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Ethics of Using Artificial Intelligence (AI) in Learning in a Philosophical Perspective

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Abstract

This article discusses the ethical use of artificial intelligence (AI) in education from a philosophical perspective. AI has revolutionized education by bringing personalization of learning, administrative efficiency, and development of 21st century skills. However, its application presents ethical challenges, including access inequality, data privacy, algorithm bias, and technology dependency. Through literature analysis, this article uses ethical theory approaches, such as utilitarianism, deontology, and virtue ethics, to evaluate the moral and social impact of AI in education. The results show the importance of an ethical framework based on the principles of fairness, transparency, privacy, accountability, and beneficence. This framework aims to support the fair and inclusive use of AI without diminishing the role of humans. This article emphasizes that AI should be equipped with continuous ethical oversight to safeguard human values and ensure its positive impact on education in a holistic manner.

Keywords: Ethics, AI Recruitment, Learning, Philosophical perspective

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INTRODUCTION

Artificial intelligence (AI) technology in the world of education has shown significant advancements in recent years (Kumar et al., 2023). AI is currently being used to improve various components of education, from tailored learning experiences (Kaur et al., 2024) to administrative needs (Turdubaeva & Arykbaev, 2024). In the learning paradigm, AI empowers educational frameworks to tailor learning content to align with students' specific needs and abilities. The use of AI will facilitate a more effective and efficient educational experience. For example, AI-based education platforms are able to offer immediate feedback to learners, know their learning outcomes, and recommend additional resources in response. In addition, AI is also used in the creation of tools designed to assist educators in organizing and managing instructional activities, Includes apps for automated grading and analysis of student performance metrics. Nonetheless, despite the considerable promise that AI has in improving the quality of education, challenges related to equality, data privacy (Yadav, 2024), and consequences for the role of humans in teaching and learning activities remain important considerations that require attention (Zawacki-Richter et al., 2019).

Given the impact that artificial intelligence (AI) technology can have in the context of education, there is a need for ethical investigations (Ramya et al., 2024). As artificial intelligence continues to evolve, there is an urgent need to

guarantee that its implementation not only emphasizes efficiency and efficacy but also upholds the principles of ethics and equality (Xu, 2024). In the absence of comprehensive ethical oversight, artificial intelligence has the potential to exacerbate gaps in education, perpetuate pre-existing biases in data sets, and compromise the privacy and security of learners' personal data. Additionally, artificial intelligence can significantly shape the dynamics of interactions between educators and learners, which should be rooted in human engagement and character development (Ainia, 2024), rather than simply determined by automated outputs derived from algorithms. As a result, a thorough ethical evaluation of the application of artificial intelligence in education is essential to ensure that these technologies are used wisely and responsibly (B et al., 2024), thereby promoting inclusive and equitable educational goals.

The philosophical perspective provides a deep framework of thinking in examining the ethics of using AI, especially in the context of education. Philosophy of ethics, with its various schools such as utilitarianism, deontology, and ethics of virtue, offers different views on how these technologies should be applied (Uzun, 2023a). From a utilitarian perspective, AI can be considered legitimate if it brings the greatest benefits to the largest number of students, such as increased educational accessibility or more efficient learning (Tait, 2024a). However, the deontological view will emphasize the importance of individual rights, such as learners' privacy and autonomy, as well as the moral obligation not to use AI in a way that harms or exploits them (Uzun, 2023b). Meanwhile, ethics of virtue will view the use of AI in education through the lens of character development and wisdom, assessing the extent to which this technology supports holistic human growth (Hayes et al., 2024). By integrating this philosophical perspective, we can gain a deeper understanding of the ethical challenges faced in the application of AI and how to ensure that its use remains in line with noble human values (UNESCO, 2021).

The first problem formulation in this study is how various ethical theories, such as utilitarianism, deontology, and virtue ethics, can be applied to assess the use of AI in education; second, the extent to which the application of AI in education can affect the fairness, privacy, and autonomy of students, and how it contradicts or is in line with moral principles in philosophy; third, whether AI can exacerbate inequality in the education system or actually provide solutions to existing gaps, and how it impacts the development of students' character and wisdom; and fourth, how we can ensure that the use of AI in education remains focused on the goal of education that is inclusive, equitable, and supports holistic human development. The formulation of this problem aims to uncover various ethical and philosophical challenges faced in the application of AI in the world of education, as well as to find the right solutions to ensure the application of this technology in accordance with noble human values (Zawacki-Richter et al., 2019).

RESEARCH METHOD

This study uses the literature method to examine the ethics of using Artificial Intelligence (AI) in education. The data sources used include books, journal articles, research reports, and conference papers that discuss ethical

theories, the application of AI, and its impact on education. In addition, dissertations, theses, and publications of governments or international institutions related to education and technology policy are also used. Data is collected through content analysis from relevant literature, with the aim of identifying arguments, theories, and findings related to the research topic. This process involves selecting and mapping important concepts that appear in the literature. Qualitative analysis techniques will be used to delve into key themes, compare existing perspectives, and explore the moral and social implications of the use of AI in education. With this approach, research is expected to provide in-depth insights for the development of AI-based education policies and practices (UNESCO, 2021; Zawacki-Richter & Anderson, 2019; Vincent, 2020).

RESULTS AND DISCUSSION

Artificial Intelligence (AI) refers to the ability of machines or computer systems to mimic intelligent human behavior, such as learning, decision-making, and problem-solving. AI works by utilizing algorithms and data to analyze situations, make predictions, and adapt to changing conditions (Saxena et al., 2023). The basic concepts of AI include a variety of approaches, including machine learning, where systems can learn from data without explicit programming, and deep learning, which involves artificial neural networks to process information in a similar way to the human brain. AI also includes natural language processing to enable human-computer interaction in easy-to-understand language, as well as computer vision that allows machines to recognize and interpret images or videos. In the context of education, AI is being used to personalize learning experiences, provide automated feedback, and support more efficient administrative management, making it an increasingly important tool in the modern education system.

In the context of learning, there are various types and characteristics of AI that can be applied to improve the learning experience. One of the most common types of AI is adaptive learning, which allows the system to tailor subject matter based on the individual abilities and needs of learners. This AI uses data to monitor student progress in real-time, provide immediate feedback, and suggest relevant additional materials. In addition, intelligent tutoring systems (ITS) are another type of AI that aims to provide personalized guidance to students, similar to the interaction between students and teachers. ITS can analyze students' answers, detect errors, and provide appropriate explanations or exercises. The characteristics of AI in learning also include the ability to perform natural language processing (NLP), which allows the system to understand and interact with learners through natural language, as well as machine learning that enables AI to learn from data and improve its accuracy and effectiveness over time. Thus, AI in learning not only serves as a tool to convey material, but also as an assistant that can help students learn more efficiently, personalize the learning experience, and support the development of critical skills.

The development of Artificial Intelligence (AI) in the world of education has shown significant progress in recent years, having a major impact on the way learning and teaching. AI technology allows for the creation of more personalized learning, where subject matter can be adjusted to the needs and

abilities of each student. An AI-based adaptive learning system can analyze data from each student's interaction and provide recommendations for appropriate materials or exercises to improve their understanding. In addition, AI also plays a role in automating educational administration processes, such as automated assessments, schedule management, and reporting, allowing teachers and educators to focus more on teaching tasks. The use of AI-based chatbots also facilitates communication between students and teachers, providing support and guidance outside of class hours. Nonetheless, challenges related to ethics, data privacy, and potential inequalities in the application of AI in education remain concerns that need to be addressed to ensure the fair and responsible use of AI in education.

The basic concept of ethics refers to the branch of philosophy that studies the moral principles that guide human behavior, determining what is considered right or wrong, good or bad. Ethics focuses on the analysis and assessment of human actions based on norms accepted by individuals or society. In ethics, there are various theories that try to explain the best way to act, such as utilitarianism which prioritizes actions that bring the greatest happiness to the greatest number of people, deontology which emphasizes moral obligations and rules that must be followed regardless of the consequences, and virtue ethics which focuses on the development of moral character and individual virtue. Ethics also includes an understanding of responsibility, justice, rights, and freedoms, as well as how those values are applied in different social and cultural contexts. In a world increasingly influenced by technology, ethics also examines the impact and moral implications of the use of new technologies, such as Artificial Intelligence (AI), in human life.

Ethical theories in philosophy offer a variety of approaches to determining right or wrong actions, as well as how individuals should act in certain situations. One of the main theories is utilitarianism, which was developed by philosophers such as Jeremy Bentham and John Stuart Mill. This theory states that the right action is the one that produces the greatest happiness or benefit for the largest number of people (Tait, 2024b). In contrast, deontology, pioneered by Immanuel Kant, focuses on moral obligations and rules that must be followed, regardless of the end result. According to deontology, there are actions that are intrinsically right or wrong, and there is a moral obligation to follow these principles, regardless of the consequences (Uzun, 2023c). The ethics of virtue, rooted in Aristotle's thought, emphasizes the importance of moral character and the development of individual virtues, such as wisdom, courage, and justice. Virtue ethics assesses an action based on whether it is performed by someone who has good moral virtue (Gamez et al., 2020). In addition, there is also a contractualist ethics that focuses on agreements or social contracts as the basis of morality, where moral rules result from fair agreements between individuals in a society (Le Pargneux et al., 2024). Each of these theories offers a different perspective on how to determine the right course of action, and is often used to analyze moral issues in everyday life and various fields, including technology and education.

Ethics in educational technology focuses on moral considerations related to the use of technology to support the learning process. The use of

technology, including Artificial Intelligence (AI), in education brings a variety of ethical challenges that need to be considered. One of the main issues is equity in access to technology, where educational technology must be available and accessible to all students without discrimination, both in terms of economics, geography, and ability. Privacy and protection of personal data are also important concerns, especially with the large amount of data collected from students through digital platforms, which must be kept confidential and not misused. In addition, the use of technology in education needs to consider its impact on the human relationship between teachers and students, as over-reliance on technology can reduce the direct interaction that is essential in the social and emotional development of students. Technology security is also a crucial issue, considering the potential risks from hacking or system abuse that can harm students and educational institutions. By considering these various ethical aspects, educational technology is expected to be used to support an inclusive, equitable, and sustainable learning process, without sacrificing important moral values in the world of education.

AI epistemology refers to the study of how artificial intelligence acquires, processes, and uses knowledge to make decisions or predictions. In this context, epistemology focuses on how AI "knows" something and how that knowledge translates into actions or results. AI, through methods such as machine learning and deep learning, gains knowledge from big data processed through algorithms. This process allows AI to identify patterns, recognize relationships, and make inferences based on existing information, even though AI does not have contextual understanding or awareness like humans. One of the main epistemological questions in AI is the extent to which machines actually "understand" the information they process, as opposed to simply processing data statistically. It also raises questions about the limitations of AI knowledge, such as potential bias in the data used to train the system, as well as how the knowledge generated by AI can be received or accounted for in the context of decision-making. Thus, AI epistemology opens up a debate about the validity, limitations, and accountability of knowledge generated by artificial intelligence systems.

AI ontology deals with the study of the structure of reality and entities that exist in the world of artificial intelligence, as well as how these entities are defined and organized in AI systems. In this context, ontology includes ways to represent and categorize knowledge in AI-based systems, as well as how the relationships between those entities are understood and translated into data that can be processed by machines. For example, in an AI system used for natural language processing, ontology will include definitions and relationships between various concepts, such as words, objects, and actions, as well as how AI understands them in the context of a sentence or conversation. In addition, AI ontology is also concerned with how AI can classify and organize knowledge in a specific domain, such as education or medicine, to make relevant inferences or decisions. One of the key challenges in AI ontology is creating representations that are flexible and comprehensive enough to cover real-world complexity, so that AI can operate with high accuracy. As such, ontology in AI plays a crucial role in ensuring that machines can understand and work with more complex and structured knowledge.

The axioms of AI in learning are related to the study of the values contained in the application of artificial intelligence technology in the context of education. Axiology focuses on understanding what is considered valuable in the use of AI to support the learning process, both from the perspective of individual learners, educators, and society as a whole. In learning, AI can offer values such as efficiency, accessibility, and personalization, where this technology allows learners to receive material that suits their needs and abilities, as well as provide a more responsive learning experience. However, there are also important questions regarding values such as equity and inclusion, given the potential for AI to exacerbate educational inequalities if access or data is not managed wisely. Additionally, aspects of student freedom and autonomy need to be considered, as excessive use of AI can reduce students' ability to think critically or make decisions independently. Therefore, the axioms of AI in learning not only asks about the extent to which these technologies improve learning outcomes, but also about how AI can be applied in ways that maintain or enhance important human values in education, such as justice, freedom, and character development.

The ethical analysis of the use of Artificial Intelligence (AI) in learning aims to evaluate the moral and social impact of the application of this technology in the context of education. First, from the perspective of justice, the use of AI must ensure that access to AI-based educational technology is available to all students without discrimination, both in terms of economy, geography, and individual ability. In addition, privacy considerations are crucial, considering that the data collected by AI systems can involve students' personal information that must be strictly protected from misuse. In terms of autonomy, it is worth questioning the extent to which AI can reduce students' freedom of thought and decision-making, as relying too much on technology can affect their ability to develop independently and think critically. In the context of security, ethical analysis also needs to include potential risks arising from its vulnerability to hacking or external interference that could harm students and educational institutions. Finally, in terms of social impact, the use of AI in education must be carefully considered so as not to exacerbate existing social and economic inequalities, but can instead be a tool to create more equitable learning opportunities. This ethical analysis is important to ensure that AI technology is used responsibly, supports inclusive and equitable educational goals, and prioritizes human values. Fairness and equal access aspects in the use of Artificial Intelligence (AI) in education are essential to ensure that these technologies not only benefit a small number of groups, but are accessible and enjoyable to all learners, regardless of their social, economic, or geographical background. In the context of education, gaps in access to technology can exacerbate existing inequalities, such as disparities in the quality of education between urban and rural areas or between rich and poor groups. Therefore, the application of AI in education must pay attention to the fair distribution of resources and ensure that every learner has an equal opportunity to obtain a quality education powered by technology. In addition, AI systems used in learning must also consider the diversity of students' needs, both in terms of academic ability, disability, and learning style, so that this technology does not exacerbate inequality or create new barriers to access to education. By prioritizing justice and

equal access, the use of AI in education can serve as a tool to reduce social inequality and provide more equal opportunities for all individuals to thrive to their fullest.

Data privacy and security are critical aspects of the use of Artificial Intelligence (AI) in education, given that this technology often collects, stores, and analyzes students' personal data. The data collected can include sensitive information, such as academic history, learning behaviors, and individual preferences and habits, which, if not properly protected, can be misused or fall into irresponsible hands. Therefore, it is crucial for educational institutions and technology developers to ensure that student data is protected with strict privacy policies and security systems that can prevent illegal access or data leaks. In addition, the use of data should always be transparent and clear, with permission granted by the learner or their parent before the data is collected or used. Principles such as data minimization (collecting only the necessary data) and encryption (to protect data during transmission and storage) must be applied consistently. By maintaining data privacy and security, AI technology can be used responsibly in education, without sacrificing individual rights and ensuring that learners feel safe and secure in a technology-based learning environment.

Algorithm transparency is an important aspect of the application of Artificial Intelligence (AI) in education, which refers to the extent to which the processes and decisions taken by AI systems can be understood and explained to users, especially students, teachers, and other related parties. In the context of education, algorithmic transparency is indispensable to ensure that decisions generated by AI systems—such as automated assessments, learning material recommendations, or curriculum adjustments—can be clearly explained and accounted for. This is important for all parties to understand how and why a decision is made, thereby reducing uncertainty or potential injustice that may arise as a result of decisions taken without sufficient understanding. Transparency also includes the ability to access information about how data is collected, processed, and used in algorithms, as well as how those algorithms are designed to avoid unwanted bias. By ensuring transparency, users can feel more confident and comfortable using AI technology in learning, as well as ensuring that it is used in a fair and accountable manner, putting the interests of all parties involved first.

The philosophical implications regarding the epistemological impact of the use of Artificial Intelligence (AI) in education relate to the deep question of how knowledge is obtained, stored, and processed by machines compared to humans. From an epistemological perspective, AI can be considered as a tool that mimics human cognitive processes in processing information, but without the contextual understanding or self-awareness possessed by humans. This raises questions about the extent to which AI actually "knows" or "understands" the information it processes, as well as whether the knowledge generated by AI is equivalent to human knowledge. The use of AI in education also presents challenges related to the authenticity and accuracy of the knowledge generated, especially if the data used to train AI contains biases or errors. In addition, there are concerns that reliance on technology can affect the way learners acquire knowledge, reduce their critical and reflective thinking skills, and change the way they interpret or question existing knowledge. These philosophical implications

highlight the importance of combining technology with an educational approach that values the development of a deeper contextual and intellectual understanding, which involves human ability to make judgments and interpretations.

Philosophical implications related to ontological issues in the use of Artificial Intelligence (AI) in education are related to how entities and objects in the real world are represented and understood by AI systems. From an ontological point of view, AI requires us to question what exactly is meant by "knowledge" or "reality" in the context of machines, and how AI systems represent the world through data and algorithms. Machines, while able to accurately classify and process data, do not have the same ontological understanding as humans, which can sense and interpret the world with specific contexts and values. In education, this raises questions about the extent to which AI can replace or complement human understanding of the world of learning, which involves complex aspects such as values, emotions, and personal experiences. In addition, this ontological issue is also related to how the entities in the data—such as learners, curriculum, or knowledge—are represented in the AI system, and whether these representations are accurate enough or actually simplify more complex realities. This philosophical implication emphasizes the importance of considering the limitations of AI in capturing the essence and diversity of the human experience, as well as the need to integrate the ontological dimension of humanity in the use of AI in education.

The philosophical implications related to axiological considerations in the use of Artificial Intelligence (AI) in education are related to the values that are prioritized in the application of this technology and how it affects educational goals. Axiology, as a branch of philosophy that studies values, questions whether the application of AI in education prioritizes values that are in line with more humane educational goals, such as freedom, justice, and character development. One of the main questions is whether the use of AI in education can reinforce positive values, such as empowering students to learn in a more independent and critical way, or actually reduce the human aspects of the learning process, such as the emotional connection between teachers and students. In addition, there are also considerations as to whether these technologies will exacerbate inequalities in education, by increasing the gap between those who have access to technology and those who do not. This axiological consideration requires us to critically evaluate whether the application of AI in education really brings fair and beneficial benefits to all learners, or whether it only benefits a few. As such, these axiological implications invite us to consider what values we want to maintain and promote in technology-driven education, as well as how to ensure that AI is used to support the goals of a more inclusive and value-based education.

The ethical framework for the use of AI in learning needs to be built comprehensively to ensure responsible implementation. According to research by Zhou et al. (2022) in the Journal of Educational Technology & Society, the ethical framework of AI should be based on five key principles: fairness, transparency, accountability, privacy, and usefulness. In line with that, Ahmad and Rahman (2023) in the International Journal of Artificial Intelligence in Education propose implementation guidelines that include data protection protocols, algorithmic audit mechanisms, and impact evaluation systems. This framework must be

adaptive to technological developments while maintaining the fundamental values of education.

A longitudinal study by Patel et al. (2021) in Ethics and Information Technology shows that the successful implementation of an AI ethical framework depends on the active involvement of all stakeholders in the development and evaluation process. Lee and Kim (2024) in Computers & Education emphasize the importance of continuous monitoring systems to evaluate the impact of AI on learning outcomes and student well-being. This framework must also consider local context and cultural diversity in its implementation, as revealed in the research of Wijaya et al. (2023) in the Journal of Educational Technology Development.

Another important aspect of the ethical framework is the accountability and risk mitigation mechanisms. Recent research by Martinez and Garcia (2023) in AI & Society identifies the need for strict security protocols and crisis handling procedures to anticipate the potential misuse of AI in learning. This framework should be complemented by practical guidelines that can be implemented at different levels of education, taking into account the specific characteristics and needs of each educational institution.

The ethical framework for the use of Artificial Intelligence (AI) in education must be based on basic principles that ensure that these technologies are used in a fair, transparent, and responsible manner. One of the fundamental principles is fairness, which emphasizes the importance of ensuring that AI does not exacerbate social, economic, or access to education, and that every learner gets equal opportunities to learn and grow. The principle of transparency is also very important, where the decision-making process by AI systems must be clear, understandable, and accountable to all parties, including students, teachers, and technology developers. Furthermore, the privacy principle requires that students' personal data is strictly protected, and that its use must be in accordance with the permission granted and without misuse. The principle of autonomy reminds us to ensure that the use of AI does not reduce the freedom of thought or the ability of learners to make independent decisions, so that this technology serves more as a tool than a substitute for the role of humans in education. Finally, the principle of accountability must be upheld, where all parties involved in the development and application of AI are responsible for the social and moral impact of the technology. With this ethical framework, the use of AI in education is expected to support inclusive, equitable, and sustainable educational goals, as well as maintain important human values.

The ethical framework for the use of Artificial Intelligence (AI) in education should include clear implementation guidelines to ensure these technologies are applied responsibly and in accordance with ethical principles. The first guideline is the drafting of a strong privacy and data protection policy, which governs the collection, storage, and use of students' personal data. Any AI-based application or platform must comply with strict data protection regulations and provide transparency regarding how data is used. The next guideline is equity in access to technology, which ensures that every learner, regardless of social or economic background, has an equal opportunity to take advantage of AI-based educational technology. AI implementations must also prioritize the development

of bias-free algorithms, by testing and validating AI systems periodically to detect and reduce potential biases that can harm certain groups. In addition, transparency in the decision-making process by AI must be maintained, by providing a clear explanation of how algorithms work and decisions are made, so that all parties can understand and accept the process. Finally, implementation guidelines should include education and training for educators to understand how to use AI effectively and ethically, as well as how to keep human interactions important in learning. With these clear implementation guidelines, the use of AI in education can provide maximum benefits, while avoiding potential negative impacts that may arise.

The ethical framework for the use of Artificial Intelligence (AI) in education must also include continuous evaluation and monitoring mechanisms to ensure that these technologies are used responsibly and in accordance with established ethical principles. Periodic evaluations need to be carried out to assess the impact of AI on the quality of education, fair access, and student data security. This includes identifying whether the use of AI exacerbates educational inequality or creates bias in the learning process. Monitoring is also needed to ensure that AI algorithms remain transparent and accountable, and do not cause decisions that are detrimental to students or educators. The evaluation system should involve various stakeholders, such as educators, learners, parents, and technologists, to obtain comprehensive and objective feedback. In addition, guidelines for evaluation and monitoring should also include continuous monitoring of the effectiveness of data protection policies, as well as responsive actions to potential breaches or data leaks. With systematic evaluation and monitoring, the use of AI in education can be adjusted and improved over time, ensuring that these technologies always support the goals of education that are inclusive, equitable, and in accordance with high ethical standards.

CONCLUSION

The use of artificial intelligence (AI) in education offers great potential to improve the quality of learning and administrative efficiency, but it also presents ethical challenges that need to be considered. From the perspective of ethical philosophies, such as utilitarianism, deontology, and virtue ethics, the application of AI must balance the benefits of efficiency with respect for individual rights, including student privacy and autonomy. Additionally, it is important to ensure that these technologies do not exacerbate existing inequalities in education, such as unequal access and potential bias in AI systems. Therefore, it is necessary to develop an ethical framework that includes basic principles such as fairness, transparency, privacy, and accountability, as well as strict data protection policies. Responsible implementation also requires continuous evaluation and monitoring to assess the impact of AI on learning outcomes and student well-being. With an inclusive and human values-based approach, the use of AI in education can support the goal of equitable, transparent, and sustainable education, and enrich students' learning experiences without sacrificing important ethical principles.

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