Academic Ethics in the Flow of Digitalization: Maintaining Scientific Integrity in the Age of Technology

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Abstract
A person's manners in the current era are influenced by digital influences. The digital era has brought significant changes in the academic world. Including in terms of research ethics. Plagiarism and violations of research integrity are becoming increasingly challenging. This research aims to critically analyze the challenges of academic ethics in the digital age and provide recommendations to improve research integrity. The purpose of this research is to find out the picture of ethics by an academic in the current era. The research methods used are literature analysis and case studies. The results of the study show that awareness of academic ethics needs to be improved, especially in the use of digital technology. This research is expected to contribute to the understanding of academic ethics in the digital age and raise awareness of the importance of research integrity. An academic must implement improvements in digital technology as well as increased awareness of the importance of research integrity

I. INTRODUCTION

The flow of digitalization has become an inseparable transformational force of the modern academic world (Tahir et al., 2025). The development of information and communication technology presents extraordinary ease in accessing knowledge sources, accelerating the research process, and expanding the space for scientific collaboration across disciplines and geographical boundaries (Supuwiningsih et al., 2025). In this context, digital technology plays a strategic role as a strategic instrument that is able to increase the productivity and efficiency of academic activities, while opening up innovation opportunities that were previously difficult to realize. However, behind these benefits, digitalization also carries complex and often problematic ethical consequences.

The ease of access to digital information, especially through the internet and various online databases, paradoxically increases the potential for academic ethics violations. The practice of plagiarism has become increasingly easy to do, both intentionally and unintentionally, due to the copy-paste culture that is developing in the digital ecosystem (Pratiwi & Aisya, 2021). Furthermore, the manipulation of research data, fabrication of results, and the misuse of artificial intelligence in writing scientific papers without proper recognition shows that the challenge of academic ethics is no longer classic, but has transformed following technological dynamics (Tobari, 2024). This phenomenon signals a shift in values, where speed and results often take precedence over process, honesty, and scientific responsibility (Hutapea et al., 2025).

In this framework, academic ethics cannot be understood solely as a static set of normative rules, but rather as a moral principle that must be constantly recontextualized. Academic ethics encompasses fundamental values such as intellectual honesty, objectivity, transparency, and accountability, which are the main foundations of scientific integrity (Maulida, 2025). In the digital age, the application of these values faces serious challenges because technology not only facilitates legitimate academic activities, but also provides space for unethical practices that are often difficult to detect by conventional oversight mechanisms.

This situation shows that the issue of academic ethics in the digital era is not just an individual

problem, but a systemic problem related to academic culture, institutional policies, and the readiness of the academic community in responding to technological changes (Shawn, 2024). Without a strong ethical awareness, digitalization has the potential to reduce the meaning of science to mere production of academic output, rather than the process of seeking scientific truth. Therefore, maintaining scientific integrity in the midst of digitalization is a fundamental challenge that demands serious attention from all stakeholders in the world of higher education.

Based on this reality, the study of academic ethics in the flow of digitalization is very relevant and urgent. This research seeks to critically analyze the various ethical challenges that arise as a result of the development of digital technology, as well as examine how the values of scientific integrity can be maintained and strengthened in the contemporary academic context. In addition, this research also aims to formulate conceptual and practical recommendations that can be used as references in an effort to improve research integrity and minimize violations of academic ethics in the technological era.

Thus, this research is expected not only to make a theoretical contribution to the development of academic ethical discourse, but also to have practical significance for strengthening an academic culture with integrity. In the midst of the rapid flow of digitalization, maintaining academic ethics is not an effort to reject technological advances, but an effort to ensure that these advances are still based on scientific values that uphold honesty, responsibility, and scientific dignity.

II. RESEARCH METHODS

This research uses a qualitative approach with an orientation to an in-depth understanding of the phenomenon of academic ethics in the context of the digital era. The qualitative approach was chosen because the characteristics of the problems studied cannot be adequately explained through quantitative measurement alone, but require tracing of the meanings, patterns, and normative dynamics that develop in academic practice (Rukhmana et al., 2022). The main focus of this research is to examine how changes in digital technology affect academic behavior as well as the ethical challenges that arise within it, particularly those related to scientific integrity.

The data collection method is carried out through literature studies by examining various relevant written sources, such as scientific journal articles, academic books, research reports, and policy documents that discuss academic ethics, research integrity, and the impact of digitalization in the world of education and research. The selection of literature sources is carried out selectively by considering the relevance of the substance, academic credibility, and actuality of the discussion, so that the analyzed data has a strong scientific weight and is representative of the issue being studied.

The data that has been collected is then analyzed using thematic analysis methods. Thematic analysis is used to identify, classify, and interpret the main themes that emerge from the literature related to academic ethics in the digital age. Through the process of in-depth reading and systematic data encoding, this study explores conceptual patterns regarding the form of academic ethical violations, their causative factors, and the normative and institutional responses that develop in facing these challenges. This approach allows researchers to not only map problems, but also comprehensively understand the relationships between themes.

III. RESULTS AND DISCUSSION

A. Challenges of Academic Ethics in the Digitalization Flow of the World of Education and Research

The development of digital technology has brought fundamental changes in the way the academic world operates. Digitalization is not only changing learning and research methods, but also reshaping the relationship between knowledge, ethics, and scientific responsibility. The results of this study show that the challenges of academic ethics in the digital era are complex, multidimensional, and interrelated, so they cannot be partially understood. Plagiarism, data manipulation, and low awareness of academic

ethics emerged as major problems that reflect the tension between technological advances and the values of scientific integrity (Hafizd et al., 2025).

Plagiarism is becoming an increasingly significant challenge along with the ease of access to digital information. Technology allows academics and students to quickly access a wide range of scientific sources, while at the same time making it easier to practice taking the work of others without adequate attribution. In this context, plagiarism is not always done consciously as a form of ethical violation, but it also often arises as a result of a weak understanding of the limits of the legitimate use of digital resources. The instant culture that thrives in the digital age has exacerbated this situation, where the demands of academic productivity often trump methodological prudence and intellectual honesty (Nisa et al., 2025).

In addition to plagiarism, the manipulation of research data is also a serious issue that is increasingly relevant in the technological era. Data analysis software and the sophistication of information processing technology, while very helpful in the research process, on the other hand open up opportunities for unethical data fabrication, falsification, or selection (Falinda et al., 2025). The results of this study show that technological advances have blurred the line between methodological errors and ethical violations, thus demanding higher standards of integrity in the management of scientific data. Data manipulation not only undermines the validity of research results, but also hurts public trust in the academic world as a whole.

The challenges of academic ethics in the digital era are also exacerbated by the low ethical awareness among some academics and students. Digitalization is often understood solely as a technical issue, rather than as a phenomenon with moral and normative implications (Suriadi & Sriwahyuni, 2025). In the distance education system (PJJ), for example, the flexibility of time and place of study does increase the accessibility and inclusivity of education, as stated by Widyastuti (2021), but on the other hand it creates new space for violations of academic ethics. The lack of direct interaction, weak supervision, and differences in digital literacy between students and educators are factors that increase the risk of ethical deviations.

Education in the digital age, often described as "The World is My Class", suggests that the learning process is no longer limited to formal classrooms (Destari, 2023). The digital world provides almost unlimited learning resources and drives the transformation of the way humans learn, teach, and produce knowledge. However, this transformation also demands the reconstruction of academic ethics to remain relevant in the context of evolving technology. Without a strong ethical framework, digitalization has the potential to shift the orientation of education from the formation of scientific character to the achievement of pragmatic academic results (Destari, 2023).

B. Strategies for Maintaining Scientific Integrity through Ethics Education and the Utilization of Digital Technology

The results of this study confirm that maintaining scientific integrity in the technological era cannot be done with a single approach, but requires a comprehensive strategy that integrates ethical education and the responsible use of technology. Academic ethics education emerged as a key element in building the moral awareness of academics and researchers on the importance of scientific honesty, responsibility, and accountability (Karima et al., 2025). Ethical education serves not only as a normative knowledge transfer, but also as a process of internalizing values that shape academic character in the long run.

In the context of digitalization, academic ethics education needs to be designed adaptively and contextually. The ethical challenges faced in the technological era are significantly different from the challenges of academic ethics in the previous era (Fauzi et al., 2025). Therefore, the ethics education curriculum must include contemporary issues such as digital plagiarism, ethics of using artificial intelligence, management of research data, and academic responsibilities in virtual spaces. With this approach, academics and students not only understand what is and is not

allowed, but are also able to reflect on the ethical implications of every academic decision taken.

On the other hand, digital technology is not solely a source of problems, but can also be leveraged as part of solutions to maintain scientific integrity (Abas, 2025). The results of the study show that the use of plagiarism detection technology, reference management systems, and research data audit tools can help prevent and detect academic ethics violations. However, the effectiveness of this technology depends heavily on the ethical commitment of its users. Without a strong moral awareness, technology can be used to disguise ethical violations in a more sophisticated way.

The implementation of distance education (PJJ) and digital-based learning also has ethical implications that need to be managed seriously. PJJ offers significant flexibility, accessibility, and personalization of learning, but at the same time presents challenges in terms of supervision, evaluation, and academic character building (Malay et al., 2024). Barriers such as inequality of access to technology, coordination difficulties in collaborative learning, and interpersonal conflicts in online teamwork show that academic integrity does not only depend on the individual, but also on the design of the learning system itself. Therefore, strengthening scientific integrity must be accompanied by the development of institutional policies that are fair, transparent, and responsive to digital reality.

Ultimately, maintaining academic ethics in the flow of digitalization is a collective responsibility that involves academics, researchers, educational institutions, and policymakers. Scientific integrity cannot be enforced only through sanctions or technical supervision, but must be built through an academic culture that values honesty, scientific process, and scientific values. By integrating strong ethical education and responsible use of technology, the academic world can ensure that technological progress remains in line with the main goals of education and research, which is the search for scientific truth and devotion to humanity.

IV. CONCLUSION AND SUGGESTIONS

A. Conclusion

This research shows that academic ethics in the digital era faces increasingly complex challenges along with the rapid development of technology. Digitalization has provided ease of access to information, learning processes, and research activities, but at the same time has opened up space for various violations of academic ethics, such as plagiarism, data manipulation, and low awareness of scientific integrity. The findings of the study confirm that the problem of academic ethics does not solely originate from the technological aspect, but is also closely related to academic culture, the education system, and the weak internalization of ethical values among academics and researchers.

This research also shows that technology is ambivalent, on the one hand has the potential to magnify ethical violations, but on the other hand it can be used as an instrument to maintain scientific integrity through plagiarism detection systems, data management, and academic supervision. Therefore, maintaining academic ethics in the digital age requires a comprehensive approach that integrates ethical education, institutional policies, and the responsible use of technology. Thus, strengthening scientific integrity is the main prerequisite to ensure that technological progress remains in line with the noble goals of education and research, namely the search for scientific truth and the development of ethical science.

B. Suggestion

Based on the results of the research, it is recommended that educational and research institutions strengthen academic ethics education that is contextual with the development of digital technology. The ethics curriculum needs to be designed adaptively by incorporating contemporary issues such as digital plagiarism, the ethics of using artificial intelligence, and the integrity of research data management. In addition, the use of supporting technology, such as plagiarism detection systems and academic supervision, needs to be optimized in a balanced manner with the development of academic moral awareness. Collaboration between academics,

institutions, and policymakers is also essential to build an academic culture that upholds scientific integrity in the digital age.

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