human-machine collaboration in knowledge production, showing that GenAI reshapes, rather than replaces, scholarly practices. Practically, it calls for critical, reflective, and balanced adoption of GenAI to preserve originality, sustain intellectual rigor, and enhance the professionalism of history education lecturers. Ultimately, GenAI should be positioned as a supportive partner that strengthens, rather than undermines, the human capacity for critical inquiry and creative scholarship.

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