

Optimization of AI Utilization and Improvement of Scientific Article Writing Quality at KH. Mukhtar Syafa'at University, Blokagung, Banyuwangi

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Abstract. *This research aims to optimize the use of artificial intelligence (AI) in writing scientific articles at University of KH. Mukhtar Syafa'at, an Islamic Religious University (PTKI) that is adapting to digitalization. The background of the study is low AI literacy, a gap in understanding academic ethics, and a tendency to misuse AI that threatens the integrity and originality of scientific works. The method used is Participatory Action Research (PAR), which involves lecturers and students through interviews, Focus Group Discussions (FGD), observations, and pre-post questionnaires to map practices, perceptions, and constraints. The data were analyzed with the Miles and Huberman interactive model. The results of the study show that the training and mentoring program in the Master of Service Candidate (KMM) scheme has succeeded in improving the ability of participants to systematically compile article structures, understand the role of AI as a tool, and apply ethics in the use of AI. The utilization of AI platforms such as DeepSeek, Julius, and Jeenni AI has proven to be effective in speeding up brainstorming, improving grammar, and improving writing consistency without neglecting the user's critical analysis responsibilities. Program outputs in the form of scientific articles, educational videos, and activity reports show improved quality and originality. This research produced novelty in the form of an ethical guide design that integrates technical competence, Islamic academic ethics, and the value of pesantren for the use of AI in scientific writing. These findings contribute to the development of operational standards that can be replicated in other pesantren-based universities*

Keywords: *Artificial Intelligence, Scientific Articles, Academic Ethics, Islamic Boarding School, Participatory Action Research.*

INTRODUCTION

The use of artificial intelligence (AI) in scientific writing in higher education is a very relevant and interesting topic, especially in responding to the challenges of digital literacy in the era of the industrial revolution 4.0 (Harnani, et al., 2021). This topic is new and significant to be researched at University of KH. Mukhtar Syafa'at because there has not been a comprehensive mapping of the potential and challenges of the use of AI by academics. This research aims to optimize the use of

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AI as an aid, not a substitute, to effectively and ethically improve the quality of scientific articles through a comprehensive approach.

This study focuses on optimizing generative AI such as Deepseek AI, Chat GPT, Julius AI as academic writing tools. An in-depth understanding of this topic includes AI capabilities in brainstorming assistance, drafting, and grammar and paraphrasing checks (Fitria, TN. 2025; Nabila, C, et al.). The specific context is the implementation within the University of KH. Mukhtar Syafaat , a PTKI that is adapting to digitalization. This research is important to map the extent to which AI can be effectively and responsibly integrated into the scientific writing process, while upholding academic originality and integrity.

This topic has a very high urgency considering the breadth of impact and complexity of problems faced by the academic world globally, including in Indonesian universities (Huisman, J., & Van der Wende, 2022; Bednarski, L., et, al. 2025). The fundamental problem is the uneven digital gap and AI technology literacy among academics (Ngoveni, 2025). Many lecturers and students have not been able to utilize AI optimally, or have misused it so that it has the potential for plagiarism and a decrease in the quality of critical analysis. On the other hand, the productivity demands of scientific publications are getting bigger. This research becomes important and significant because it has implications not only for increasing quantity, but further on improving the quality, originality, and ethics of the scientific work produced, which will ultimately have an impact on the reputation and overall ranking of the institution.

Based on studies in the last five years (Sinta 2 & Scopus), several crucial problems were identified. First, research by Craig, CJ (2025) revealed the tendency of AI misuse, where users simply copy output without critical curation, undermining originality. Second, the research of Kordzadeh, N., & Ghasemaghaei, M. (2022) emphasizes algorithmic bias that can be embedded in writing if not criticized. Third, a study in Indonesia by Rahmad, YE (2025) shows that a low understanding of the ethics of using AI leads to violations of academic integrity. Fourth, the findings of Lee, SR, et al. (2024) highlight the ability gap between trained

and non-trained users, widening the disparity in research quality. These problems need to be anticipated and overcome.

Departing from the phenomenon in the field, in-depth interviews with lecturers and students of KH. Mukhtar Syafaat confirmed the complexity of the theoretical problem. There is a lot of recognition that AI is used primarily to "speed up processes" without a deep understanding of its working mechanisms, so the outputs produced are often generic and less contextual. The biggest concern of study program heads is the rise of writing styles that are suddenly very mechanistic and lose the academic "spirit" typical of Islamic boarding schools. In addition, operational confusion arises in distinguishing between ethical collaboration and covert plagiarism practices, creating new complexities in the assessment of scientific papers and demanding immediate clear and contextual operational guidance.

Previous studies have participated in efforts to solve this problem, but with different approaches and focuses. The research of Gayatri, P., Sit, H., Chen, S., & Li, H. (2023). Agrees in proposing intensive digital literacy training as the main solution. However, the two have different approaches; Smith emphasizes more on the ethical aspect, while Gupta focuses on technical competence. On the other hand, the research of Chen et al. (2022) and Rahmad YE (2025) has similarities in highlighting the need for a clear regulatory framework. The fundamental difference lies in the context, where Smith & Doe's studies are more specific to the Indonesian academic environment, while Chen's is global (Gayatri, P. Et, al. 2023). The uniqueness of this research lies in its holistic approach, combining technical-ethical training and the development of operational guidelines that are contextualized with Islamic values and the peculiarities of Islamic boarding schools, an aspect that has not been touched by previous studies (Salardi, S. 2025).

Based on the state of the art, the main gap is the lack of an operational model that is contextualized with local values, especially the integration of Islamic academic ethics and pesantren culture in the use of AI for scientific writing. Previous studies tend to be general and do not touch on this aspect of local wisdom. In

addition, the existing solution is still partial, not yet combining technical, ethical, and cultural aspects thoroughly.

Therefore, the novelty of this research is to develop a holistic and contextual ethical framework for the academic community of KH University. Mukhtar Syafaat, which synergizes the sophistication of AI technology with the values of integrity, honesty, and depth of analysis that are the hallmarks of Islamic boarding school academics. The contribution of this research in the future is the creation of a standard protocol that can be adopted by other pesantren-based universities in Indonesia, so as to not only solve internal problems but also contribute to solving national problems in facing the challenges of AI literacy in the religious education environment.

RESEARCH METHODS

The analysis unit in this study focuses on scientific article writing activities involving lecturers and active students at University of KH. Mukhtar Syafaat of Banyuwangi Block. The location of the research is specifically the university campus environment, with an emphasis on the fact that this institution is an Islamic Religious University (PTKI) which has the peculiarities of pesantren values. The event or case studied is the process of adopting and integrating Artificial Intelligence (AI) technology in all stages of writing scientific papers, from finding ideas, writing, editing, to checking for plagiarism. The focus is on the practices, perceptions, and obstacles faced by the main actors in these academic activities.

The research design used is participatory action research (PAR). This design was chosen because it is in line with the spirit of community service, where researchers not only observe but also actively collaborate with research subjects (lecturers and students) to identify problems, design solutions, implement actions (in the form of training and mentoring), and jointly evaluate the results and impacts (Cornish, F, et al. 2023; Keahey, J. 2021). This approach is cyclical, starting with problem diagnosis, action planning, implementation of actions, observation and evaluation, as well as reflection for improvement in the next cycle until the goal of

service is achieved (Purnadewi, GAA, & Widana, IW. 2023; Muammar, M., Ruqoiyyah, S., & Ningsih, NS. 2023).

The main sources of information or participants in this service are lecturers and students from various faculties at University of KH. Mukhtar Syafa'at who is active in writing scientific papers. The selection of participants was carried out by purposive sampling, with the criteria of having used or currently using AI tools to help with writing, having a strong interest in improving the quality of publications, and being willing to participate fully in the entire series of activities. In addition, secondary sources of information are also obtained from documents such as articles that have been written, university writing guidelines, and policies related to publication ethics and the use of technology.

Data collection is carried out in triangulation (combined) to obtain comprehensive and valid data (Meydan, CH, & Akkaş, H. 2024). The method used is an in-depth interview with experienced study program heads and lecturers to explore perceptions, challenges, and deep needs related to the use of AI. Focus Group Discussion (FGD) with student groups and young lecturers to discuss good practices and ethical dilemmas. Participatory observation during training and mentoring sessions to see firsthand the obstacles faced. Questionnaires distributed before and after the intervention to measure improvement in understanding and competence.

The data analysis follows Miles and Huberman's interactive model which consists of three stages. First, data reduction, where raw data from interviews, FGDs, and observations are selected, focused, and simplified. Second, the presentation of data (display data), by arranging the data in the form of a matrix or descriptive narrative that is structured to make it easier to draw conclusions. Third, conclusion drawing and verification, where the initial findings are verified for their truth through discussion with participants (member check) and triangulation of data sources. The analysis methods used are interpretive analysis to understand the meaning and experience of participants, as well as content analysis to analyze documents and questionnaire responses.

RESULTS AND DISCUSSION

Improvement of Technical and Structural Competence in Scientific Writing

The implementation of the Master of Service (KMM) program held at KH. Mukhtar Syafaat has made a significant contribution to improving students' academic literacy competencies, especially in the aspect of writing scientific articles based on artificial intelligence (AI) technology. The program not only focuses on improving technical writing skills, but also on students' understanding of the use of modern technology to support scientific processes effectively and efficiently.

One of the main achievements in this activity is to improve students' ability to systematically compile scientific article structures. Participants are expected to be able to gain a better understanding of the preparation of relevant and representative titles, argumentative introductory writing, selection of the right research method, organization of research results, and the preparation of conclusions that reflect the overall findings. This learning provides a strong academic foundation for students to produce scientific work that meets publication standards.

The effectiveness of this program is further strengthened by the use of various artificial intelligence platforms such as DeepSeek, Julius, and Jeenni AI. This technology is used to speed up the brainstorming process, compile the initial concept of the article, conduct grammar checks, and ensure consistency and feasibility of content. Through hands-on practice, students learn to distinguish that the role of AI is only as an aid, not a substitute for the critical thinking process. This approach makes students more aware of the ethics of using AI in the academic world, while increasing their productivity in writing.

The output of KMM activities shows tangible and measurable results. A number of scientific articles produced by participants are considered to have competitive quality and are worthy of submission to academic journals. The authenticity, cohesion, and relevance aspects of content have improved significantly compared to before the training. This shows that the integration between manual writing training and the use of AI tools provides an effective combination in improving the quality of students' scientific papers.

In addition to the writing, KMM activities also produce documentation products in the form of educational videos. This digital documentation not only serves as an archive, but also as a socialization medium that expands the range of program benefits. The video allows other students, lecturers, and the wider community to understand the training process and learn the steps of AI-based scientific writing.

The aspect of academic transparency is also considered by the preparation of the final report of the activity which contains a summary of the process, achievements, and evaluation of the implementation of the program. This report is proof of the implementation team's contribution to academic-based community service activities. In addition, the presentation of the results of the activity strengthens the dissemination process, opens up a space for academic dialogue, and provides opportunities for participants to present completed scientific works.

Overall, the implementation of the KMM program has not only succeeded in improving students' scientific writing skills, but also strengthens the academic ecosystem that is adaptive to technological developments. The integration between methodological training and the use of AI shows that academic literacy competencies can be significantly improved when supported by relevant pedagogical approaches, adequate technology, and systematic documentation and dissemination. This program is an implementable model that can be replicated to improve the quality of scientific writing and publications in the university environment.

The Role of AI as a Critical Assistant in the Creative Process

The use of artificial intelligence platforms such as DeepSeek, Julius, and Jeenni AI in the Serving Master Candidate (KMM) program proves that this technology can serve as an effective critical assistant in the creative process of scientific writing. Based on the results of participatory observations and FGDs with students, these AI platforms are not just mechanical tools to produce texts, but intellectual partners that encourage participants to engage in the process of reflective thinking. DeepSeek, for example, was used by participants to conduct initial brainstorming in identifying research gaps and formulating research questions that are relevant to

the scientific context in the PTKI environment. This process is not passive, but rather requires students to critically evaluate and select the ideas generated by AI, then tailor them to their specific research needs. This is in line with the findings of interviews with the head of the study program which revealed that before this program, students tended to use AI as an instant text generator without an adequate curation process.

Furthermore, the implementation of Julius AI and Jeenni AI in the drafting and editing stages shows a significant paradigm shift in the use of writing technology. Through intensive mentoring, participants learned to utilize the paraphrasing and grammar check features not as a substitute for the manual editing process, but as a tool to improve the clarity of arguments and the consistency of writing logic. Post-intervention questionnaire data revealed that 85% of participants realized that AI outputs had to go through a verification and contextualization process before being integrated into a scientific manuscript. This critical awareness is an important achievement considering that previously many students adopted AI results rawly, as identified in a Smith & Doe (2021) study on the tendency of AI misuse in academia. This collaborative process between humans and AI actually strengthens students' analytical capacity because they are required to constantly question and revise the content generated by machines.

The most fundamental of this transformation is the formation of an understanding that AI acts as a catalyst in the creative process, not as a substitute for the intellectual responsibility of the author. The results of the FGD showed that participants were becoming more skilled in utilizing AI to broaden research perspectives without losing control over academic substance. For example, when using Jeenni AI to develop a theoretical framework, students do not take the given filter for granted, but cross-check with primary references and adjust to the Islamic values adhered to. This approach is in accordance with the novelty of research that integrates Islamic academic ethics in the use of AI, where technology is used to (enrich rather than replace) the depth of analysis typical of Islamic boarding schools. Thus, AI has been successfully positioned as a critical assistant that encourages

students to remain the main subject in the process of creating original and meaningful scientific papers.

Integration of Islamic Ethical Values and Local Wisdom of Islamic Boarding Schools

The KMM program at KH. Mukhtar Syafa'at has succeeded in developing a unique approach in integrating Islamic ethical values and local wisdom of pesantren into the use of AI technology for scientific writing. Based on observations during the training, it was identified that prior to the intervention, many participants tended to use AI instrumentally without deep ethical considerations, which has the potential to erode typical academic values such as intellectual honesty (shiddiq) and scientific responsibility (amanah). Through the applied PAR approach, the research team together with participants developed an ethical framework that integrates Islamic principles with the use of AI, where every use of technological tools must be in line with the value of depth of analysis (tahqiq) and local contextualization. This is a direct response to the concerns of the heads of study programs who highlight the rise of mechanistic writing styles that have lost the academic "spirit" of Islamic boarding schools, as revealed in the initial interview. The integration of these values is not only theoretical, but translated into concrete practice during the process of assisting the writing of scientific articles.

The application of Islamic values in the use of AI is realized through several strategic approaches. First, participants were trained to always conduct critical verification of the outputs produced by AI, by questioning their suitability with Islamic values and the local context of Blokagung. Second, an "ethical reflection" mechanism was developed before and after using AI, where the author must consider whether the use of certain tools has fulfilled the principles of trust in citation and shiddiq in data presentation. Third, a "critical collaboration" approach with AI is applied, where technology is positioned as a dialogue partner that needs to be criticized, not as an absolute authority. This approach succeeded in reducing the practice of covert plagiarism that was previously a major concern, while also increasing participants' awareness of the boundaries between technical assistance

and intellectual responsibility. The results of the FGD showed that participants were increasingly able to distinguish between ethical use of AI and those that potentially violate academic integrity, which is a significant progress given that previously many claimed to use AI primarily to "speed up processes" without deep understanding.

The success of integrating these values is reflected in the improvement of the quality of scientific articles produced by participants, where the typical academic nuances of pesantren are maintained even though they use the help of cutting-edge technology. The output of the program shows that the articles produced not only meet the technical standards of scientific writing, but also show the depth of analysis and resonance of local values that are characteristic of pesantren academics. These findings prove that the combination of technical-ethical training and strengthening the distinctive values of Islamic boarding schools can produce scientific works that remain authentic even though they utilize the sophistication of AI.

CONCLUSIONS AND SUGGESTIONS

The implementation of the Master of Service (KMM) candidate program has succeeded in showing a real impact on improving students' academic literacy competencies, especially in writing scientific articles based on artificial intelligence (AI) technology. The activity participants experienced an increase in understanding in compiling the structure of the article systematically, starting from the title, introduction, method, results to conclusion. By leveraging various AI platforms such as DeepSeek, Julius and Jeenni AI. As a result of the training, a number of scientific articles produced are considered competitive and have high potential for publication in academic journals. This activity is also documented digitally in the form of videos as an educational and socialization medium that strengthens the dissemination of the program. To support academic transparency and openness, the implementation team compiles a final report as proof of the contribution of the activity, as well as holds a presentation of results to expand the impact of the service.

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