

THE ADAPTATION OF ARTIFICIAL INTELLIGENCE (AI) IN SOCIAL SCIENCE EDUCATION: OPPORTUNITIES AND THREATS

Muhammad Rafi Darajati¹
Rianti Ardana Reswari²
Oktavani Yenny³

¹Faculty of Law, Tanjungpura University, Indonesia.
E-mail: rafidarajati@untan.ac.id

²Faculty of Economy, Panca Bhakti University, Indonesia.
E-mail:
riantiardana@upb.ac.id

³Faculty of Law, Tanjungpura University, Indonesia.
E-mail: oktavani.yenny@gmail.com

ABSTRACT

AI offers convenience to human life. The trend of using AI-based scientific work has caused polemics for educational institutions because it has the potential to increase cheating, injustice, plagiarism and even reduce analytical skills which have an impact on academic integrity. Meanwhile, the main value in learning in higher education is instilling academic integrity to form ethical principles, values and manners in students. students in a social environment. The research method used is empirical juridical by conducting research on applicable legal provisions and implemented in practice, in this case the research was carried out on the provisions governing Artificial Intelligence (AI) and its application in the world of education. This qualitative research uses secondary data to study the adaptation of AI use in higher education, especially in the social sciences and humanities fields. The development of guidelines and regulations in the implementation of AI can minimize ethical issues in higher education. The results of this research show that the application of AI in the world of education needs to be regulated in a regulation so that its application does not overlap and remains in line with the aim of making education easier.

Keywords: Artificial Intelligence, higher Education, regulation.

INTRODUCTION

Global advances in computer science have brought new breakthroughs in the world of education. The use of smart

technology such as cloud computing, machine learning, big data and artificial intelligence can support the learning process to increase access to information

and increase knowledge for students and educators¹. Technological developments including artificial intelligence (AI) are revolutionizing human life in various aspects². Disruption of artificial intelligence technology raises pros and cons in the world of education. The widespread use of generative AI such as ChatGPT, Bing and other software has raised concerns in the education sector. Various academic responses regarding the use of generative AI assess that this technology can act as a virtual assistant that helps with work, increasing the efficiency and effectiveness of services at universities. However, the use of generative AI also has the potential to trigger academic ethical issues that are manipulative, misinformation, disinformation and copyright violations or

plagiarism which can reduce students' academic integrity.³

This cannot be separated from the fact that all aspects of human life have been accompanied by technology, one of which is in the field of education. National Education suggests that learning is a process of interaction between students and educators and learning resources that take place in the learning environment. Learning is seen nationally as a key component of the learning environment and interaction process that includes students, educators, and learning resources.⁴

Therefore, the learning process is a system, a single component that interacts and communicates with each other to achieve the expected results optimally in accordance with the goals that have been set.

However, the definition of education, which was previously defined as conventional learning carried out face-to-face between students and teachers, is

¹ Zhai, X., Chu, X., Chai, C. S., Jong, M. S. Y., Istenic, A., Spector, M., Liu, J. B., Yuan, J., & Li, Y. (2021). A Review of Artificial Intelligence (AI) in Education from 2010 to 2020. In *Complexity* (Vol. 2021). Hindawi Limited. <https://doi.org/10.1155/2021/8812542>

² Lindgren, S., & Holmström, J. (2020). A SOCIAL SCIENCE PERSPECTIVE ON ARTIFICIAL INTELLIGENCE: BUILDING BLOCKS FOR A RESEARCH AGENDA. *Journal of Digital Research*, 2(3), 1–15.

³ Chan, C. K. Y. (2023). A comprehensive AI policy education framework for university teaching and learning. *International Journal of Educational Technology in Higher Education*, 20(1). <https://doi.org/10.1186/s41239-023-00408-3>.

⁴ Benni Setiawan. (2008). National Education Agenda. Ar-Russ Media. Pg.159

now slowly changing to digital-based learning. With the adoption of technology and the increasingly rapid development of technology in the world of education, more and more sophisticated technology can support the learning process in the digital era. One popular technique is artificial intelligence or Artificial Intelligence (AI).

Artificial intelligence technology or what we know as Artificial Intelligence (AI) is part of the Industrial Revolution 4.0 which focuses on production and then in its development in the Industrial Revolution Society 5.0 focuses on placing humans at the center of innovation by utilizing the results and impacts of Industrial 4.0 technology⁵. The science used to build intelligence using hardware and software solutions inspired by the reverse engineering of the patterns of neurons acting in the human brain. Industry 4.0 products are widely used in various industries, including education, for their development and daily life applications which basically bring

implementations which are developments from AI itself.⁶

The application of new technology and new programs naturally has positive and negative impacts on human life. Likewise, the application of artificial intelligence in the world of education basically has positive and negative impacts. The positive impact of AI implementation in the education sector, namely:⁷ Makes the tasks of teachers and students easier in teaching and learning activities, Unlimited data storage means that educators' tasks are not repetitive, can be used at any time without time limits and work becomes faster and better.

But besides that, the application of AI in the world of education is also like a knife edge that can have a negative impact. Some of the negative impacts that arise are:⁸ Makes teachers and students lazier, Eliminates some of the work of educators, especially in the administrative field, AI cannot understand the purpose and information created, AI works according to what has been programmed, AI has a high risk of being hacked, AI will definitely be damaged one day, and the

⁵ MH Coal. 2020. Independent Campus: Examining Technology Readiness in the Campus System. In Cendana, & Fitriyani, Application of Artificial Intelligence Technology in the Teaching and Learning Process in the Era of Industry 4.0 and Society 5.0. Banda Aceh: Syiah Kuala University Press.

⁶ Butler J. & Adam. 2019. The Fourth Industrial Revolution and Education. South African Journal of, 114.

⁷ Opcit, Batubara, Hal. 50

⁸ Ibid.

most bad influence is the increase in "plagiarism".

In Article 1 paragraph 1 of the Minister of National Education Regulation No. 17 of 2010 concerning the prevention and handling of plagiarism in higher education states that "Plagiarism is an act intentionally or unintentionally in obtaining or trying to obtain credit or marks for a scientific work, by quoting part or all of another person's work and/or scientific work, without stating the source precisely and adequately.

Plagiarism is one of the dangerous actions in the mental formation of a student. Without realizing it, the ease in AI-based education opens up a huge space for plagiarism.

Indeed, monitoring of current online learning environments suggests programs that allow instructors to perform a variety of administration-related responsibilities, including providing assessments as well as double-checking student assignments that involve plagiarism. However, Artificial Intelligence has increased the efficiency in carrying out various administrative tasks that would have taken instructors a long time to complete without AI, so that steps to change some

writing structures are less likely to be detected as plagiarism.

It should be noted that there is quite a bit of duplicate data, therefore IT-based media or Artificial Intelligence does not fully guarantee students' good habits in adapting to technology. The need for fundamental values and character education to accompany the progress of the education system. This cannot be separated from the nature of learning itself, which is a process that regulates and organizes the environment around students so that it can grow and motivate students to carry out the learning process.

For this reason, this research tries to clarify legal arrangements regarding the implementation of AI in the world of education by looking at the educational conditions and culture of students in the world of higher education. There has been no previous research related to the points the author discusses, especially regarding the legal regulation of AI. There is previous research by Nur Aziza and Syahri Rahmadhanti in 2022 which examines the application of AI in supporting learning in the digital era.⁹

⁹ Nur Aziza Ismawati and Syahri Ramadhanti, 2022, Application of Artificial Intelligence in Supporting Learning in the Digital Age, Proceedings of the Batch 1 National

Apart from that, research conducted by H. Muchsin Al-Fikri in 2021 discusses the opportunities and challenges of higher education institutions facing the digital revolution in the era of Society 5.0¹⁰ and Anthon Freddy Susanto et al in 2022 which discuss legal education in the digitalization era¹¹. There are journals that discuss AI in the world of education, such as research written by Sofi Liza et al¹² which explains aims to clarify how big a role AI plays in the world of education. More specifically, there has been no scientific research that examines the impact of plagiarism in the world of education which will have a negative impact on students' mental learning.

Seminar, E-Issn = 2962-0074, Serang, 17 May 2022, <https://prosiding.amalinsani.org/index.php/semnas>. Pg, 159.

¹⁰ H. Muchsin Al-Fikri, 2021, Opportunities and Challenges for Higher Education Facing the Digital Revolution in the Era of Society 5.0, National Education Seminar, Fkip Unma August 2021, Page. 350.

¹¹ Anthon Freddy Susanto, Rosa Tedjabuwana, Hesti Septianita, and Mohammad Alvi Pratama, 2022, Legal Education in the Era of Digitalization, Litigation Journal (E-Journal), Vol. 23 (2) October, 2022, P.234-252, <http://dx.doi.org/10.23969/litigasi.v23i2.6216>.

¹² Sofi Liza Zahara, Zahira Ula Azkia, and Muhammad Minan Chusni, 2023, Implementation of Artificial Intelligence (Ai) Technology in the Education Sector, Jpsp: Journal of Science and Education Research, Jpsp Volume 3 Number 1 2023, Page. 16

This research tries to answer how to handle the adoption of AI in the world of education by discussing further the legal regulation of AI in the world of education.

METHOD

The research method used is empirical juridical by conducting research on applicable legal provisions and implemented in practice, in this case the research was carried out on the provisions governing Artificial Intelligence (AI) and its application in the world of education. The approach taken is qualitative, according to Sukmadinata, namely research aimed at describing and analyzing phenomena, events, social activities, attitudes, beliefs, perceptions, thoughts of people individually and in groups¹³. Descriptive research using primary, secondary, and tertiary materials.

RESULTS AND ANALYSIS

1. Opportunities and Threats of AI in Higher Education

The integration of AI in the learning process has the potential to help digitize education.

¹³ Enni Soerjati Priowirjanto, 2022, Urgency of Regulation Regarding Artificial Intelligence in the Online Business Sector During the Covid-19 Pandemic in Indonesia, Bina Mulia Hukum Journal, Volume 6, Number 2, March 2022, P-ISSN: 2528-7273, E-ISSN: 2540-9034, Pg.257

Collaboration between AI on learning materials in the education curriculum can create competitive advantages for students that are relevant to modern market needs¹⁴.

AI can optimize learning such as supporting personalized learning for students. AI is a digital assistant that can provide and evaluate learning materials¹⁵. However, the results of generative AI work can contain bias, so verification of information is still required before use.

Although AI is considered to have high potential in supporting the learning process in higher education there are still weaknesses in AI adaptation, namely the quality of learning outcomes as generative AI can automate the writing process which is considered to reduce

students' critical thinking, creativity, and innovation.¹⁶

2. Ideal Legal Framework in AI Settings in Education

In the world of education, plagiarism is closely related to the integrity of the academic community. The sharpness of a student's thinking is gradually honed to become a graduate who is highly moral, honest, independent, knowledgeable, and full of self-confidence. During their education, every student experiences a process of intellectual and psychological transformation, after completion they become wiser, cleverer, and more intelligent so that they can become the nation's successors who advance the country.¹⁷ This hope then faded with the many angry acts of plagiarism committed by students.

¹⁴ Kuleto, V., Ilić, M., Dumangiu, M., Ranković, M., Martins, O. M. D., Păun, D., & Mihoreanu, L. (2021). Exploring opportunities and challenges of artificial intelligence and machine learning in higher education institutions. *Sustainability (Switzerland)*, 13(18). <https://doi.org/10.3390/su131810424>.

¹⁵ Rukmayuninda Ririh, K., Laili, N., Wicaksono, A., & Tsurayya, S. (2020). STUDI KOMPARASI DAN ANALISIS SWOT PADA IMPLEMENTASI KECERDASAN BUATAN (ARTIFICIAL INTELLIGENCE) DI INDONESIA. In *Jurnal Teknik Industri* (Vol. 15, Issue 2).

¹⁶ Crompton, H., & Song, D. (2021). The Potential of Artificial Intelligence in Higher Education. *Revista Virtual Universidad Católica Del Norte*, 62, 1–4. <https://doi.org/10.35575/rvucn.n62a1>

¹⁷ Adik Wibowo, 2012, Preventing and Overcoming Plagiarism in the World of Education, *National Public Health Journal* Vol.6 Number 5, April 2012. Pg.196

Plagiarism is an act of stealing the original author's work so that critical thinking patterns are not well honed and over time it becomes a habit. The behavior of plagiarizing other people's work without including the source and name of the original author is bad for the development of science because by quoting new ideas will not emerge. Whereas a student is required to have skills in reasoning, making conclusions from other people's writings, and then rearranging according to the contents of his writings. If the awareness to do this is not formed by a student, then the impact of plagiarism will continue to be a scourge that occurs within students. Moreover, this is also closely related to the wisdom of students in using the technological developments of Era Society 5.0.

The concept of society 5.0 allows students to use science and technology based on AI, Robots, Internet of Things as a resolution from Industry 4.0 which was inaugurated in 2019. Unlike Industry 4.0, the Society concept focuses more on humans as the main component in the use of modern

technology. The concept is made to improve the previous one. Humans in this era can create new values through technological developments, one of which is to minimize social, economic, and educational inequalities.¹⁸

The development of education always goes hand in hand with the scientific paradigm, for example liberal education develops when the positivism paradigm strengthens. Critical education grew when postmodernism emerged which tried to reject the positivism/liberal paradigm. Critical education answers the challenges of educational rationalization which has eliminated (local) wisdom values in education¹⁹. Critical education makes efforts to expand rationality, as Henry Giroux said, critical education is a nexus between thought and action that opens the way for human liberation and emancipation, thus giving

¹⁸ Binus University, "Knowing More About Society 5.0", <<https://onlinelearning.binus.ac.id/2021/04/19/mengenal-further-about-society-5-0/>> [accessed 5/07 /2022].

¹⁹ Anthon F. Susanto et al. (2020). Legal Education and Local Wisdom towards the Mind Paradigm. Logoz.

transcendental value to rationality where individual freedom is always associated with social freedom.²⁰

Education that has collaborated with digital platforms is the main choice so there is a tendency to depend on it. In such a position, law is needed to regulate the implementation of AI in the world of higher education so that it does not go beyond its limits as a tool to facilitate learning. In 2010, the Directorate General of Higher Education issued regulations on how to prevent and deal with plagiarism, including sanctions for lecturers, students, and even prospective professors.

Sanctions and penalties for plagiarists have been announced through the Regulation of the Ministry of Education and Culture of the Republic of Indonesia Number 17 of 2010 concerning Prevention and Management of Plagiarism in Higher Education. In Chapter IV, Article 7 states that "every scientific work produced in a tertiary institution must be attached

with a statement signed by the compiler that: a) the scientific work is free of plagiarism; b) if at a later date it is proven that there was plagiarism in the scientific work, the author will be subject to sanctions in accordance with the provisions of the legislation."

Then this article also stipulates that for student actors, sanctions start from verbal warnings then written warnings or postponement of exams for students, cancellation of exams then prohibition from participating in university academic activities, revocation of academic degrees and/or revocation of position as members of the UI academic community. Apart from that, there are also sanctions and penalties for professors, prospective professors, and academic staff.

However, these regulations do not specifically regulate the regulation of the use of AI in the world of higher education and what sanctions students and lecturers will receive if they are proven to have committed plagiarism using AI technology. So that the application of AI in the world of education still requires restrictions that are

²⁰ M. Agus Nuryatno. (2008). School of Critical Education, Revealing the Relations of Political Knowledge and Power. Resist Book.

regulated specifically, so that users, especially students and lecturers, can be wiser.

CONCLUSION

Ethical issues around the use of AI in higher education institutions can be minimized by imposing academic regulations for educators and students as AI users to behave responsibly and ethically. Educational institutions can apply software to detect the level of use of AI in order to reduce unfair practices that are detrimental to the academic integrity of the institution.

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