



ARTIFICIAL INTELLIGENCE FROM THE PERSPECTIVE OF EDUCATIONAL PHILOSOPHY: OPPORTUNITIES, CHALLENGES, AND ETHICAL IMPLICATIONS

Miftahudin*¹, Muntaha Mahfud², Aina Sufya Fuaida³, Rudini⁴, Muhlisin⁵.

Institut Miftahul Huda Al Azhar ^{1 2}, UIN Salatiga³, IAIN Syaikh Abdurrahman Siddik Bangka Belitung⁴

miftahudinmiftah9377@gmail.com*

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Abstract

The rapid development of Artificial Intelligence (AI) has transformed various sectors of society, including education, by introducing innovative approaches to teaching, learning, assessment, and educational management. While AI offers significant opportunities to improve learning effectiveness, personalize educational experiences, and enhance institutional efficiency, it also raises fundamental philosophical and ethical questions concerning the nature of knowledge, the role of educators, human autonomy, justice, and moral responsibility. This study aims to examine Artificial Intelligence from the perspective of educational philosophy by analyzing its opportunities, challenges, and ethical implications in contemporary education. The research employs a qualitative library research approach through a comprehensive review of scholarly books, peer-reviewed journal articles, policy documents, and international reports related to artificial intelligence, educational philosophy, and educational ethics. The collected data were analyzed using descriptive content analysis to identify major philosophical themes and ethical issues associated with AI integration in education. The findings reveal that Artificial Intelligence has considerable potential to enhance personalized learning, improve educational accessibility, support data-driven decision-making, and facilitate innovative pedagogical practices. However, AI implementation also presents significant challenges, including algorithmic bias, data privacy concerns, digital inequality, the declining role of human interaction in learning, and the need to preserve critical thinking and moral development. From the perspective of educational philosophy, AI should be regarded as a complementary tool that supports, rather than replaces, the essential role of teachers in fostering intellectual growth, ethical reasoning, and holistic human development. The study concludes that the successful integration of AI into education requires a balanced approach that combines technological innovation with humanistic values, ethical governance, and philosophical reflection. This research contributes to the growing discourse on educational philosophy by providing a conceptual framework for understanding the responsible and ethical implementation of Artificial Intelligence in contemporary educational systems.

Keywords: Artificial Intelligence, Educational Philosophy, Ethics, Digital Education, Humanistic Education

Abstrak

Perkembangan Artificial Intelligence (AI) yang semakin pesat telah membawa perubahan signifikan dalam berbagai sektor kehidupan, termasuk dunia pendidikan, melalui hadirnya berbagai inovasi

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dalam proses pembelajaran, penilaian, serta pengelolaan pendidikan. AI menawarkan berbagai peluang untuk meningkatkan efektivitas pembelajaran, memberikan pengalaman belajar yang bersifat personal (*personalized learning*), memperluas akses pendidikan, serta meningkatkan efisiensi administrasi pendidikan. Namun demikian, pemanfaatan AI juga memunculkan berbagai persoalan filosofis dan etis yang berkaitan dengan hakikat pengetahuan, peran pendidik, otonomi manusia, keadilan, tanggung jawab moral, privasi data, serta nilai-nilai kemanusiaan dalam proses pendidikan. Penelitian ini bertujuan untuk mengkaji Artificial Intelligence dalam perspektif filsafat pendidikan dengan menganalisis peluang, tantangan, dan implikasi etisnya terhadap penyelenggaraan pendidikan kontemporer. Penelitian menggunakan pendekatan library research dengan metode penelitian kualitatif melalui telaah berbagai buku, artikel ilmiah bereputasi, dokumen kebijakan, serta laporan lembaga internasional yang berkaitan dengan kecerdasan buatan, filsafat pendidikan, dan etika pendidikan. Data dianalisis menggunakan teknik analisis isi (content analysis) secara deskriptif untuk mengidentifikasi tema-tema filosofis dan persoalan etika yang muncul dalam implementasi AI di bidang pendidikan. Hasil penelitian menunjukkan bahwa Artificial Intelligence memiliki potensi besar dalam meningkatkan pembelajaran yang adaptif, memperkuat akses pendidikan, mendukung pengambilan keputusan berbasis data, serta mendorong inovasi pedagogis. Di sisi lain, implementasi AI juga menghadirkan tantangan berupa bias algoritma, perlindungan data pribadi, kesenjangan digital, berkurangnya interaksi manusia dalam proses pembelajaran, serta perlunya menjaga kemampuan berpikir kritis, karakter, dan perkembangan moral peserta didik. Dari perspektif filsafat pendidikan, Artificial Intelligence seharusnya diposisikan sebagai alat pendukung yang memperkuat proses pendidikan, bukan sebagai pengganti peran pendidik dalam membentuk manusia yang berpengetahuan, berakarakter, dan bermoral. Penelitian ini menyimpulkan bahwa keberhasilan integrasi AI dalam pendidikan memerlukan keseimbangan antara inovasi teknologi, nilai-nilai humanisme, tata kelola etis, serta refleksi filosofis agar teknologi dapat dimanfaatkan secara bertanggung jawab untuk mendukung tujuan pendidikan yang holistik dan berkelanjutan.

Kata kunci: Artificial Intelligence, filsafat pendidikan, etika pendidikan, pendidikan digital, humanisme

A. Introduction

Artificial Intelligence (AI) has emerged as one of the most transformative technologies of the twenty-first century, reshaping various aspects of human life, including education. The rapid advancement of machine learning, natural language processing, robotics, and data analytics has enabled AI to support educational activities through intelligent tutoring systems, automated assessment, personalized learning, and educational decision-making. These technological developments have changed the way knowledge is delivered, accessed, and evaluated, making education more adaptive, efficient, and data-driven (Russell & Norvig, 2021; UNESCO, 2023). Consequently, educational institutions across the world are increasingly integrating AI into teaching and learning processes to improve educational quality and expand access to learning opportunities.

The adoption of Artificial Intelligence in education offers numerous opportunities for enhancing learning experiences. AI-powered applications enable personalized learning by adapting instructional materials to students' individual needs, learning styles, and academic

performance. In addition, AI facilitates administrative efficiency through automated grading, curriculum management, learning analytics, and virtual academic assistance, allowing educators to focus more on meaningful interactions with students (Holmes et al., 2022). These innovations have become particularly relevant in the era of digital transformation, where educational systems are expected to respond quickly to technological developments and changing societal demands.

Despite its numerous advantages, the integration of AI into education has generated significant philosophical and ethical debates. Educational philosophy has long emphasized that education is not merely the transmission of knowledge but also a process of cultivating critical thinking, moral character, creativity, and holistic human development. Excessive reliance on intelligent technologies raises concerns regarding the diminishing role of teachers, the reduction of direct human interaction, algorithmic bias, data privacy, academic integrity, and unequal access to digital technologies (Floridi & Cowls, 2019). These issues indicate that AI should not only be evaluated from a technological perspective but also through philosophical reflection concerning the aims, values, and ethics of education.

From the perspective of educational philosophy, technology should function as a means of supporting human development rather than replacing human agency in the educational process. Philosophical traditions such as humanism, pragmatism, and constructivism emphasize that education should promote intellectual autonomy, ethical reasoning, social responsibility, and lifelong learning. Therefore, the implementation of Artificial Intelligence must remain aligned with fundamental educational values that prioritize human dignity, justice, collaboration, and moral responsibility (Noddings, 2018; Biesta, 2020). AI should serve as an educational instrument that empowers both teachers and learners while preserving the essential human dimensions of education.

Previous studies have primarily focused on the technological capabilities and practical applications of Artificial Intelligence in education, including learning analytics, intelligent tutoring systems, and educational data mining (Holmes et al., 2022; Zawacki-Richter et al., 2019). However, relatively fewer studies have comprehensively examined AI from the perspective of educational philosophy by integrating discussions on educational objectives, ethical values, and humanistic principles. This gap suggests the need for a broader philosophical analysis that critically evaluates the opportunities, challenges, and ethical implications of AI within contemporary educational systems.

Based on this research gap, the present study aims to analyze Artificial Intelligence from the perspective of educational philosophy by exploring its opportunities, challenges, and ethical implications for modern education. Specifically, this study examines how AI can contribute to educational innovation while maintaining the philosophical foundations of education, including humanism, ethical responsibility, critical thinking, and holistic human development. The findings are expected to contribute to the growing discourse on educational philosophy and provide conceptual recommendations for the responsible, ethical, and sustainable integration of Artificial Intelligence in educational practice.

B. Theoretical Study

1. Artificial Intelligence in Education

Artificial Intelligence (AI) refers to computer systems capable of performing tasks that typically require human intelligence, including learning, reasoning, problem-solving, language understanding, and decision-making. In education, AI has evolved into a transformative technology that supports intelligent tutoring systems, adaptive learning platforms, automated assessment, learning analytics, and virtual teaching assistants. These applications enable educational institutions to improve instructional effectiveness, personalize learning experiences, and optimize administrative processes (Russell & Norvig, 2021; Holmes et al., 2022). The rapid expansion of AI technologies demonstrates their growing importance in shaping the future of teaching and learning.

The adoption of AI in education is closely associated with the concept of digital transformation, where technological innovation is utilized to improve educational quality and accessibility. AI-powered systems analyze learners' performance and provide personalized recommendations that accommodate individual learning needs. Consequently, AI has become an essential component of modern educational ecosystems by supporting data-driven instructional planning and continuous learning improvement (UNESCO, 2023).

2. Educational Philosophy

Educational philosophy is a branch of philosophy that examines the nature, objectives, values, methods, and ethical foundations of education. It provides conceptual guidance for understanding how education should contribute to human development and social progress. Major philosophical traditions including idealism, realism, pragmatism, humanism, and

constructivism offer different perspectives on the purposes of education and the relationship between teachers, learners, knowledge, and society (Noddings, 2018).

Humanistic educational philosophy emphasizes that education should cultivate the intellectual, emotional, moral, and social dimensions of learners rather than merely transmitting knowledge. Similarly, constructivist philosophy argues that learners actively construct knowledge through meaningful experiences, interaction, and reflection. These philosophical perspectives highlight that technology should function as a supportive educational tool while preserving the central role of teachers in facilitating critical thinking, creativity, and character development (Biesta, 2020).

3. Opportunities of Artificial Intelligence in Education

Artificial Intelligence offers numerous opportunities to improve educational practices. Personalized learning systems enable instructional materials to be adapted according to students' abilities, learning preferences, and progress, thereby increasing learning effectiveness and student engagement. AI also supports teachers by automating routine administrative tasks such as grading, attendance management, curriculum planning, and learning assessment, allowing educators to devote more attention to pedagogical interaction and mentoring (Holmes et al., 2022).

Furthermore, AI contributes to expanding educational access through online learning platforms, intelligent tutoring systems, speech recognition technologies, and multilingual translation services. These innovations facilitate inclusive education by providing learning opportunities for students with diverse backgrounds and special educational needs. Therefore, AI has significant potential to improve educational equity, efficiency, and innovation on a global scale (UNESCO, 2023).

4. Ethical Challenges of Artificial Intelligence in Education

Despite its substantial benefits, AI implementation raises complex ethical challenges. One major concern is algorithmic bias, where AI systems may produce discriminatory outcomes due to biased training data or flawed computational models. Additional ethical issues include data privacy, cybersecurity, transparency, accountability, academic integrity, and unequal access to digital technologies (Floridi & Cowls, 2019). These concerns require educational institutions to establish ethical guidelines that govern the responsible use of AI.

From an educational perspective, another significant challenge is the potential reduction of meaningful human interaction in teaching and learning. Excessive dependence

on intelligent technologies may weaken communication, empathy, collaboration, and moral education, all of which are fundamental objectives of holistic education. Consequently, AI should complement rather than replace teachers, whose roles extend beyond knowledge transmission to include mentoring, character formation, and ethical guidance (Biesta, 2020).

5. Ethical Implications from the Perspective of Educational Philosophy

Educational philosophy provides an essential framework for evaluating the ethical implications of AI integration in education. Humanistic philosophy emphasizes that technological innovation must always respect human dignity, freedom, autonomy, and moral responsibility. Likewise, pragmatism views technology as valuable only when it contributes positively to meaningful educational experiences and societal well-being (Noddings, 2018).

From this perspective, AI should be designed and implemented according to ethical principles such as justice, transparency, accountability, inclusiveness, and respect for human rights. Educational decision-making should remain centered on human values rather than solely on algorithmic efficiency. Therefore, responsible AI governance requires collaboration among educators, policymakers, technology developers, and educational institutions to ensure that technological innovation supports equitable, ethical, and sustainable educational development (UNESCO, 2023; Floridi & Cowls, 2019).

6. Conceptual Framework

This study is based on the assumption that Artificial Intelligence presents both opportunities and challenges for contemporary education. AI has the potential to improve personalized learning, educational accessibility, instructional efficiency, and administrative effectiveness. However, these technological benefits must be balanced with philosophical reflection on educational purposes, ethical responsibility, and human development.

The conceptual framework proposes that educational philosophy functions as a normative foundation for evaluating AI implementation in education. Humanistic educational values, ethical governance, critical thinking, and holistic learner development should guide technological innovation so that AI serves as an instrument for empowering teachers and learners rather than replacing the essential human dimensions of education. Consequently, the integration of Artificial Intelligence should promote educational excellence while preserving the moral, social, and philosophical objectives of education (Biesta, 2020; UNESCO, 2023).

C. Research Methodology

This study employed a qualitative library research approach to examine Artificial Intelligence (AI) from the perspective of educational philosophy, with particular emphasis on its opportunities, challenges, and ethical implications in contemporary education. A library research design was selected because the study aims to develop a conceptual understanding by synthesizing existing scholarly knowledge rather than collecting primary field data. The data were obtained from secondary sources, including peer-reviewed journal articles, academic books, international policy reports, conference proceedings, and official publications related to Artificial Intelligence, educational philosophy, ethics, and educational technology. The literature selection prioritized recent and authoritative publications to ensure the relevance, credibility, and comprehensiveness of the analysis (Creswell & Creswell, 2018; Snyder, 2019).

The collected data were analyzed using descriptive content analysis, which involved systematically identifying, categorizing, comparing, and interpreting concepts, theories, and empirical findings from the selected literature (Krippendorff, 2018). The analysis focused on four major themes: (1) the opportunities offered by Artificial Intelligence in improving educational quality, (2) the challenges associated with AI implementation in teaching and learning, (3) the ethical implications of AI for educational practice, and (4) the relevance of educational philosophy in guiding the responsible use of AI. To enhance the trustworthiness of the findings, the researchers applied source triangulation by comparing perspectives from various academic disciplines, including philosophy, education, computer science, and ethics. This analytical approach enabled the study to formulate a comprehensive conceptual framework for understanding the role of Artificial Intelligence within a humanistic and ethically grounded educational system (UNESCO, 2023; Floridi & Cowls, 2019).

D. Results and Discussion

The analysis of the reviewed literature indicates that Artificial Intelligence (AI) has become a transformative force in contemporary education by reshaping teaching, learning, assessment, and educational management. AI technologies, including intelligent tutoring systems, adaptive learning platforms, natural language processing, and learning analytics, enable educational institutions to provide more efficient and personalized learning experiences. Rather than merely automating administrative tasks, AI has expanded educational opportunities by supporting data-driven instructional planning, continuous student assessment, and individualized

learning pathways. These developments demonstrate that AI has evolved from a technological innovation into a strategic component of educational transformation in the digital era (Russell & Norvig, 2021; UNESCO, 2023).

One of the most significant findings concerns the opportunities offered by AI in improving learning quality. Personalized learning systems powered by AI can analyze learners' academic performance, learning styles, and progress, allowing instructional content to be adjusted according to individual needs. Such adaptive learning environments enhance student engagement, promote self-directed learning, and provide timely feedback that supports continuous improvement. Furthermore, AI assists teachers by automating repetitive administrative activities, including grading, attendance management, and learning progress monitoring, enabling educators to devote greater attention to mentoring, critical discussion, and character development (Holmes et al., 2022). From the perspective of educational philosophy, these innovations align with learner-centered educational approaches that recognize the uniqueness and potential of every individual.

The findings also demonstrate that AI contributes significantly to educational accessibility and inclusiveness. Digital platforms supported by AI facilitate learning regardless of geographical location, physical limitations, or socio-economic background. Speech recognition, language translation, assistive technologies for learners with disabilities, and intelligent virtual tutors create broader educational opportunities for diverse learners. This capability supports the principle of equitable education by reducing barriers to learning and expanding educational participation. Nevertheless, the effectiveness of these technologies depends on the availability of digital infrastructure, internet connectivity, and adequate digital literacy among educators and students (UNESCO, 2023).

Despite these opportunities, the literature consistently identifies several ethical and philosophical challenges associated with AI implementation. One of the most prominent issues is algorithmic bias, where AI systems may unintentionally reproduce social inequalities because of biased datasets or opaque computational models. Additional concerns include data privacy, cybersecurity, surveillance, ownership of educational data, and accountability for AI-assisted decision-making. These ethical issues require educational institutions to establish transparent governance mechanisms that ensure fairness, accountability, and respect for learners' rights (Floridi & Cowls, 2019). Without adequate ethical regulation, technological innovation may undermine the educational values it intends to promote.

Another important finding relates to the changing role of teachers in the age of Artificial Intelligence. Educational philosophy emphasizes that education is fundamentally a human process involving dialogue, empathy, moral guidance, and the development of wisdom. Although AI can provide instructional support and analytical insights, it cannot replace the human qualities necessary for nurturing ethical judgment, emotional intelligence, creativity, and interpersonal relationships. Teachers remain central figures who facilitate meaningful learning experiences, cultivate democratic values, and guide students in developing responsible citizenship. Therefore, AI should function as an educational partner rather than a substitute for professional educators (Biesta, 2020; Noddings, 2018).

The analysis further reveals that educational philosophy provides a critical normative framework for evaluating AI integration. Humanistic philosophy emphasizes that technological advancement should always serve human dignity and holistic development rather than technological efficiency alone. Similarly, constructivist perspectives argue that meaningful learning occurs through interaction, collaboration, reflection, and active knowledge construction—dimensions that cannot be fully replicated by intelligent machines. Consequently, educational policies concerning AI should prioritize ethical responsibility, learner autonomy, inclusiveness, and the cultivation of critical thinking alongside technological innovation (Biesta, 2020). These principles ensure that education remains centered on human flourishing rather than technological determinism.

Another significant result concerns the necessity of establishing ethical governance for Artificial Intelligence in education. The literature highlights the importance of developing institutional policies that regulate data protection, algorithm transparency, academic integrity, and responsible AI use. Collaboration among governments, educational institutions, technology developers, teachers, and researchers is essential to formulate ethical standards that balance innovation with public accountability. Ethical governance should also include continuous professional development programs that equip educators with digital competencies and ethical awareness necessary for integrating AI into educational practice responsibly (UNESCO, 2023; Holmes et al., 2022).

Overall, the findings demonstrate that Artificial Intelligence offers substantial opportunities for improving educational quality, accessibility, efficiency, and innovation while simultaneously generating complex philosophical and ethical challenges. From the perspective of educational philosophy, AI should be understood as a complementary educational instrument

that supports, rather than replaces, the essential human dimensions of education. The successful implementation of AI requires a balanced approach that integrates technological innovation with humanistic values, ethical governance, critical reflection, and educational justice. Such an approach will enable educational systems to harness the benefits of Artificial Intelligence while preserving the fundamental purposes of education: the intellectual, moral, emotional, and social development of human beings (Floridi & Cows, 2019; UNESCO, 2023).

E. Conclusion and Suggestions

1. Conclusion

This study concludes that Artificial Intelligence (AI) has become a transformative innovation with the potential to reshape contemporary education by improving learning quality, educational accessibility, administrative efficiency, and pedagogical innovation. From the perspective of educational philosophy, AI offers valuable opportunities to support personalized learning, facilitate data-driven educational decision-making, and expand inclusive educational services. However, the integration of AI into education should not be viewed solely as a technological advancement but also as a philosophical and ethical issue that influences the fundamental purposes of education. The findings indicate that although AI can optimize instructional processes and enhance learning experiences, it cannot replace the essential role of teachers in fostering critical thinking, moral reasoning, creativity, empathy, and holistic human development.

Furthermore, this study demonstrates that the successful implementation of AI in education requires a balanced integration of technological innovation and humanistic educational values. Ethical concerns such as algorithmic bias, data privacy, digital inequality, transparency, accountability, and academic integrity must be addressed through responsible governance and educational policies. Educational philosophy provides an important normative framework for ensuring that AI serves human dignity, social justice, and lifelong learning rather than merely improving technological efficiency. Therefore, AI should function as a complementary educational tool that empowers teachers and learners while preserving the human, moral, and social dimensions of education. Such an approach will enable educational institutions to benefit from technological innovation without compromising the core values of education.

2. Suggestions

Future research is recommended to extend this conceptual study by employing quantitative, qualitative, or mixed-method approaches to investigate the practical implementation of Artificial Intelligence in various educational contexts. Comparative studies involving schools, universities, and different national education systems would provide deeper insights into the effectiveness, ethical challenges, and policy implications of AI integration. Additionally, future research should explore emerging issues such as generative AI, learning analytics, adaptive assessment, digital citizenship, and the relationship between Artificial Intelligence and the development of higher-order thinking skills, character education, and educational equity.

From a practical perspective, policymakers, educational institutions, and technology developers should establish comprehensive ethical guidelines and regulatory frameworks that govern the responsible use of Artificial Intelligence in education. Teacher professional development programs should also be strengthened to improve digital competence, AI literacy, and ethical awareness so that educators can effectively integrate AI into teaching and learning while maintaining meaningful human interaction. Furthermore, collaboration among governments, universities, schools, researchers, and technology industries is essential to ensure that Artificial Intelligence is developed and implemented in ways that promote innovation, inclusiveness, sustainability, and the holistic development of learners. By integrating technological progress with philosophical reflection and ethical responsibility, education can maximize the benefits of Artificial Intelligence while preserving its fundamental mission of developing knowledgeable, ethical, creative, and socially responsible human beings.

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