ETHICS AND ARTIFICIAL INTELLIGENCE IN ACADEMIA

Eng. Ps. KUDZAI CARLOS CHIKUMBIRIKE & Dr. CONSTANCE CHIFAMBA

Organization: North Zimbabwe Conference of the Seventh Day Adventist Church.
ZIMBABWE. Contacts: +263773562931; +263774818642

ABSTRACT

The moral behaviors that govern a person's activities are potentially under threat as Artificial Intelligence (AI) develops in the context of other emerging technologies. Central to ethics is information that regulates or helps people to classify acts as wrong or right. The purpose of this study is to carry out a systematic review of the ethical use of AI in education. The theoretical frameworks used are the Technology Acceptance Model (TAM) and the 5 ethical principles beneficence, non-maleficence, autonomy, justice, and explicability. Literature was reviewed using a variety of search engines and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework for reviewing relevant available literature. The inclusion and exclusion criteria are based on peer review, relevancy to the topic, and the current article (less than 10 years old). Findings indicate that educational administrators need to develop policies that enhance educational equity, while national governing bodies institutionalize regulations to ensure the security of educational data as it relates to using AI technology in academia. Since learning is now ubiquitous, educators need to upskill themselves with technological competencies as well as equip their learners with strategies to acquire AI literacy required in the information age and the necessary skills to excel in a future labor-market increasingly dominated by AI so they remain on the cutting edge. To reap the most from the technological advancements as per the Technology Acceptance Model, users consider the risks, benefits, and ease of use. In this case, benefits from the use of AI are many, these include conveniences and prospects. But this comes accompanied by risks. Hence it is also crucial to assess the ethical risks, and consider the possible remedies before embarking on using AI. The study recommends responsible use of AI. The responsible authorities such as the Global Partnership on Artificial Intelligence (GPAI) and UNESCO need to collaborate to manage the growing concerns and adopt the recommendations on the Ethics of Artificial Intelligence (UNESCO, 2023).

Keywords: Artificial intelligence; ethics; Academia; risk

1.0 INTRODUCTION

Artificial intelligence (AI) is a field of study that combines the applications of machine learning, algorithm production, and natural language processing. Applications of AI have been around for years. When doing a Google search, reading emails, getting a doctor's appointment, asking for driving directions, or getting movie and music recommendations, most people are constantly using the applications of AI and its assistance (Louw, 2023). Historical trends of AI applications include in the field of Business marketing and advertising, creating content to suit consumer interests, in the entertainment industry, in Medicine and healthcare sector that has been using generative AI in clinical research and planning personalized treatment and

medical ethics and imaging (Wang et al., 2021). In Education, Artificial Intelligence apps have been used to support learners or locate and manage changes in learner engagement especially in flipped classrooms, hybrid learning as well as in asynchronous and synchronous learning for students in different locations. (Boulay, 2020; Reiss, 2021). As a Pedagogical tool, AI has been used to provide tutorials to students virtually. Such technological advancements utilizing Artificial Intelligence lighten the teachers' workload, freeing them to focus more on research and innovative development (Hwang et al., 2020)

However, with all the innumerable benefits, AI has its downside when it comes to the risks involved in its utilization (Akinwalrere & Ivanov, 2022). There is a need to follow a well-structured ethical Framework to optimize the benefits while avoiding pitfalls and risks. Such an ethical Framework will act as a filter for making appropriate decisions about the use of AI in academics. There is a very close relationship between Artificial intelligence and Ethics. According to the Merriam-Webster's Dictionary ethics is a noun meaning the discipline dealing with what is good and bad and with moral duty and obligation, or a set of moral principles governing an individual or a group. The meaning of ETHIC is a set of moral principles: a theory or system of moral values https://www.google.com/search?q=ethics+definition+merriam+webster&oq=Ethics+merriam +webster&gs. The issue of deciding right and wrong behaviour is complicated when it comes to the use of artificial Intelligence tools. Care must be taken when considering the data sources, data users, and data accuracy to avoid disadvantaging under-represented populations or advantaging over-represented groups. Companies benefit from artificial intelligence as it increases the efficiency and effectiveness of their products and services (Wen & Holweg, 2023). Artificial intelligence has also been used in manufacturing and scientific research, automating processes in the financial service sector, and augmenting human decision-making in medical and legal contexts (Wen & Holbweg). In addition, Artificial Intelligence is also used to provide emergency rescue facilities during crises, eg. Using programmed rescue drones that can enter very narrow areas that may be difficult for ordinary rescue planes to reach (Waheeb, 2023). In academia, Artificial intelligence may be used as a quick source of basic information for both students and lecturers. Despite all these benefits, there are several challenges associated with use of Artificial Intelligence. Hence, consumers and programmers of artificial Intelligence programs must be aware of the ethical and moral implications of the applications of AI. Responsible use of AI requires adhering to ethical guidelines that ensure scientific honesty and moral responsibility, for the security of societies and sustainable development (Waheeb, 2023).

1.1 Statement of problem

Technological advancements are all around us globally. Like any technological development, Artificial Intelligence is here to stay, yet it has its pros and cons. While the presence of AI has many transformational impacts in other sectors such as industry, health and economy, it has a drastic impact on the educational sector. Artificial intelligence has transformed the terrain of academia and promises to continue to transform the landscape of academics. This transformation is generally accompanied by both negative and positive impacts. There are benefits and risks associated. With the use of Artificial Intelligence. Wisdom will guide us to minimize the risks and maximize the benefits. Several Authorities and governing bodies have met under the guidance of UNESCO to formulate basic principles for the ethically appropriate

use of AI. Although most leaders are aware of basic ethical principles such as privacy, transparency, beneficence, justice, fairness, non-maleficence, trust, and autonomy, (Gartner and Krasna, 2023). However, it is still difficult to come to a consensus as to the best ethical practices since different leaders subscribe to different ethical theories. What then is the best way forward? What are the guiding principles for the effective use of AI in Education?

This systematic review revealed gaps in the literature concerning one specific Ethical framework to be used as a guiding instrument by academic institutions. This study seeks to review different peer-reviewed literature on the best recommendations for the ethical utilization of AI in education. Most AI developers approach this ethical issue from a Utilitarian perspective, hence, monopolies, such as Google, consider the number of people who benefit. Hence, their decisions were rooted in utilitarian and teleological perspectives, so to them, if harm comes to a smaller group of people than those who benefit, the companies would still be able to justify their decisions through utilitarianism. Besides, some of the negative social impacts of AI may not be reliably predicted. Some of the long-term negative impacts of AI may not be known yet, as Holmes, et al, 2021 put it, these are "unknown knowns" (Holmes, et al 2021).

1.2 Research Questions

The objectives of this study are to;

1. What are the benefits of using AI in Education?
2. What are the ethical risks associated with using of AI in Education?
3. How can the risks of utilizing AI in Education be minimized?

2.0 LITERATURE REVIEW

Several ethical issues need to be considered when deciding to use AI. Such issues include privacy, transparency, beneficence, justice, fairness, non-maleficence, trust, and autonomy, (Gartner and Krasna, 2023). The major challenges associated with programming computers and other smart devices to do the work as humans do are many, the foremost of which is the inability of the inventors of these machines to interpret the information gained by the machines they invented (Wen & Holweg, 2023). Thus, AI may be compared to good and bad (depending on how it is used) tools like fire. Fire has many benefits, but if it is not used wisely it may destroy vast forests, and huge buildings, and worse still, it may destroy lives. Similarly, AI as a tool may benefit if properly used, yet it may be dangerous to misuse AI if inappropriately used. If used unethically, AI may result in academic institutions losing their credibility, the expulsion of students and companies closing down many employees losing jobs, families struggling for survival, and many breadwinners losing their employment. However, this does not mean Artificial Intelligence cannot be used at all. Just like a knife or a fire, its proper use can be marked with a host of blessings whereas if properly used, it may be very dangerous. The bottom line is that everyone needs to know how to use AI in the right way (Zhang, Bo, 2023). Yet, the dicey challenge is that there is a fine line between the right way and the wrong way of using ChatGPT, actually, this fine line is often blurred (Zhang, Bo. 2023). Awareness of the moral responsibility resulting from the use of artificial intelligence is sometimes clearer when we see its direct impact on people and the extent of the benefit enjoyed by society as a result of the use of modern technology to serve the world (Waheeb, 2023)

Several authoritative bodies have come up with AI regulations and principles (Kahn, et al, 2022). However, they seem not to come to a consensus. Some scholars argue that all these are meaningless principles that are contested or incoherent, making them difficult to apply; they are isolated principles situated in an industry and education system that largely ignores ethics; and they are toothless principles that lack consequences and adhere to corporate agendas (Munn, 2023)

On the other hand, other scholars argue that New technology should not be banned or condemned because of its potential misuse. Instead, there should be open, honest, and earnest dialogue among all parties involved to ensure that the technology is applied appropriately and is continuously enhanced. (Kahn et al 2023). The newspaper stressed that software engineers and developers of artificial intelligence should take the ethical implications of their work seriously. So, tech companies need to stop acting as if everything illegal is okay, and that if technology can be considered morally neutral, its makers cannot be. Still, other scholars opine that use of AI tools in educational environments provides many benefits to teachers and students (Kucuk, et al. 2024). However, the use of AI in education also raises some ethical concerns at Ethics and Artificial intelligence is of great benefit to the world of academia,

Studies (Kahn et al, 2023) indicate that there are several challenges associated with the use of AI. These include Transparency, privacy, accountability, and fairness. These four are identified as the most common AI challenges. In addition, lack of adequate ethical knowledge and vague principles are reported among the significant challenges for considering ethics in Artificial Intelligence Tools' Usage of artificial intelligence as a technology is a strong tool that can help us with a variety of tasks, it should be seen as an added advantage to provide a complimentary resource that enhances one's understanding of the subject rather than replacing the researcher's abilities. This may turn out to stifle innovativeness and creativity among researchers and students. Interestingly, those who program Artificial intelligence resources are people who use their brains to develop machines that use algorithms. Hence, to depend solely on Artificial intelligence may not be the best way to attain academic growth and development.

Responsible authoritative bodies such as UNESCO have developed ethical codes of AI use based on the four basic building blocks of an ethical attitude towards AI in education (autonomy, privacy, trust and responsibility). Understanding the concepts of AI and their ethical implications is a condition for acting in accordance with them and for their introduction in education. However awareness of the moral responsibility resulting from the use of artificial intelligence is sometimes clearer when we see its direct impact on people and the extent of the benefit enjoyed by society as a result of the proper use of modern technology to serve the world (Waheeb, 2023). Although several authoritative bodies have come up with AI regulations and principles other scholars argue that all these are meaningless principles that are contested or incoherent, making them difficult to apply; they are isolated principles situated in an industry and education system that largely ignores ethics; and they are toothless principles which lack consequences and adhere to corporate agendas. For these reasons, some people argue that AI ethical principles are of limited value, failing to mitigate AI technologies' racial, social, and environmental damages in any meaningful sense. The result is a gap between high-minded principles of AI use and what actually happens on the ground (Munn, 2023).

2.1 Theoretical framework

There are always some people who resist change. They do not easily get convinced when new technology is introduced. This study is supported by the technology Acceptance Model (TAM).

2.3 Technology Acceptance Model (TAM)

Although many people tend to resist change, particularly embracing technology. There are great benefits in embracing technology and harnessing it to maximize the benefits. The advantages of adopting technology include its speed and cost-effectiveness. Those who tend to resist accepting new technology may not be fully aware of the benefits associated with it (Alzubi, et al, 2018).

Technology Acceptance Model (TAM) explains why users accept or reject information technology based on their TRA adaptability (Finney Davis, 1989). The consumer considers the ease of use, and develop a negative or positive attitude. When a consumer develops a positive attitude, they also develop trust and the intention to adopt the new technology. Perceived usefulness and perceived ease of use are the two cognitive variables that TAM proposes. Modern technology incorporating effective method such as internet for online surfing and search engines make the TAM better acceptable especially with the young generation and tourists form developed countries. Technology Acceptance Model (TAM) analyses how people accept new technology based on ease of use and usefulness. The Technology Acceptance Model including the intention to use Technplogical services (Susanti & Astuti, 2019). An attitude of trust has a high impact on the intention to use technology for desired products and services.

3.0 METHODOLOGY

The researchers carried out a systematic literature review following the PRISMA method. The inclusion criteria for the literature searched using several search engines such as Google Scholar, Scopus, are;

a. Peer-reviewed journals from reputable publishers such as Science Direct, Researchgate, Springer, Tailor& Francis,
b. From 2018-2024 (within the last 7 years),
c. The key terms used in searching were; Artificial intelligence, ethics, educational technology, and emerging technologies. In addition, Dictionaries, encyclopeadias and global regulatory authorities such a UNESCO, WHO, OECD, were also used to filter and narrow down the scope of the study. These keywords were used to filter, 26 700 000, down to 135 000 and later down to 44 then eventually to 30. This was followed by a content analysis of selected 44 papers. From this wide spectrum of systematic review 30 articles. These 30 are summarized in the literature matrix (See Table 1).

Table 1: Literature Review Matrix

	Article	Year	Theme
1	Akgun S, Greenhow C. Artificial intelligence in education: Addressing ethical challenges in K-12 settings. AI Ethics. 2022;2(3):431-440. doi:	1922	Ethics Education, Ethical Challenges

	10.1007/s43681-021-00096-7. Epub 2021 Sep 22. PMID: 34790956; PMCID: PMC8455229.		
2	Akinwalrere, S. N. & Ivanov, V. T. (2022) Artificial Intelligence in Higher Education: Challenges and Opportunities February 202212(1):1-15 DOI:10.33182/bc.v12i1.2015	2022	AI use to ensure Equity and quality higher education
3	Ashok, M, Madan , R. Anton Joha, A. & Sivarajah, U. (2022). Ethical framework for Artificial Intelligence and Digital technologies	2022	Ethical Framework for the use of AI
4	Azaria, A. ; Azoulay, R. & Shulamit Reches; ChatGPT is a Remarkable Tool—For Experts. Data Intelligence 2024; 6 (1): 240–296. doi: https://doi.org/10.1162/dint_a_00235 https://direct.mit.edu/dint/article/6/1/240/118046/Chat GPT-is-a-Remarkable-Tool-For-Experts	2024	strengths and limitations of Chat GPT
5	Bu, O. (2021). Ethical Risks in Integrating Artificial Intelligence into Education and Potential Countermeasures Science Insights 41(1):561-566DOI: 10.15354/si.22.re067	2021	Ethical risks OF AI in Education.
6	Boulay, B.D. (2023). Artificial Intelligence in Education and Ethics January 2023 DOI:10.1007/978-981-19-2080-6_6 • In book: Handbook of Open, Distance and Digital Education (pp.93-108)	2023	Benefits of AI in Education Ethical guidelines for use
7	Drolet, MJ., Rose-Derouin, E., Leblanc, JC. et al. Ethical Issues in Research: Perceptions of Researchers, Research Ethics Board Members and Research Ethics Experts. J Acad Ethics 21, 269–292 (2023). https://doi.org/10.1007/s10805-022-09455-3.	2023	Ethical guidelines in research
8	Foltynek, T., Bjelobaba, S. Glendinning, I., Zeenath Reza Khan,Z.R., Santos, R. Pavletic, P. & Kravjar, J. https://edintegrity.biomedcentral.com/articles/10.1007/s40979-023-00133-4 ENAI Recommendations on the ethical use of Artificial Intelligence in Education • International Journal for Educational Integrity volume 19, Article number: 12 (2023)	2023	Opportunities and Challenges of AI Recommendations
9	Gartner, S. & Krasna M.(2023) The post-COVID period drastically Ethics of Artificial Intelligence in Education• June 2023	2023	Emergence of AI use during and after the COVID-19 pandemic.
10	Grant, N., Weise, K.: In A.I. Race, Microsoft and Google Choose Speed Over Caution. The New York Times, Apr. 07, 2023. https://www.nytimes.com/2023/04/07/technology	2023	Risks of hurring to implement AI, Need to take caution

	/ai-chatbots-google-microsoft.html, Accessed 20 Aug 2023.		
11	Han, B. Nawaz, S. Buchanan, G. & McKay, D. Ethical and Pedagogical Impacts of AI in Education https://doi.org/10.1007/978-3-031-36272-9_54 https://dl.acm.org/doi/10.1007/978-3-031-36272-9_54	2023	Negative and positive impacts of AI on Education
12	Holmes, W., Porayska-Pomsta, K., Holstein, K. et al. Ethics of AI in Education: Towards a Community-Wide Framework. Int J Artif Intell Educ 32, 504–526 (2022). https://doi.org/10.1007/s40593-021-00239-1	2023	Need to collaboratively develop a holistic framework
13	Karagkouni E. & Sotiropoulou, P. (2023). ARTIFICIAL INTELLIGENCE IN EDUCATION: ETHICAL CONSIDERATIONS November 2023, DOI:10.21125/iceri.2023.0742 https://www.researchgate.net/publication/376102905_	2023	Benefits of using AI Pedagogical utilization,.
14	Khan, A.A (2022). Evaluation and Assessment in Software Engineering 2022 Gothenburg Sweden June 13 - 15, 2022 ISBN: 978-1-4503-9613-4 Published: 13 June 2022,	2022	Application of AI in engineering
15	Küçük, E. Cincil, F. & Karal, Y. (2024) A systematic review of the ethical use of artificial intelligence (AI) in education • May 2024, DOI:10.21203/rs.3.rs-4370610/v1 • LicenseCC BY 4.0 10.21203/rs.3.rs-4370610/v1	2024	Ethical uses of AI in Education
16	Levene A (2023) Artificial intelligence and authorship. COPE. 23 February 2023. Available Online. URL - https://publicationethics.org/news/artificial-intelligence-and-authorship	2023	AI tools value to authors and publishers-limitation
17	Munn, L. The uselessness of AI ethics. AI Ethics 3, 869–877 (2023). https://doi.org/10.1007/s43681-022-00209-whttps://link.springer.com/article/10.1007/s43681-022-00209-w#cite¡	2023	Negative impacts of AI
18	Munro, C. L., & Hope, A. A. (2023). Artificial Intelligence In Critical Care Practice And Research. American Journal of Critical Care, 32(5), 321… https://doi.org/10.4037/ajcc2023958 https://ohsu.elsevierpure.com/en/publications/artificial-intelligence-in-critical-care-practice-and-research	2023	Applications of AI in Research
19	Nguyen, A., Ngo, H.N., Hong, Y. et al. Ethical principles for artificial intelligence in education. Educ Inf Technol 28, 4221–4241 (2023). https://doi.org/10.1007/s10639-022-11316-w Issue DateApril 2023 DOIhttps://doi.org/10.1007/s10639-022-11316-w	2023	Benefits of AI – as Catalyst to development

20	O'Neil, C.: Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy, 1st edn. Crown, New York (2016) MATH	2016	Negative impacts of AI, impedes development of Math competencies
21	Rawls, J. (1971). A Theory of Justice. Harvard University PressResnik, D. B., & Elliott, K. C. (2016). The Ethical Challenges of Socially Responsible Science. Accountability in Research, 23(1), 31–46. https://doi.org/10.1080/08989621.2014.1002608Article Google Scholar Rosa, H. (2010). Accélération et aliénation. Vers une théorie critique de la modernité tardive. Paris, Découverte	1971	Application of social justice in according the Rawls\ Justice and Fairness theory
22	Ryan, M., & Stahl, B.C. (2021). Artificial intelligence ethics guidelines for developers and users: clarifying content and normative, implicns, *J. Inf. Commun. Ethics Soc., 19*, 61-86.	2021	Guidelines for the best use of AI
23	Reiss, M. J. (2021).The use of AI in education: Practicalities and ethical considerations. London Review of Education,	2021	Practical Applications of AI in Education
24	Sharma,R.C.,Kawachi,P.,&Bozkurt,A.(2019) The landscape of artificial intelligence in open, online and distance education: Promises and concerns. Asian Journal of Distance Education, 14,1–2. Retrieved from http://www.asianjde.com/ojs/index.php/AsianJDE/ article/view/432	2019	Challenges and opportunities of using
25	Seldon, A., Lakhani, P., & Luckin, R. (2021). The ethical framework for AI in education. Retrieved from https://www.buckingham.ac.uk/wp-content/uploads/2021/03/The-Institute-for-Ethical-AI-in-Education-The-Ethical-Framework-for-AI-in-Education.pdf	2021	Ethical applications of AI in pedagogy
26	Slimi, Z. (2023). The Impact of Artificial Intelligence on Higher Education: An Empirical Study, European Journal of Educational Sciences, March 2023 edition Vol.10 No.1 ISSN: 1857- 6036 Doi:10.19044/ejes.v10no1a17 https://files.eric.ed.gov/fulltext/EJ1384682.pdf	2023	Positive and negative impacts of AI in Education
27	Verhulst, S.G. (2024). The ethical imperative to identify and address data and intell AI & Soc 39, 411–414 (2024). https://doi.org/10.1007/s00146-022-01410-5 https://link.springer.com/article/10.1007/s00146-022-01410-5#citeas	2024	Social Impacts of AI

28	Waheeb, R. Ethical Uses of Artificial Intelligence AI (July 12, 2023). Available at SSRN: https://ssrn.com/abstract=4507569 or http://dx.doi.org/10.2139/ssrn.4507569Ethical	2023	Ethical uses of AI
29	Wang,S., Wang F., Zhu, Z, Jingxuan Wang [c], Tam Tran, T[a], Zhao Du, Z. (2024)Artificial intelligence in education: A systematic literature review, https://www.sciencedirect.com/science/article/pii/S0957417424010339?via%3Dihub	2024	Focus on practical applications of AI in Education
30	Zhao LL, Zhang L, Dai RH. Ethics of educational artificial intelligence: Basic dimensions and risk elimination. Mod Dist Educ 2021; 2021(5):73-80. DOI:https://doi.org/10.13927/j...20210831.005 https://www.researchgate.net/publication/361692904_Ethical_Risks_in_Integrating_Artificial_Intelligence_into_Education_and_Potential_Countermeasures [accessed Jul 08 2024]	2021	Benefits and Risks of AI in Education

3.1 Research Question One

What are the benefits of using AI in Education?

Opportunities of artificial intelligence in education.

The opportunities derived from leveraging AI for quality educational outcomes are many, and so are the risks involved in its unguided use. Artificial intelligence has two sides, the bright side and the dark side. Here are some important benefits associated with the use of AI as a tool. The major applications of AI in Education are in; planning, instructional, assessment /evaluation, predicting and managing student learning (Crompton & Burke, 2023)

When there is such heated debates, a scholarly SWOT analysis provides an overview of the strengths, and weaknesses of AI. Studies by Louw, 2023 : Kahn, et al, 2022: Ryan & Stahl, 2021), 2020, Boulay, 2020; Holmes et al, 2020) indicated that there are several benefits associated with Artificial intelligence Opportunities of artificial intelligence in education pervade every sphere of educational practices. Consequently, it has undeniably catapulted teachers' and students' personal and professional development with numerous opportunities (Ouyang et al., 2022). Artificial intelligence has proved very beneficial in the development of learner-centred personalized learning, especially for students with special educational needs and in language learning. For homeschooling learners and tutors, AI provides an excellent interface for personalized learning (Reiss, 2021; Wang, et al, 2023).

In addition, AI has greatly improved the work of educational administrators r policy-making advisor.AIED is seen as an influential tool to empower both administrator and subordinates. In terms of interfacing with parents, AI has been associated with significant benefits particularly in aspects such as communication between parents/ guardians and school, distribution of individual student reports, dissemination of newsletters, announcements, timetabling, resource allocation, student tracking, personalization of teaching and learning (tailored design and marking of assessments, curriculum and AI. Regarding Educational Assessments studies

(Zhang, J, 2023; Noroozi, et al., 2024) indicate that AI helps teachers in exam automation for both objective tests and essay exams, particularly in the scoring and in decision-making process based on AI generated records about the students' performance as well as facilitating delivery of prompt personalized or individualized feedback to students.

Moreover, AI has the added strength of the ability to create lesson plans and related learning activities. Artificial intelligence also has the capacity to deliver personalized, instant, accessible and comprehensive feedback to learners Studies underscore the effectiveness of GenAI in enhancing language skills, support self-paced learning and specific academic tasks such as writing lab reports (Noroozi, et al., 2024).

Another handy benefit of AI applications in the context of assessment is in plagiarism detection using AI powered features such as . Turnitin (Dawson et al., 2020) that allows teachers to check the authenticity of essays submitted by students in graduate courses (Alharbi & Al-Hoorie, 2020). This can be considered an important utility of AI in student assessment.

Artificial Intelligence apps can also be used to support learners, or locate and manage changes in learner engagement especially in flipped classrooms, hybrid learning as well as in asynchronous and synchronous learning for students in different locations. (Boulay, 2020; Reiss, 2021; Skin-ner et al., 2019). Artificial Intelligence has greatly lightened the teachers work as a. Pedagogical tool, in provision of tutorials to students (Hwang et al., 2020 ;)

Moreover,, Artificial Intelligence has made remarkable strides in the field of Educational Research and innovation (Wang, et al, 2023) which traditionally seemed unfeasible. in the conventional classroom settings by availing information through prompts (Levene,) . The only risks associated with AI's unguided use is the danger of plagiarism and compiling some information with errors. Hence there is need to follow the ethical guidelines for the appropriate applications of AI in educational research.

The Benefits of AI are innumerable. Artificial intelligence is beneficial in biomedical research and medical practice (Munro &Hope, 2023). In this regard, Researchers are responsible for the entire process—from the generation of the research question, through design and conduct of the study, analysis of results, to dissemination that facilitates translation to practice. While Artificial Intelligence (AI) can enhance student learning and complement the work of (human) instructors in the near to medium-term future it should not be allowed to replace them (Kurni, et al. 2023). The bottom line is balancing the utilitarian of AI in Education, without comparing individuality of both the teacher and the student-Balancing Innovation with Ethics.

Artificial intelligence is beneficial in several academic branches such as biomedical school and medical practice (Munro &Hope, 2023). Biomedical Researchers are responsible for the entire process of research. That is from generating the research question, developing the research design and conducting the study, analyzing the results, and finally discussing and interpreting of findings. The utilization of big data improves the precision and focus of teachers' educational strategies, from group education to precise teaching, from homogeneous teaching materials to personalized content. In addition, AI has greatly improved the quality of educational administration. Artificial intelligence has enhanced home-school contact applications ensuring that parents monitor their children's academic activities at any time and place, as well as respond promptly to school inquiries (Bu, 2021). With the assistance of big

data, teachers and instructional resources can be assigned properly,and school administration can be more precise. Artificial intelligence has greatly improved learners, teacher and administrator facing raising the quality of education (Boulay, 2023).

In a nutshell, the benefits of AI applications in education are outlined below.

Several studies support the idea that artificial intelligence adds value to the quality of pedagogy. Artificial Intelligence improves both teaching and learning, thus benefitting both students and teachers (Akinwalere & Ivanov, Holmes). Such benefits include, but are not limited to the following;

a. Increase academic outcomes
b. It is a motivational strategy for learners because of its novelty, hence it increases retention
c. It is a handy tool for teachers in planning, teaching, and assessments, thus it decreases the time to completion of tasks by teachers and students
d. increase access learning resources at a low cost

After the COVID-19 Pandemic, technology has become rampant, making education ubiquitous. Contemporary applications of AI now also include teacher-facing and administrator-facing tools and are used both locally and via online, distance, and digital technologies. Artificial Intelligence has also been associated with the development of learner-centered, data-driven, personalized learning (Ouyang & Jiao, 2021)

3.2 Research Question Two

What are the ethical risks associated with the use of AI in Education?

Although the integration of AI in the educational system has several benefits, it has also come with some risks. Such risks include unethical implementation of AI, thus endangering the lives of some marginalized or vulnerable groups. Apart from the social impact, AI has also altered or deconstructed Teacher-Student Role Structure from the traditional model where teachers serve as educators (Bu, 2021). The emergence of AI has destroyed the teacher-student human bond to a technology-operated "human-like AI" without emotional feelings to form human-like relationships. One of the most important roles of a teacher is to function as a role model. But with the emergence of AI, the weak bonds beds between teacher and students impede the healthy development of students (Bu, 2021; Zhao, et al. 2023).

Although the use of Artificial intelligence provides easy access to information and seems motivational to students, on the other hand, it may hinder the development of apt cognitive abilities yet is may be more of entertainment" Extravagant Entertainment Experience" as Bu, (2021) puts it. Learners need an education that stimulates balanced, holistic development not just cognitive input. Some scholars also feel that such cognitive overloads may lead to weaker development of mathematical skills and competencies (O'Neil, 2016)

The other major risk associated with the use of AI in Education is Educational Data Security. Some of the learners may still be too immature to understand data security and hence they are below the age of responsibly using AI. Unless the responsible authorities establish a Regulation

to Ensure Transparency and Privacy Protection (Bu, 2021), the data security issue is paramount and needs to be addressed (Drolet, et al, 2023; Bu, 2021; Akinwalrere & Ivanov, 2022).

According to Boulay, (2023) Artificial intelligence has its pros and cons and a mixed reputation. On one hand, it is so ubiquitous that we hardly notice it, e.g., interacting with a chatbot on a website or searching for certain concepts on your smartphone. On the other hand, there are scary stories about AI taking over the world, or just as scary reports about biased decisions based on corrupted data e.g system generating a false-positive or false-negative report about a tumor). Within education, there are issues about the ways that analytics may produce biased results or that companies using AI enter education not with the learner's best interest at heart at both international and local levels (Boulay, 2023; Azaria et al. 2024; Akgun & Greenhow. 2022 ; Foltynek, et al. 2023; Bu, 2021; Akinwalrere & Ivanov, 2022). Although AI can be a time-saving and cognitive aid for teachers, it is but one tool in the teachers' toolkit. Therefore, teachers and students must understand the limits, potential risks, and ethical drawbacks of AI applications in education if they are to reap the benefits of AI and minimize the costs. Several studies have raised ethical concerns and potential risks of AI applications in education. (Akgun & Greenhow, 2022)

Although there are several challenges associated with the use of AI in education to the extent that it Jeopardizes some students' autonomy (Akgun & Greenhow, 2022), there are possible ways to avoid the pitfalls, minimize the risks, and if possible, provide a remedy.

3.3 Research Question Three

What are Some Strategies to reduce the risks of utilizing AI in Education?

Artificial intelligence is a very valuable tool for many disciplines. It is of great benefit to the business industry, in the health sector, in research as well as in education. Despite the wide array of benefits associated with AI, there are several risks purported to emanate from its unguided use. Hence it is crucial to ensure the specific guidelines developed by several key stakeholders such as WHO, UNESCO, OECD. Such key stakeholders have vested interests in the ultimate outcome of AI on individuals as well as the society at large. The following statement confirms its stance. "At UNESCO, we strongly advocate that human teachers should largely steer the uses of AI in classrooms, ensuring that it aligns with pedagogical goals and ethical standards and is appropriate for contexts and cultures that vary enormously within as well as across countries" (UNESCO, 2023). UNESCO developed global standards to maximize the benefits of the scientific discoveries, while minimizing the downside risks. First, there was the Beijing, Convention in 2019. Beijing Consensus on Artificial Intelligence and Education. International Conference on Artificial Intelligence (AI) and Education, included 50 government ministers and vice ministers, as well as around 500 international representatives from more than 100 Member States, United Nations agencies, academic institutions, civil society, and the private sector, met in Beijing, People's Republic of China, from 16 to 18 May 2019. Then in 2021 UNESCO and other governing authorities made up the 193 member states that signed the agreement in 2021 to adopt the Recommendations on the Ethics of Artificial Intelligence (UNESCO, 2023).

Unlike the traditional approaches to the use of AI, modern AI's risks "highly exceeded" the benefits. Hence "It's premature deployment," may be highly risky (Grant & Weise 2023). The

ethical imperative for policymakers is to develop a usable ethical framework that addresses people's concerns about AI risks (Correa, et al, 2023; Holmes, et al 2021, Ashok, 2022; Seldon, 2021). It is also crucial that responsible authorities develop and implement Effective Regulation of Educational Artificial Intelligence to ensure the following; Educational Data Security, Regulations to Ensure Transparency, Privacy Protection, and Ownership of Data- The law should ensure the owner has his/her privacy and the right to prevent the invasion of personal information and information leaks or unlawful data exchanges (Bu, 2021, Verhulst, 2024). Guidelines for the best use of AI should emphasize privacy, transparency, and Beneficence. Benefits should outweigh the costs. In weighing the strengths and limitations of use of Artificial Intelligence, one should consider benefiting everyone, even the vulnerable and marginalized (Kahn, et al, 2021; Ryan and Stahl, 2021).
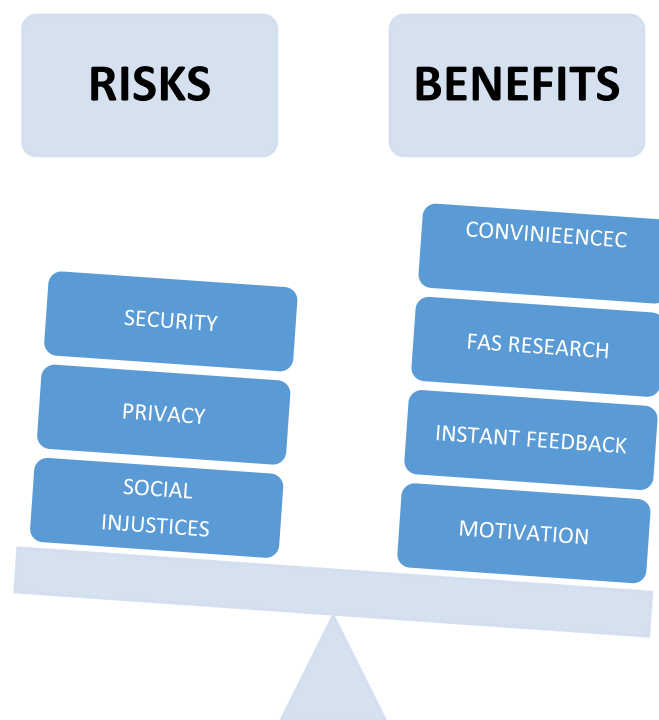

Figure 1 Ethical Risk-benefit Analysis of using AI in Education

There are several recommended Principles and Guidelines outlined by the UNESCO. These are summarized below. Appropriateness of building AI, (2) Transferability of AI systems, (3) Accountability for AI decision-making and outcomes, and (4) Individual consent. The study presents ten recommendations for governance leaders to enhance the ethical governance of AI in global health research, addressing issues such as AI impact assessments, environmental values, and fair partnerships (Corrêa et al, 2023; Nguyen et al, 2023).

3.4 Ten Basic ethical Principles of using AI

Studies by (Kahn, et al, 2022) indicate that the global convergence set of ethical codes consists of 22 ethical principles. These outlined principles are adapted from the following sources Kahn, et al, (2021); Nguyen et al, (2023) and UNESCO, (2021) these are outlined in Table 2.

Table 2 AI Ethics Principles

	ETHICAL PRINCIPLE	Description
1	Transparency	This implies that whatever information is needed or activities undertaken using Ai, the aims and objectives should be clear to the end users.
2	Justice/Fairness	it is essential to take into consideration implementation fairness as a common theme. Consider the fairness of the ultimate outcomes of AI on the vulnerable groups.
3	Autonomy/Freedom	Consider the security of the end users- **Participation must be voluntary**
4	Beneficence	Beneficence Consider the outcomes and their impacts on individuals. The immediate communities of represented groups or those participating in the data sample receive benefits in equal or similar portions. Social & Environmental Benefits must be clear.
5	Non-Maleficence	Avoid significant negative consequences for vulnerable or protected groups. Avoid causing harm (psychological, emotional financial, professional, or other types of harm). to specific members.
6	Accountability	Ensure there are tight controls to get access to private data. And to use methods that ensure that the privacy and security legal framework and standards are followed
7	Privacy	Maintain confidentiality of data to ensure that information is accessible only to the appropriate people authorized.
8	Data Security	Data Security: privacy and security protects private and personal information from a wide range of threats. Hence maintaining confidentiality of data ensures that information is accessible only to the appropriate people authorized to access the information and that there are specific controls that manage the delegation of authority
9	Human Dignity	The use of personal information should be limited only to that which is necessary for the proper functioning of the system.so as to avoid or withstand cyberattacks and data breach attempts.
10	Responsibility	Be responsible in the use of private data. Uphold respect and integrity

1. Principle of governance and stewardship of AI in Education (Ashok et al., 2022; UNESCO Education & AI 2021). Each stakeholder should be a responsible steward of AI-generated data and the ensuing consequences. This is similar to the principle of Responsibility.
2. Principle of transparency and accountability: All stakeholders must operate with transparency and accountability.

3. Principle of sustainability and proportionality: All AI developments should be aligned to the 2030 sustainable development goals. Hence, they should avoid disrupting the environment, world economy, and society, such as the labor market, culture, and politics (Nguyen et al, 2023; UNESCO, 2019).

4. Principle of privacy: Respect for individual or organizational privacy is a critical ethical concern in the sustainable implementation of Artificial intelligence in education. This leads to the next principle.

5. Principle of Security and Safety: All data collected from users should be kept securely, uncorrupted and protected from cybercriminals (Nguyen, et al, 2021).

6. Principle of inclusiveness: Principle of Inclusiveness in Accessibility to AI tools requires appropriate infrastructure, equipment, skills, and societal buy in so as to accommodate a wide range of individuals in the intended region, allowing equitable access and use of AI and reducing the digital divide (UNESCO, 2021).

7. Principle of developing human-centered AI. The development of human-centered AI ensures that the human is respected and maintains dignity. Automated machines are used to benefit humanity, without compromising or diminishing a human being's cognitive abilities.

8. Principle of Trust: It is important for all stakeholders involved to develop a high level of trust of each other. When there is lack of trust there is no transparency.

9. Principle of Respect: Respecting other's property involves acknowledging sources of data and avoiding plagiarism.

10. Principle of Integrity: It is good to uphold integrity principles to safeguard the accuracy and completeness of information and processing

Artificial intelligence (AI) is meant to complement the work/assignments, not to replace the student. AI should be used ethically and that's it with caution and responsibility. If properly used AI prompts can assist in proof reading and correcting grammatical errors in documents. Always acknowledge AI usage in all your submissions. Just as in any procedure to avoid plagiarism, all sources of information need to be acknowledged the use of [name of AI tool], [provide the link].

Every stakeholder must be committed to Academic Integrity. Scholars should aim to strengthen their originality and creativity by reading widely to grow through building on other scholars work yet maintaining independence of thought. Though written more than a century ago, this statement still holds water. "Youth to Be Thinkers—Every human being, created in the image of God, is endowed with a power akin to that of the Creator—individuality, power to think and to do…It is the work of true education to develop this power, to train the youth to be thinkers, and not mere reflectors of other men's thought. Instead of confining their study to that which men have said or written, let students be directed to the sources of truth, to the vast fields opened for research in nature and revelation…Instead of educated weaklings, institutions of learning may send forth men strong to think and to act, men who are masters and not slaves of circumstances, men who possess breadth of mind, clearness of thought, and the courage of their convictions (White, 1903).

4.0 DISCUSSION

The implementation of AI is accompanied by many benefits and risks although some scholars strongly argue that the benefits outweigh the risks. Although AI is ubiquitous, it may not be readily available to the marginalized vulnerable groups. Hence there is need for those who develop policies that govern the use of AI need to develop fair laws and policies that would affect the whole society (Rawls, 1971). Rawls' veil of ignorance is particularly useful because it tries to put away prejudices and egoistic attitudes and encourages fairness by putting oneself in the shoes of vulnerable groups of society.

Like any other technological tool AI has its strengths and weaknesses, benefits and risks.. Studies by Ryan & Stahl, et al, 2021 indicated that there are several benefits associated with Artificial intelligence. AI has a variety of educational applications, such as personalized learning platforms to promote students' learning, automated assessment systems to aid teachers, and facial recognition systems to generate insights about learners' behaviors.

The relationship between ethics and Artificial intelligence is very intricate. Artificial intelligence cannot be applied in any field without ethical consideration. This is very pivotal in the academia. There is a need to always carry out a risk-benefit analysis, weighing the short-term, medium-term, and long-term risks. Such risks include but are not limited to;

a. Data insecurity
b. Lack of transparency
c. Lack of privacy
d. Infringing on people's rights,
e. No autonomy,
f. Non-inclusivity policies- bias and discrimination
g. Lack of justice and fairness. Vulnerable are usually at greater risk
h. Faulty erroneous AI-generated reports
i. Lack of adequate surveillance
j. Other High risks. "known unknowns" as described by Holmes, (2018).

The implementation of AI is accompanied by many benefits and risks although some scholars strongly argue that the benefits outweigh the risks. Although AI is ubiquitous, it may not be readily available to marginalized vulnerable groups. Hence there is need for those who develop policies that govern the use of AI need to apply Rawl's theory of justice and fairness to ensure the application of equity and fair policies for the benefit of the whole society (Rawls' veil of ignorance is particularly useful because it tries to put away prejudices and egoistic attitudes and encourages fairness by putting oneself in the shoes of the vulnerable groups of society.

Unfortunately, most AI developers approach this ethical issue from a Utilitarian perspective, hence, monopolies, such as Google, consider the number of people who benefit. Hence, their decisions were rooted in utilitarian and teleological perspectives, so to them, if harm comes to a smaller group of people than those who benefit, the companies would still be able to justify their decisions through utilitarianism (Zhang et al, 2022;. Besides, some of the negative social

impacts of AI may not be reliably predicted. Some of the long-term negative impacts of AI may not be known yet. The bright side of AI is to focus on the use of artificial intelligence for peaceful purposes and the development of societies and in all fields, especially in the era of the technological revolution. Machines are man-made hence they need to be managed and controlled, and not the other way around. Rightly used, AI can transform the world for the better in industries and academics.

4.1 Recommendations

Artificial intelligence is here to stay as it is associated with several benefits, (Boulay, 2023; Waheeb, 2023; Zhao, et al, 2021). However, since there is there are risks involved in its use, the study recommends that sustainable use of AI in education should be guided by a sound ethical framework developed by all the key stakeholders. Administrators, Teachers and students should not overly depend on AI to the extent of diminishing the holistic development of all the faculties. Systems should not attempt to replace the teacher.' and '10. Avoid glorifying the use of computer systems, thereby diminishing the human role and the human potential for learning and growth (Holmes, et al (2022). Every stakeholder should carry out a risk benefit analysis before embarking on the use of AI.

5.0 CONCLUSION

While living in this technology-driven world educators need to stay abreast with all new technology such as Artificial intelligence.. However, it is also necessary to take precautions to avoid the ethical risks associated with AI. Learning is now ubiquitous, hence educators need to upskill themselves with technological competencies as well as equip their learners with strategies to acquire AI literacy required in the information age and the necessary skills to excel in a future labor market increasingly dominated by AI so they remain on the cutting edge. To reap the most from the technological advancements as per the Technology Acceptance Model, users consider the benefits and ease of use. In this case, benefits from the use of AI are many, these include conveniences and prospects. But this comes accompanied with risks. Hence it is also crucial to assess the ethical risks, and consider the possible remedies before embarking on using AI. Teachers and students should be ready to adjust to their new roles in education, adapt to the new teaching ecology, and address the potential ethical risks. In addition, educational administrators need to develop policies that enhance educational equity, while national governing bodies should institutionalize regulations the ensure security of educational data as it relates to using AI technology in academia. Responsible authorities need to collaborate to manage the growing concerns, Harvard University and MIT, European Union (EU), European Community, OECD, Australia, the Global Partnership on Artificial Intelligence (GPAI) and UNESCO, and others governing authorities who made up the 193 member states that signed the agreement in 2021 to adopt the Recommendations on the Ethics of Artificial Intelligence (UNESCO, 2023)

REFERENCES

Akgun S, Greenhow C. Artificial intelligence in education: Addressing ethical challenges in K-12 settings. AI Ethics. 2022;2(3):431-440. doi: 10.1007/s43681-021-00096-7. Epub 2021 Sep 22. PMID: 34790956; PMCID: PMC8455229.

Akinwalrere, S. N. & Ivanov, V. T. (2022), Artificial Intelligence in Higher Education: Challenges and Opportunities February 202212(1):1-15, DOI:10.33182/bc.v12i1.2015.

Ashok, M, Madan , R. Anton Joha, A. & Sivarajah, U. (2022). Ethical framework for Artificial Intelligence and Digital technologies

Azaria, A. ; Azoulay, R. & Shulamit Reches; ChatGPT is a Remarkable Tool—For Experts. Data Intelligence 2024; 6 (1): 240–296. doi: https://doi.org/10.1162/dint_a_00235 https://direct.mit.edu/dint/article/6/1/240/118046/ChatGPT-is-a-Remarkable-Tool-For-Experts

Bu, O. (2021). Ethical Risks in Integrating Artificial Intelligence into Education and Potential Countermeasures Qingyun Bu* (1) (PDF) Ethical Risks in Integrating Artificial Intelligence into Education and Potential Countermeasures. Available from: https://www.researchgate.net/publication/361692904_Ethical_Risks_in_Integrating_Artificial_Intelligence_into_Education_and_Potential_Countermeasures [accessed Jul 08 2024].

Boulay, B.D. (2023). Artificial Intelligence in Education and Ethics January 2023 DOI:10.1007/978-981-19-2080-6_6. In book: Handbook of Open, Distance and Digital Education (pp.93-108)

Cambridge English Dictionary https://dictionary.cambridge.org › ... SOCIAL JUSTICE | English meaning - Cambridge Dictionary

Corrêa, N.K. • 2023 Worldwide AI ethics: A review of 200 guidelines and Science Direct.com https://www.sciencedirect.com › science › article › pii

Crompton, H., & Burke, D. (2023) Artificial intelligence in higher educathttps://doi.org/10.1186/s41239-023-00392-8ion: the state of the field. Int J Educ Technol High Educ 20, 22 (2023).

Davis, F, D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology, MIS Quarterly Vol. 13, No. 3 (Sep., 1989), pp. 319-340 (22 pages) Published By: Manag https://www.jstor.org/stable/249008

Drolet, MJ., Rose-Derouin, E., Leblanc, JC. et al. Ethical Issues in Research: Perceptions of Researchers, Research Ethics Board Members and Research Ethics Experts. J Acad Ethics 21, 269–292 (2023). https://doi.org/10.1007/s10805-022-09455-3.

Grant, N., & Weise, K.:(2023). In A.I. Race, Microsoft and Google Choose Speed Over Caution. The New York Times, Apr. 07, 2023. https://www.nytimes.com/2023/04/07/technology/ai-chatbots-google-microsoft.html, Accessed 20 Aug 2023.

Holmes, W., Porayska-Pomsta, K., Holstein, K. et al. Ethics of AI in Education: Towards a Community-Wide Framework. Int J Artif Intell Educ 32, 504–526 (2022). https://doi.org/10.1007/s40593-021-00239-1

Khan, A. A., Badshah, S., Liang, P., Waseem, M., Khan, K., Aakash, A. Ahmad, A., Fahmideh, F., Niazi, M. Azeem, M. & Akbar8 M.A (20022) A Systematic Literature Review of Principles and Challenges} =(1) (PDF) Ethics of AI: A Systematic Literature Review of Principles and Challenges.

Karagkouni E. & Sotiropoulou, P. (2023), ARTIFICIAL INTELLIGENCE IN EDUCATION: ETHICAL CONSIDERATIONS https://www.researchgate.net/publication/376102905_ARTIFICIAL_INTELLIGENCE_IN_EDUCATION_ETHICAL_CONSIDERATIONS

Küçük, E., Cincil, F. & Karal, Y. (2024(.A systematic review of the ethical use of artificial intelligence (AI) in education, May 2024 DOI: , 10.21203/rs.3.rs-4370610/v1 License CC BY 4.0

Kurni, M., Mohammed, M.S. & Sirinivasa (2023) Ethics of Artificial Intelligence in Education. DOI:10.1007/978-3-031-32653-0_12. In book: A Beginner's Guide to Introduce Artificial Intelligence in Teaching and Learning (pp.213-229) https://www.researchgate.net/publication/371994346_Ethics_of_Artificial_Intelligence_in_Education

Levene A (2023) Artificial intelligence and authorship. COPE. 23 February 2023. Available Online. URL - https://publicationethics.org/news/artificial-intelligence-and-authorship

Louw, MDiv, (2023)   *Artificioal Intelligence Ministry Magazine, SEPTEMBER 2023, https://www.ministrymagazine.org/archive/2023/09/Ministry-and-artificial-intelligence

Merriam Webster Dictionary https://www.merriam-webster.com/dictionary/ethicv

Munn, L. The uselessness of AI ethics. AI Ethics 3, 869–877 (2023). https://doi.org/10.1007/s43681-022-00209-whttps://link.springer.com/article/10.1007/s43681-022-00209-w#cite¡

Munro, C. L., & Hope, A. A. (2023). ARTIFICIAL INTELLIGENCE IN CRITICAL CARE PRACTICE AND RESEARCH. American Journal of Critical Care, 32(5), 321-323.

https://doi.org/10.4037/ajcc2023958https://ohsu.elsevierpure.com/en/publications/artificial-intelligence-in-critical-care-practice-and-research

Nguyen, A., Ngo, H.N., Hong, Y. et al. Ethical principles for artificial intelligence in education. Educ Inf Technol 28, 4221–4241 (2023). https://doi.org/10.1007/s10639-022-11316-w https://link.springer.com/article/10.1007/s10639-022-11316-w/tables/1

Noroozi, O., Soleimani, S., Farrokhnia, M., & Banihashem, S.K. (2024). Generative AI in education: Pedagogical, theoretical, and methodological perspectives. International Journal of Technology in Education (IJTE), 7(3), 373-385. https://doi.org/10.46328/ijte.845 DOI: https://doi.org/10.46328/ijte.845

Ouyang, F & Jiao, P. (2021). Artificial Intelligence in Education: The Three Paradigms. Computers and Education: Artificial Intelligence. 2. 100020. 10.1016/j.caeai.2021.100020. https://www.researchgate.net/publication/351179993_Artificial_Intelligence_in_Education_the_Three_Paradigms/citation/download?_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6InB1YmxpY2F0aW9uIiwicGFnZSI6InB1YmxpY2F0aW9uIn19

Rawls, J. (1971). A Theory of Justice. Harvard University PressResnik, D. B., & Elliott, K. C. (2016). The Ethical Challenges of Socially Responsible Science. Accountability in Research, 23(1), 31–46. https://doi.org/10.1080/08989621.2014.1002608Article

Reiss, M. J. (2021). The use of AI in education: Practicalities and ethical considerations London Review of Education 19(1) DOI: 10.14324/LRE.19.1.05

Ryan, M., & Stahl, B.C. (2021). Artificial intelligence ethics guidelines for developers and users: clarifying their content and normative implications. J. Inf. Commun. Ethics Soc., 19, 61-86

UNESCO Artificial Intelligence and Education, General UNESCO Ethic AI 2020 (Draft) UNESCO Education & AI (2021) Beijing Consensus (2019) OECD (2021) European Commission (2019) European Parliament Report https://www.unesco.org › digital-education › artificial https://unesdoc.unesco.org/ark:/48223/pf0000386693

Verhulst, S.G. (2024). The ethical imperative to identify and address data and intelligence asymmetries. AI & Soc 39, 411–414 (2024). https://doi.org/10.1007/s00146-022-01410-5 https://link.springer.com/article/10.1007/s00146-022-01410-5#citeas

Waheeb, R. (2023), Ethical Uses of Artificial Intelligence AI (July 12, 2023). Available at SSRN: https://ssrn.com/abstract=4507569 or http://dx.doi.org/10.2139/ssrn.4507569Ethica

White, E.G. Education, EllenWhite.info https://www.ellenwhite.info › books › books-by-egw-ed

Zhang, Bo, (2023). Strategies, and Implications of ChatGPT & AI Technologies.. 10.13140/RG.2.2.32105.98404.

AU - Zhang, Bo., (2023).- Preparing Educators and Students for ChatGPT and AI Technology in Higher Education:Benefits, Limitations, Strategies, and Implications of ChatGPT & AI Technologies.   DO - 10.13140/RG.2.2.32105.98404

Zhang, J. 2023 Impact of Artificial Intelligence on Higher Education in the Perspective of Its Application of Transformation. Lecture Notes in Education Psychology and Public Media 2(1):822-830. DOI:10.54254/2753-7048/2/2022483

Zhang, Z, Chen, L. & Xu, L. (2022). Artificial intelligence and moral dilemmas: Perception of ethical decision-making in AI, Journal of Experimental Social Psychology,

Volume 101, 2022, 104327, ISSN 0022-1031, https://doi.org/10.1016/j.jesp.2022.104327. (https://www.sciencedirect.com/science/article/pii/S0022103122000464)

Zhao LL, Zhang L, Dai RH. Ethics of educational artificial intelligence: Basic dimensions and risk elimination. Mod Dist Educ 2021; 2021(5):73-80. DOI:https://doi.org/10.13927/j...20210831.005 https://www.researchgate.net/publication/361692904_Ethical_Risks_in_Integrating_ Artificial_Intelligence_into_Education_and_Potential_Countermeasures