East African Journal of Education Studies
eajes.eanso.org
Volume 8, Issue 1, 2025
Print ISSN: 2707-3939 | Online ISSN: 2707-3947
Title DOI: https://doi.org/10.37284/2707-3947

EAST AFRICAN NATURE & SCIENCE ORGANIZATION

Original Article

Ethical Implications of Artificial Intelligence in University Education

Dr. Jared Momanyi Mauti, PhD[1*] *& Dennis Song'oro Ayieko*[2]

[1] Kisii University, P. O. Box 408-40200, Kisii, Kenya.
[2] Catholic University of Eastern Africa, Gaba Campus, P. O. Box 908, 30100, Eldoret, Kenya.
[*] Author for Correspondence Email: mautijaredmomanyi@yahoo.com

Article DOI: https://doi.org/10.37284/eajes.8.1.2583

Date Published:

03 January 2025

Keywords:

Artificial Intelligence (AI), University Education, Ethical Implications, Data Privacy, Algorithmic Bias, Student-Lecturer Relationships, Kantian Deontological Ethics.

ABSTRACT

The integration of Artificial Intelligence (AI) in university education has emerged as a transformative force, promising to revolutionize teaching, learning, and administration. However, its rapid adoption has sparked ethical concerns, particularly in resource-constrained settings. This theoretical article examines the ethical implications of specific AI applications, including plagiarism detection tools, adaptive learning systems, and automated grading technologies within Kenyan universities. It highlights three critical areas: data privacy and security, student-lecturer dynamics, and algorithmic bias. Drawing from Kantian deontological ethics, which emphasizes duty and the inherent morality of actions, the article argues for a balanced approach to AI integration that prioritizes ethical responsibilities over mere technological expedience. Data privacy and security remain pivotal concerns, as AI systems amass extensive personal data, often without robust safeguards, exposing students to potential exploitation and breaches. The article explores the intersection of AI and student-lecturer relationships, revealing how AI-driven tools can disrupt traditional mentorship roles central to African pedagogical traditions. Furthermore, the pervasive issue of algorithmic bias is critically analysed, emphasizing its potential to perpetuate educational inequities and marginalize underrepresented groups. The article highlights the absence of localized frameworks to address these ethical dilemmas in Kenyan universities. By anchoring its analysis in Kantian ethics, this article provides a compelling framework for navigating the ethical challenges posed by AI in education, ensuring that its implementation enhances equity, accountability, and human dignity. This work contributes to ongoing discourse on the responsible use of AI in education, offering actionable insights for policy, research, and practice.

APA CITATION

Mauti, J. M. & Ayieko, D. S. (2025). Ethical Implications of Artificial Intelligence in University Education. *East African Journal of Education Studies*, *8*(1), 159-167. https://doi.org/10.37284/eajes.8.1.2583

CHICAGO CITATION

Mauti, Jared Momanyi and Dennis Song'oro Ayieko. 2025. "Ethical Implications of Artificial Intelligence in University Education". *East African Journal of Education Studies* 8 (1), 159-167. https://doi.org/10.37284/eajes.8.1.2583

HARVARD CITATION

Mauti, J. M. & Ayieko, D. S. (2025) "Ethical Implications of Artificial Intelligence in University Education", *East African Journal of Education Studies*, 8(1), pp. 159-167. doi: 10.37284/eajes.8.1.2583

IEEE CITATION

J. M., Mauti & D. S., Ayieko "Ethical Implications of Artificial Intelligence in University Education" *EAJES*, vol. 8, no. 1, pp. 159-167, Jan. 2025. doi: 10.37284/eajes.8.1.2583.

Article DOI: https://doi.org/10.37284/eajes.8.1.2583

MLA CITATION

Mauti, Jared Momanyi & Dennis Song'oro Ayieko. "Ethical Implications of Artificial Intelligence in University Education". *East African Journal of Education Studies*, Vol. 8, no. 1, Jan. 2025, pp. 159-167, doi:10.37284/eajes.8.1.2583

INTRODUCTION

The adoption of Artificial Intelligence (AI) in education has revolutionized the learning landscape globally, offering unprecedented opportunities to enhance teaching and learning processes (Holmes et al., 2021; UNESCO, 2022). AI technologies, such as intelligent tutoring systems, adaptive learning platforms, and predictive analytics, have been widely integrated into education systems to improve efficiency, accessibility, and personalization (Luckin et al., 2016; Sharma et al., 2023). However, these advancements have raised significant ethical concerns that necessitate scholarly inquiry, particularly in the domains of data privacy, student-teacher dynamics, and algorithmic bias (Nguyen et al., 2020; Zawacki-Richter et al., 2019).

Globally, the proliferation of AI in education has intensified debates on its ethical implications. Data privacy and security are among the most pressing concerns, as AI systems collect and process vast amounts of personal data to optimize learning experiences. Breaches of sensitive student information, lack of consent, and inadequate data protection frameworks are common issues. For instance, research by Chui et al. (2023) highlights that 65% of educational institutions globally lack robust data privacy policies, leaving them vulnerable to cyber-attacks. Furthermore, the opaque nature of AI algorithms often prevents users from understanding how their data is used, raising questions about transparency and accountability (Moor, 2022).

Another critical area is the impact of AI-driven teaching tools on the student-teacher relationship. AI systems, such as chatbots and automated grading tools, are designed to supplement or replace traditional teaching roles. However, these technologies risk depersonalizing education, eroding the relational dynamics that are central to effective learning. Studies by Lynch et al. (2023) found that over-reliance on AI tools in classrooms can lead to reduced student engagement and a decline in teacher motivation.

Algorithmic bias further complicates the ethical landscape. Machine learning models often reflect the biases present in their training data, leading to discriminatory outcomes. This is particularly problematic in education, where biased algorithms can perpetuate inequalities and undermine inclusivity. Obermeyer et al. (2023) revealed that AI systems used for student assessment in the U.S. disproportionately disadvantaged minority groups, highlighting the need for ethical safeguards. Despite the extensive research on these challenges, there is limited focus on how these issues manifest in low-resource settings, such as African countries, where contextual factors may exacerbate ethical risks.

In Africa, the adoption of AI in education is growing but remains constrained by infrastructural, economic, and policy challenges. Governments and educational institutions are increasingly integrating AI tools to bridge gaps in access and quality, particularly in under-resourced areas. For example, AI-powered mobile learning platforms have been instrumental in providing educational opportunities to students in remote regions (Adedokun et al., 2022). However, the ethical implications of these technologies are often overlooked in the rush to adopt innovations.

Data privacy concerns are particularly acute in Africa, where weak regulatory frameworks and limited public awareness exacerbate vulnerabilities. Research by Kassa and Desta (2022) indicates that 70% of African universities lack comprehensive data protection policies, exposing students and staff to risks of data misuse. Moreover, there is a paucity of studies examining the long-term implications of data breaches on educational institutions in Africa, creating a significant research gap.

The influence of AI on student-teacher relationships is another underexplored area. While AI tools can enhance efficiency, they may also disrupt the human connections that are integral to African pedagogical traditions. Traditional African education emphasizes communal learning and mentorship, values that may be undermined by AI technologies. For instance, a study by Ochieng and Adebayo (2023) observed that

Article DOI: https://doi.org/10.37284/eajes.8.1.2583

students in Kenyan universities using AI-driven tools reported feeling isolated and less connected to their instructors.

Algorithmic bias is equally concerning in the African context, where datasets often fail to represent the continent's diverse populations. This can result in discriminatory outcomes that exacerbate existing educational inequalities (Birhane, 2021). For instance, AI tools designed for student assessments may disadvantage learners from marginalized communities due to linguistic or cultural biases (Mhlanga, 2023). Despite these challenges, there is limited empirical research addressing how algorithmic bias impacts academic inclusivity in African universities, underscoring a critical knowledge gap (Abebe et al., 2020).

In Kenya, the adoption of artificial intelligence (AI) in education is progressing, propelled by governmental efforts and private investments. Universities increasingly use AI for tasks such as research, administrative efficiency, and personalized learning. Tools like plagiarism detection software and AI-enhanced learning platforms have gained prominence, offering solutions for improving academic integrity and engagement. However, concerns about the ethical implications of AI, including data privacy, bias, and accessibility, remain underexplored and require comprehensive policy frameworks (Eduplace, 2024; Sokodirectory, 2024; Techish Kenya, 2024).

The Kenya Education Network (KENET) has highlighted the importance of AI in transforming education and research. Nevertheless, challenges such as inadequate infrastructure, a shortage of skilled AI professionals, and the digital divide hinder full integration. There is a growing call for investment in AI training for educators and infrastructure to ensure equitable and effective use of these technologies (Techish Kenya, 2024; Sokodirectory, 2024).

Data privacy is a significant concern in Kenyan universities, where the regulatory landscape is still evolving. Although the enactment of the Data Protection Act (2019) marked a milestone in safeguarding personal information, compliance among educational institutions remains low. Studies by Njuguna et al. (2023) reveal that only 30% of Kenyan universities have implemented data protection measures, leaving the majority vulnerable to breaches. Moreover, there is limited awareness among students and faculty about their data rights, highlighting a gap in education and advocacy.

The student-teacher relationship in Kenyan universities is also being reshaped by AI technologies. Tools such as virtual tutors and automated feedback systems are becoming commonplace, raising questions about their impact on interpersonal interactions. While these tools offer benefits, such as increased efficiency and scalability, they may also erode the relational aspects of education. Research by Otieno et al. (2023) found that students in Kenyan universities using AI tools reported lower levels of satisfaction with their learning experiences compared to those in traditional settings. This suggests a need for balanced integration strategies that preserve the human element of education.

Algorithmic bias presents another ethical challenge in Kenyan universities. AI systems deployed in education often rely on datasets that are not representative of the country's diverse student population, leading to biased outcomes. For example, a study by Wambugu and Mutai (2023) found that AI-powered assessment tools in Kenyan universities disproportionately disadvantaged students from rural areas, who often lacked access to digital resources.

Data Privacy and Security

Artificial Intelligence (AI) is transforming university education globally, introducing innovative tools for personalized learning, efficient administrative systems, and advanced research capabilities (Chen et al., 2023). However, its application raises significant ethical concerns, particularly regarding data privacy, algorithmic bias and depersonalization of education. The reliance on AI-driven systems to collect and process vast amounts of personal data exposes students to potential breaches and misuse, especially in regions like Kenya, where regulatory frameworks are still evolving. Weak data protection measures not only jeopardize privacy but also erode trust, discouraging

Article DOI: https://doi.org/10.37284/eajes.8.1.2583

students and educators from fully engaging with AI technologies (Ochieng & Wanjiku, 2022).

Algorithmic bias further complicates AI adoption, as poorly designed systems can perpetuate inequalities, disadvantaging underrepresented groups and exacerbating existing educational disparities (Birhane, 2021). For instance, biased grading algorithms may penalize students from marginalized communities due to unrepresentative training data. Moreover, over-reliance on AI teaching tools risks diminishing the relational aspects of education, which are central to African pedagogical values.

AI technologies rely on extensive data collection for personalization and efficiency. These systems collect various forms of data, including demographic information, academic records, and behavioural patterns. According to Smith and Johnson (2022), AI systems in universities often use predictive analytics to identify at-risk students and recommend interventions. However, this reliance on data collection introduces significant risks to student privacy, especially if these systems lack robust security measures or clear data usage policies.

Students may not fully understand how their data is collected, stored, and utilized. Gazi and Arif (2021) note that many AI platforms operate with opaque algorithms, making it challenging for students to consent to data sharing meaningfully. This lack of transparency creates an imbalance of power, as students may unknowingly expose sensitive information that could be misused or accessed by unauthorized parties.

Universities often struggle to safeguard student data, leading to potential breaches. Recent incidents of cyber-attacks targeting universities highlight the vulnerability of educational institutions to data theft. In 2023, over 20% of global universities experienced significant data breaches, compromising student records, financial information, and research data (Kumar & Patel, 2023)

A report by the Kenyan Data Protection Agency (2022) revealed that university systems in Kenya face an increased risk of cyber-attacks due to inadequate funding for cyber security measures and a lack of skilled personnel. These vulnerabilities raise ethical concerns, as students may suffer identity theft, financial loss, or reputational damage from exposed data.

Informed consent is a critical principle in ethical data practices. However, AI systems in universities often bypass meaningful consent processes, collecting and processing data without explicit approval. According to Taylor et al. (2023), many students are unaware of the extent to which their data is shared with third-party providers or used for purposes beyond their education. This lack of autonomy is particularly concerning in the Kenyan context, where digital literacy levels among university students vary significantly (Nyamweya, 2023).

AI surveillance technologies, including facial recognition, raise significant ethical concerns regarding privacy and potential algorithmic biases. For instance, facial recognition systems often exhibit discriminatory inaccuracies, particularly against individuals from minority ethnic backgrounds, due to biased training data. Such technologies have been scrutinized for normalizing surveillance and undermining democratic values, as they pose challenges to human rights and ethical standards in educational contexts (Frontiers, 2023; APA Divisions, 2024).

Furthermore, profiling students based on their data may lead to stereotyping and unequal treatment. A study by Okeke and Chukwu (2023) found that AI systems in African universities sometimes label students as "low performers" based on historical data, creating self-fulfilling prophecies. This form of algorithmic bias undermines students' rights to fair treatment and perpetuates inequalities.

The ethical management of student data requires comprehensive regulatory frameworks. While Kenya enacted the Data Protection Act in 2019, its implementation in the education sector remains limited. According to Ochieng and Wanjiku (2022), most Kenyan universities lack data protection officers or policies aligned with the Act.

AI-Driven Teaching tools

The integration of artificial intelligence (AI) into education is profoundly transforming teaching and learning practices. AI-powered tools such as personalized learning systems, chatbots, and

Article DOI: https://doi.org/10.37284/eajes.8.1.2583

automated grading mechanisms streamline tasks, allowing educators to focus more on meaningful engagement with students. These technologies enhance efficiency, foster tailored learning experiences, and improve overall outcomes. However, they also introduce challenges, such as potential depersonalization of the student-lecturer relationship and ethical concerns regarding their use (World Economic Forum, 2024; SpringerOpen, 2024).

AI teaching tools have the potential to streamline communication between students and lecturers. For instance, chatbots can address routine student queries, leaving lecturers more time to engage in complex academic discussions (Lu et al., 2020). Personalized learning platforms provide students with tailored learning resources, enabling independent study and reducing the need for constant lecturer intervention (Holmes et al., 2019). However, the reduction in direct interactions may weaken the traditional mentoring role of lecturers, which is pivotal in fostering critical thinking and ethical judgment among students.

AI tools can promote efficiency in teaching and learning, thereby improving the lecturer's ability to focus on mentorship and advanced instruction (Selwyn, 2021). Automated grading systems save time and ensure impartiality in assessments, minimizing potential biases and fostering fairness (Alam et al., 2022). Additionally, AI-driven analytics can provide lecturers with insights into student performance, enabling them to tailor support to individual needs.

Despite these advantages, the overreliance on AI teaching tools may create a depersonalized learning environment. Researchers argue that AI tools could lead to diminished interpersonal connections between lecturers and students, undermining trust and communication (Kumar & Sharma, 2021). In Kenya, where cultural norms emphasize personal interaction and mentorship in education, the adoption of AI tools could disrupt traditional practices (Muthomi & Muthee, 2023).

Algorithmic Bias

Artificial intelligence (AI) has increasingly permeated university education globally, transforming teaching, learning, and administrative processes. However, algorithmic bias in AI systems poses significant challenges to academic inclusivity, particularly in contexts such as Kenyan universities. Algorithmic bias arises when AI systems produce skewed results due to the use of incomplete, unrepresentative, or prejudiced data during training, leading to the marginalization of certain groups (Mehrabi et al., 2021).

Algorithmic bias occurs when AI algorithms reflect human prejudices or systemic inequalities embedded in the data (Zou & Schiebinger, 2018). Such biases are amplified when training datasets lack diversity or fail to consider marginalized populations adequately. Studies have shown that biases in AI systems disproportionately affect underrepresented groups, exacerbating existing social disparities (Noble, 2018).

In university education, algorithmic bias can manifest in several ways, including unfair admission processes, inequitable grading systems, and unequal access to resources. For instance, Carnevale et al. (2020) highlighted that predictive algorithms used in admissions often favour students from affluent backgrounds while disadvantaging those from underprivileged communities.

Academic inclusivity emphasizes equitable access to learning opportunities, regardless of students' socio-economic, cultural, or physical backgrounds (UNESCO, 2021). Mauti et.al. (2023) defines inclusivity as an ethical factor which requires the provision of equal access to educational opportunities and resources to all learners. In university settings, inclusivity is critical for fostering diversity, innovation, and social cohesion. However, the integration of biased AI systems undermines these goals by perpetuating exclusionary practices. Algorithmic biases undermine Kenya's efforts to achieve educational inclusivity by disadvantaging marginalized groups, such as rural students, through unrepresentative datasets and discriminatory outcomes. This perpetuates existing inequalities, hindering equitable access to education (Birhane, 2021; Wambugu & Mutai, 2023). Addressing these biases is essential for fostering fairness and diversity in higher education.

Article DOI: https://doi.org/10.37284/eajes.8.1.2583

Research by Eubanks (2018) demonstrated that biased AI systems often reinforce existing inequalities, particularly in contexts with limited regulatory oversight. For Kenyan universities, this issue is compounded by infrastructural and policy gaps that hinder the effective governance of AI technologies.

AI-driven admissions systems are increasingly adopted to streamline application reviews and predict student success. However, studies indicate that these systems often disadvantage students from marginalized groups due to biased training datasets (Binns, 2018).

Algorithmic bias in learning management systems (LMS) can result in unequal distribution of educational resources. Research by Kay et al. (2019) found that biased algorithms often allocate fewer resources to students perceived as "low achievers," thereby perpetuating academic disparities.

AI-powered grading systems, while efficient, are prone to biases that unfairly penalize certain groups of students. Noble (2018) noted that such systems often fail to account for cultural and linguistic diversity, leading to inaccurate assessments. Algorithmic bias also impacts students with disabilities, as AI systems often lack the adaptability needed to accommodate diverse learning needs (Goggin & Newell, 2020). Most studies on algorithmic bias focus on Western contexts, with minimal attention to African settings (Mhlambi, 2020).

CONCLUSION

The exploration of the ethical implications of artificial intelligence (AI) in university education, underscores the transformative yet complex nature of AI integration in higher education. As AI continues to redefine learning landscapes globally, its application in resource-constrained environments such as Kenya presents both opportunities and challenges that demand nuanced understanding and proactive engagement.

The reviewed literature highlights critical concerns surrounding data privacy, algorithmic bias, and the evolving dynamics of student-lecturer relationships. While AI promises unprecedented efficiency and personalization in education, it simultaneously raises significant ethical dilemmas. The potential erosion of trust due to inadequate data protection measures, the depersonalization of education, and the marginalization of vulnerable groups through biased algorithms necessitate a deliberate and ethical approach to AI adoption.

Grounded in Kantian deontological ethics, which emphasizes duty and the inherent morality of actions, this study advocates for a duty-bound framework that prioritizes the dignity, autonomy, and inclusivity of all educational stakeholders. In the context of Kenyan universities, AI integration must preserve cultural and pedagogical values central to the nation's educational ethos. These include the mentorship and relational learning dynamics inherent in African traditions, where interpersonal connections between students and lecturers are pivotal for personal and academic growth. AI technologies should enhance, rather than erode, these human-centred interactions.

Furthermore, inclusivity and equity must remain at the forefront of AI implementation, ensuring that all students regardless of socioeconomic or geographical background have equal access to learning opportunities. Cultural sensitivity is also critical, requiring AI tools to adapt to Kenya's linguistic and multicultural diversity.

The ethical stewardship of AI must align with values of transparency, accountability, and integrity, reflecting Kenya's commitment to ethical practices in education. By embedding these values, universities can harmonize AI adoption with Kenyan cultural and pedagogical principles, fostering an education ecosystem that is not only technologically advanced but also equitable and human-centred.

By addressing these challenges through robust policy frameworks, universities in Kenya can mitigate the ethical risks associated with AI integration while maximizing its potential benefits. To address data privacy concerns, universities should implement policies mandating the appointment of data protection officers, the regular auditing of AI systems for compliance with the Data Protection Act (2019), and the development of transparent data governance frameworks that outline

Article DOI: https://doi.org/10.37284/eajes.8.1.2583

how student data is collected, stored, and used. To tackle algorithmic bias, institutions should adopt policies requiring the use of diverse and representative datasets during the training of AI models, periodic evaluations to identify and rectify biases and the inclusion of fairness and inclusivity metrics in AI assessments.

Additionally, targeted capacity-building initiatives are essential. Training programs should be developed for educators to enhance their digital literacy and equip them with skills to integrate AI tools ethically and effectively in their teaching. IT personnel need specialized training on data protection protocols and advanced cyber security measures to safeguard institutional data. Policymakers should undergo workshops on formulating AI-related regulations that align with global best practices while addressing local challenges. These efforts will ensure that all stakeholders are well-prepared to navigate the complexities of AI integration, fostering an equitable and culturally sensitive educational ecosystem.

REFERENCES

Abebe, R., Barocas, S., Kleinberg, J., Levy, K., Raghavan, M., & Robinson, D. (2020). Roles for computing in social change. *Communications of the ACM, 63*(3), 54–61. https://doi.org/10.1145/3376898

Adedokun, O., et al. (2022). *AI and the Future of Education in Africa*. African Journal of Education Technology.

Alam, M., Chandrasekaran, K., & Kannan, K. (2022). The role of artificial intelligence in fair grading and assessment: Implications for higher education. *Educational Technology Research and Development, 70*(4), 913–929. https://doi.org/10.1007/s11423-022-10110-3.

APA Divisions. (2024). *Ethical artificial intelligence: Applications and challenges*. Retrieved from APA Divisions.

Binns, R. (2018). Fairness in machine learning: Lessons from political philosophy. *Proceedings of the 2018 Conference on Fairness, Accountability, and Transparency*, 149–159.

Birhane, A. (2021). Algorithmic injustice: A relational ethics approach. *Patterns, 2*(2), 100205. https://doi.org/10.1016/j.patter.2021.100205

Carnevale, A. P., Fasules, M. L., Quinn, M. C., & Peltier Campbell, K. (2020). *Born to win, schooled to lose: Why equally talented students don't get equal chances to be all they can be.* Georgetown University Center on Education and the Workforce.

Chen, L., Wang, H., & Lin, Z. (2023). The transformative role of artificial intelligence in higher education. *International Journal of Educational Technology*, 19(2), 89-102.

Chui, M., et al. (2023). *AI Ethics in Education: A Global Overview*. Journal of Educational Innovation.

Eduplace. (2024). *The impact of AI on Kenyan education: A world of opportunities and challenges*. Retrieved from Eduplace.

Eubanks, V. (2018). *Automating inequality: How high-tech tools profile, police, and punish the poor.* St. Martin's Press.

Frontiers. (2023). *Beyond surveillance: Privacy, ethics, and regulations in face recognition technology*.

Gazi, S., & Arif, R. (2021). Algorithmic opacity and student privacy: Ethical challenges of AI in education. *AI Ethics Review*, 9(4), 301-315.

Goggin, G., & Newell, C. (2020). Digital disability: The social construction of disability in new media. *Critical Studies in Media Communication*, 20(1), 67–80.

Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial Intelligence in education: Promises and implications for teaching and learning*. Boston: Center for Curriculum Redesign.

Holmes, W., Bialik, M., & Fadel, C. (2021). *Artificial intelligence in education: Promises and implications for teaching and learning*. Center for Curriculum Redesign.

Article DOI: https://doi.org/10.37284/eajes.8.1.2583

Kassa, D., & Desta, T. (2022). *Data Protection in African Universities: Challenges and Opportunities*. Addis Ababa University Press. Lynch, R., et al. (2023). *The Impact of AI on Student-Teacher Relationships*. International Journal of Educational Psychology.

Kay, J., Reimann, P., Diebold, E., & Kummerfeld, B. (2019). MOOCs: So many learners, so much potential... *IEEE Intelligent Systems*, 28(3), 70–77.

Kenyan Data Protection Agency. (2022). Annual report on data protection and cybersecurity in Kenya.

Kumar, A., & Patel, M. (2023). Cybersecurity risks in higher education: Trends and implications. *Cybersecurity in Education Journal*, 7(1), 45-63.

Kumar, R., & Sharma, S. (2021). AI-driven teaching tools: Exploring the effects on teacher-student relationships. *Journal of Educational Technology Systems, 50*(1), 89–108. https://doi.org/10.1177/00472395211013022

Lu, X., Zhang, Y., & Chen, M. (2020). Enhancing student-lecturer communication with AI technologies: A case study. *Computers & Education, 151*, 103875. https://doi.org/10.1016/j.compedu.2020.103875

Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2016). *Intelligence Unleashed: An argument for AI in education*. Pearson Education.

Mauti, J. M., Pacho, T., & Nyatuka, B. (2023). Effect of Students' Inclusivity on the Efficacy of 100% Transition in Public Secondary Schools in Kisii County, Kenya, East African Journal of Education Studies, 6(1), 196-210. ISSN 2707-393909. https://doi.org/10.37284/eajes.6.1.1108

Mehrabi, N., Morstatter, F., Saxena, N., Lerman, K., & Galstyan, A. (2021). A survey on bias and fairness in machine learning. *ACM Computing Surveys (CSUR)*, 54(6), 1–35.

Mhlambi, S. (2020). From rationality to relationality: Ubuntu as an ethical and human rights framework for artificial intelligence governance. *Global Media Journal: African Edition*, 12(1), 25–39

Mhlanga, D. (2023). Artificial intelligence in higher education in Africa: Challenges and opportunities. *Education Sciences, 13*(2), 123. https://doi.org/10.3390 /educsci13020123

Moor, D. (2022). *Transparency and Accountability in AI Systems*. Cambridge University Press.

Muthomi, T., & Muthee, J. (2023). Cultural dimensions of education in Kenya. *African Education Review*, 15(4), 123–138.

Nguyen, D., Riza, M., & Kapoor, A. (2020). Ethical considerations of AI implementation in educational systems: A systematic review. *Journal of Educational Technology*, 19(2), 45–58.

Njuguna, J., et al. (2023). *Data Privacy in Kenyan Universities: An Emerging Challenge*. University of Nairobi Press.

Noble, S. U. (2018). *Algorithms of oppression: How search engines reinforce racism.* NYU Press.

Nyamweya, E. (2023). Digital literacy levels among Kenyan university students: A case study of Kisii County. *Kenya Journal of Digital Education*, 8(2), 103-118.

Obermeyer, Z., et al. (2023). *Algorithmic Bias in Education: A U.S. Perspective*. Harvard Educational Review.

Ochieng, P., & Adebayo, T. (2023). *AI and Traditional Pedagogy in Africa: A Comparative Study*. African Educational Research Journal.

Ochieng, P., & Wanjiku, M. (2022). Data protection in Kenya's education sector: Progress and challenges. *African Journal of Education Policy*, 12(1), 58-76.

Okeke, U., & Chukwu, E. (2023). Algorithmic bias in African universities: A critical analysis. *African Journal of Artificial Intelligence Ethics*, 6(3), 190-204.

Otieno, S., et al. (2023). *AI in Kenyan Universities: Opportunities and Challenges*. Journal of African Higher Education.

Article DOI: https://doi.org/10.37284/eajes.8.1.2583

Selwyn, N. (2021). Digital technology and the future of higher education. *Studies in Higher Education, 46*(8), 1661– 1673. https://doi.org/10.1080/03075079.2021.1886069

Sharma, P., Singh, R., & Gupta, V. (2023). AI-driven innovations in education: Current trends and future challenges. *AI & Society*, 38(1), 34–56.

Smith, T., & Johnson, L. (2022). Ethical considerations in AI-driven education systems. *International Journal of Educational Ethics*, 19(3), 201–215.

Sokodirectory. (2024). *The impact of AI on education in Kenya: Benefits, risks and policy implications*. Retrieved from Sokodirectory.

SpringerOpen. (2024). *Exploring the impact of artificial intelligence in teaching and learning*. Retrieved from https://educationaltechnologyjournal.springeropen.com

Taylor, R., Hall, S., & Clarke, L. (2023). Informed consent in the age of AI: A study of higher education institutions. *AI and Ethics Journal*, 13(4), 134-152.

Techish Kenya. (2024). *Kenyan universities push for enhanced AI infrastructure in higher education*. Retrieved from Techish Kenya.

UNESCO. (2021). *Reimagining our futures together: A new social contract for education.* UNESCO.

UNESCO. (2022). *Artificial intelligence and education: A guidance for policy-makers*. UNESCO Publishing.

Wambugu, E., & Mutai, J. (2023). *Algorithmic Bias and Academic Equity in Kenya*. Egerton University Press.

World Economic Forum. (2024). *The future of learning: AI is revolutionizing education 4.0*. Retrieved from https://www.weforum.org

Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education: From 2007 to 2018. *International Journal of Educational Technology in Higher Education*, 16(1), 39.

Zou, J., & Schiebinger, L. (2018). AI can be sexist and racist—it's time to make it fair. *Nature*, 559(7714), 324–326.

