LONDON JOURNAL OF SOCIAL SCIENCES

eISSN 2754-7671

Empowering education with AI: Addressing ethical concerns

Sara Saylam
Harmony School of Innovation Sugar-Land
sasa2227.2020@gmail.com

Nilgun Duman
Harmony School of Innovation Sugar-Land
n.rabia.d123@gmail.com

Yetkin Yildirim
Rice University
yetkin@rice.edu

Kseniya Satsevich
University of Texas at Austin
ksatsevich2003@gmail.com

Abstract
There has been a rapid advancement of technology in the realm of education, and artificial intelligence (AI) has become just one of the many tools utilized by members of educational institutions. However, with the swift integration of AI into the education system, many ethical challenges and dilemmas have surfaced; primarily driven by students' misuse of the transformative technology. The potential impact on students' critical thinking skills, autonomy, and ethical decision-making further highlights the urgency to address these issues. This article explores the detrimental effects resulting from the unethical use of AI, along with proposing significant policies and guidelines in order to maximize the beneficial utilization of AI within educational institutions. Additionally, a comprehensive analysis of relevant studies will be presented to sustain the argument stated and contribute to the development of an AI learning environment that enables the prospering of both students and faculty.
Key words: Technology, Education, Artificial intelligence (AI), Ethics, AI Misuse, ethical decision-making , Policies, Beneficial utilization, integration

https://doi.org/10.31039/ljss.2023.6.103

Introduction and Background

AI is often perceived as a complex system, yet it can be effectively simplified to ensure thorough understanding for all. Artificial intelligence (AI) is generally known as intelligent computer systems that are capable of performing tasks usually requiring human intelligence. Its wide array of versatile applications includes various techniques such as machine learning, language processing, and computer vision (Diaz, 2023). AI has opened up a world of endless possibilities, transforming various fields and the way we live, work, and interact. Nonetheless, without a structured framework of policies and guidelines, its unregulated implementations can lead to unprecedented consequences (Borenstein & Howard, 2023).

AI has gone through significant advancements, becoming highly accessible to the general public. This accessibility has resulted in students receiving answers on tests through online websites, along with plagiarizing on assignments. The most well known resource associated with cheating is a resource called ChatGPT. ChatGPT, OpenAI's new free chatbot, uses machine learning to respond to prompts in fluent natural language and code (Duffy & Weil, 2023). With this attainability, students have been leveraging it to their advantage, resulting in the loss of critical thinking skills, an increase in laziness, a lack of motivation, among others. As AI continues to advance, students will have access to an expanding pool of resources, which may hamper their ability to develop essential skills fostered within educational institutions (Chen, 2023). In an effort to mitigate the negative impacts of AI-enabled cheating, educational institutes must enforce policies and guidelines to promote a culture of integrity in schools.

Despite widespread awareness among educators regarding the drastic escalation in students' unethical use of AI, limited action has been taken to address the issue. In fact, a study conducted by UNESCO has discovered that *among* 450 schools and universities, less than 10% have developed institutional policies or a framework of formal guidelines concerning the utilization of AI applications. The absence of such guiding principles poses a significant challenge for educators striving to adapt to the accelerated expansion of this transformative technology. Many educational institutions have independently taken action, which has caused inconsistencies between facilities despite the availability of a standardized solution for all (Johnson, 2023). Some have been successful in their implementation of AI in their systems by accepting and adapting to the new innovation. On the other hand, numerous institutions remain ignorant of the current issues plaguing the field of education, and as a result, have resorted to ineffective measures of outright banning the integration of this emerging technology (Yang & Evans, 2023).

Once AI is properly established within the education system, an abundance of benefits and opportunities will follow which will revolutionize the whole learning experience for both students and educators. With AI as a powerful educational tool, personalized learning can be enhanced to cater individual needs and encourage engagement. The establishment of AI in education will leverage and elevate outcomes of students within education settings, allowing them to be prepared for challenges in the future.

AI Integration in Other Industries (Health and Finance)

The impact of artificial intelligence extends beyond the education system and is employed in various fields, including healthcare and finance. The integration of AI in these industries has brought forth a multitude of ethical challenges. The employment of AI in healthcare has led to improved diagnostics, personalized treatments, and enhanced patient care (Moore, 2023). Be that as it may, it has also raised concerns regarding privacy, data security, and the potential for biased decision-making. In the financial sector, AI algorithms enable efficient fraud detection, risk assessment, and automated trading. As a result, questions have arised regarding algorithmic transparency, and accountability. Consequently, policymakers have been compelled to establish standardized policies and guidelines to mitigate the risks of misuse and ensure responsible implementation while also utilizing the maximum potential of AI in these fields for their benefit.

The incorporation of AI into the healthcare system has optimized the field of medicine. Many ways that AI is seen being used in healthcare include medical imaging,disease diagnosis and prediction,precision medicine,health monitoring and remote care,drug discovery and development,virtual assistants and chatbots, etc. AI algorithms can analyze medical images, such as X-rays and MRI scans, to identify patterns and anomalies that a human provider might miss. This can lead to earlier and more accurate diagnoses, resulting in better patient outcomes (Moore, 2023). However, along with its advantages, it has proposed risks of privacy and security. Numerous cases have been reported on health data breaches. One of the many cases include Baptist Medical Center and Resolute Health Hospital. The hacking incident affected a stagnant amount of 1.6 million patients. An “unauthorized party” gained access to some systems containing personal information and took data between March 31 and April 24, according to a statement from the hospitals (Southwick, 2023).The information may have included personal data such as dates of birth, Social Security numbers, health insurance information, other medical data, and billing and claims information. In order to avoid these risks, health care providers take traditional steps to ensure the security and privacy of patient data. Policymakers have created a framework of guidelines and policies including the minimum standards for AI in healthcare (Hernandez- Boussard et al., 2020) to specify the process in evaluations of data collected by AI models in research (Luo et al., 2016). Additionally, John Hopkins has conducted a study that has proved with the help of AI, privacy breaches can be prevented and detected more efficiently. With these policies and guidelines being set, ethical dilemmas faced by the field of medicine, including privacy breaches, have been easily prevented.

On top of that, the current impact of AI on the advancement of accounting and finance is indisputable. There are a great number of use cases for AI in finance, including fraud detection, risk assessment, trading, and enabling 24/7 customer service. While performing these tasks to perfection, the transformative technology saves a considerable amount of both money and time (Sajid, 2023). However, just like in education, the integration of AI in finance has faced its own ethical dilemmas. Transparency emerges as a pressing concern surrounding AI in a plethora of fields, including finance. The technology often provides decisions or answers without sufficient explanation or reasoning, leaving users with a lack of comprehension behind their actions and the underlying rationale behind them (Burt, 2019).

Fortunately, the FTC requires companies to be transparent with the customer, whether the company is collecting sensitive data or using algorithmic decision-making to come to a conclusion (Smith, 2020). Include specific situations that have occurred when they don't do this. Furthermore, in ethical dilemmas concerning AI, the FTC maintains its consistency, establishing the "FTC Act" and enacting the placement of laws, such as the Fair Credit Reporting Act (FCRA) in 1970 and the Equal Credit Opportunity Act (ECOA) in 1974 (Smith, 2020).

Even though these industries faced different ethical dilemmas than the ones presented in education, they were able to acknowledge the problems within their fields and collaborate to resolve the issues. This is an attitude that educators need to adopt. If the educational industry wants to address the ongoing issue with AI, then policies and guidelines need to be implemented in order to operate in an ethical manner, observing these industries as the standard.

Unregulated Use of AI

Artificial intelligence is rapidly becoming an everyday tool, similar in function to that of Google (Chiabaut, 2022). The rise of AI in teens' schoolwork seems to be increasing exponentially every year. A study from Big Village with over 1000 teens has revealed that more than 44% of those teens admitted to planning to use AI to complete assignments in the future (Conte, 2023). Consequently, 60% of them seemed to believe that the use of AI was cheating. This data once again raises concerns regarding ethical dilemmas within an educational setting in which AI is normalized. Furthermore, the Reboot Foundation conducted a recent research survey that provided evidence of deteriorating critical thinking skills and retention, with 86% of students lacking these skills (Reboot Foundation, 2020). The constant use of artificial intelligence is negatively affecting students of every kind, yet no action is currently being taken to address this problem.

This brings us to our most blatant question: why are ministries of education and educators doing absolutely nothing to guide and assist students? As exhibited earlier, a study conducted by UNESCO has discovered that among 450 schools and universities, less than 10% have developed institutional policies or a framework of formal guidelines concerning the utilization of AI applications (Giannini, 2023). In fact, educators are the only ones who can truly regulate AI's new and complex role in the education system. To do so, these educators need to come together and coordinate a regulatory system for these new technologies that are rapidly being introduced into education. Ironically enough, educators seem to believe the best way to address this issue is for each of them to create a solution on their own, resulting in different regulatory systems for different school districts (Ta & West, 2023). As this form of action has proven to be ineffective time and time again, educators need to realize they are misguided and change their approach to this challenge (Giannini, 2023).

Schools universally, especially within the U.S., have taken one of three actions: banning AI, integrating it into curricula, or putting it under further review (Ta & West, 2023). Many schools, such as Peninsula School District and Alliance City School District, have been working to integrate this technology into their curriculum, allowing them to be prepared when

ChatGPT was first introduced. These school districts have been able to leverage AI in classroom settings while also regulating any negative use of the technology. Other schools, like Mineral Wells Independent School District, are still experimenting with the implementation of AI (Ta & West, 2023). They are currently trying to establish the role AI will play within their education system and how to integrate it efficiently (Castillo, 2023). On the other hand, the most prominent school districts that have banned transformative technology include New York City Public Schools and Los Angeles Unified. Unfortunately, banning this technology is simply a "band-aid solution" and will not remain effective in the long term, as many students will continue to find shortcuts and loopholes to access artificial intelligence as they see fit (Ta & West, 2023).

The principle of this issue is as follows: as long as the root of the issue remains, then any measures taken will remain ineffective and inefficient (Matzinger, 2023). When certain educators put AI under review or simply ban it, they are implicitly admitting they don't understand the function of the technology. Nonetheless, they are also unaware that they don't necessarily have to be experts regarding artificial intelligence to counter the consequences of its misuse. As long as somebody has a basic understanding of ethical laws, then they can build upon those according to the field or industry they are employed in (Reiss, 2021). In addition to these laws, there are 4 specific ethical principles that apply to the education system. With this guiding constitution, all educators alike will be able to propose significant and structured policies in relation to the implementation of AI in education.

Ethical Guidelines

While there are seven main ethical principles, around eleven of them are applicable to the field of education. Establishing certain guidelines using these ethical principles as a framework would allow educators to properly regulate the use of AI (Reiss, 2021). This will eventually lead to an environment where both teachers and students can thrive in an educational setting. However, implementing them is simply not enough. There has to be a continuous effort to spread awareness among people regarding these principles and what they truly mean. After very thorough research, only about 5 ethics guidelines were identified as directly relevant to children in education (Adams et al., n.d.). These ethics guidelines include the basic principles of ethical values and an additional 4 principles that need to be taken into consideration due to the industry they are being implemented in.

Most of the traditional ethical principles are values that are displayed and introduced throughout a person's day-to-day life. The best examples of this would be beliefs related to transparency, justice & fairness, responsibility, and privacy. In addition to these common values, there are more principles that are a little less familiar, but share the same idea. From the 5 guidelines, the other basic principles would be non-maleficence, beneficence, and freedom & autonomy. Non-maleficence is the ethical belief ensuring safety, beneficence is supporting and enhancing a person's well-being through beneficial means, and autonomy is having the liberty to make choices (Adams et al., n.d.). These are the basic concepts for a structured framework of guidelines and policies.

Nevertheless, an educator needs to slightly alter these ideas to fit the values of education while also taking into account the use of AI. Education is centered around the growth and development of children until they are of legal age, meaning these principles have to play a similar role. These values can be expressed and derived from the addition of principles such as pedagogical appropriateness, children's rights, AI literacy, and teacher's well-being. Children's rights and teacher's well-being are self-explanatory, but phrases like pedagogical appropriateness and AI literacy are a bit more complex. Pedagogical appropriateness means ensuring that teachers retain their professional freedom and responsibility to choose and use AI with due regard for "what is good or right and what is life enhancing, just, and supportive" of children and youth in their local classroom and community contexts. AI literacy refers to the importance of children and youth learning about AI so that they may be critically informed, as well as the need to build teacher knowledge capacity and parental awareness (Adams et al., n.d.). By establishing and spreading awareness of these principles within an educational setting, educators can govern the misuse of AI technology while utilizing it to benefit the classroom environment.

After a dramatic increase in plagiarism cases at Weill Cornell Medicine in Qatar, the administrators devised a plan to regulate the amount of cases occurring. In Phase 1, they collected data from as many faculty members as they could, and they also asked for suggestions in the process. During this phase, the administrators and researchers implemented many interventions regarding plagiarism and its ethical value, including a plagiarism policy published in their handbooks and on their websites, online tutorials and plagiarism seminars, and lastly, plagiarism detection software along with student resources to help handle the stress that comes with the class workload. Years after integrating this system, the researchers collected their results. Phase 2 revealed shocking data in which 37.5% of faculty reported no cases of plagiarism, unlike the 12.1% in Phase 1. On top of that, concerns about

Benefits of AI Implementation

The incorporation of AI systems into the education field is poised to trigger a transformation, fundamentally changing various aspects of the learning journey. Many changes are set to come with the integration of AI, along with the appropriate regulations set in place. For instance, AI will play a role in personalizing students' learning experiences by analyzing their learning patterns, strengths, and weaknesses. This will enable a tailored approach to education for each student (Rafferty, 2023). Adaptive learning platforms leverage this data to offer customized content that adjusts its difficulty level and pace to match each student's abilities. Additionally, AI-powered educational tools will be utilized for assignment assessment, providing feedback to students while allowing teachers to dedicate time to personalized instruction. Furthermore, interactive AI tools will establish a more engaging learning environment, allowing students to understand complex concepts more in-depth through engagement (Rafferty, 2023). However, AI could expand its reach beyond the traditional classroom setting and extend support to students with special needs. AI will provide assistance to special needs students by helping educators create personalized interventions for these students. Nevertheless, with AI's continuous expansion, it has the potential to assist in recognizing skills and areas of knowledge that ought to be incorporated into programs,

ensuring that students are adequately prepared for the ever-changing job landscape. Lastly, in today's age, online platforms powered by AI have the potential to provide students in disadvantaged areas with valuable educational resources. This has the power to democratize access to high-quality education for all.

Critics who oppose the incorporation of AI in educational settings argue that AI will supplant teachers. However, this assumption is unfounded. AI technology has not developed — and likely never will — to a point where it can be a perfect replacement for human teachers (Rafferty, 2023). Despite the vast amount of information that AI can analyze regarding a student's achievements and personal preferences, nothing can replace the power of a human educator when it comes to observing and comprehending students' emotional responses and connecting with them on an emotional level. AI will act as a supplemental tool for teachers, such as stimulating students. AI language models can be used to simulate students and demonstrate common traits found within students, including confusion and follow-up questions, as stated by Percy Liang, an associate professor of computer science at Stanford University (Chen, 2023). Furthermore, Dora Demszky, an assistant professor of data science at Stanford University, highlights AI’s capability to provide real-time feedback and suggestions to assist educators, such as answering questions asked in class (Zhang & Aslan, 2023). Demszky added that AI can produce post-lesson reports that summarize classroom activity. The summary would include student speaking time along with the identification of the questions that triggered the most engagement. Nonetheless, Sal Khan, founder of the online learning environment Khan Academy, suggested that AI could help teachers stay up-to-date with the latest advancements in their field. For instance, a biology teacher could receive updates on breakthroughs in cancer research and utilize AI to keep their curriculum up to date (Maheshwari, 2023).

The creation and integration of the calculator into the education system was thought to mark the end of manual mathematical computation. However, as seen in today's world, it has become a resource that students and educators use to assist with mathematical or scientific computations in order to produce accurate results. Similarly, the integration of AI into the education system will allow the upcoming generation of students to thrive within an educational environment.

Conclusion

It is of paramount importance to educate students on the impact of AI on their education and the significance of ethical values when using such transformative technology. While AI has the potential to greatly enhance education, it is crucial that we approach its implementation thoughtfully, taking into consideration the challenges and ethical implications involved. With the help of ministries of education and educators, a distinctive balance between progressive teaching principles and ethical considerations will play a crucial role in uncovering the full advantages that AI can offer in the field of education for students and faculty alike.

References/Bibliography

Adams, C., Pente, P., Lemermeyer, G., & Rockwell, G. (2021). Artificial Intelligence Ethics Guidelines for K-12 Education: A Review of the Global Landscape. *Lecture Notes in Computer Science*, 24–28. https://doi.org/10.1007/978-3-030-78270-2_4

Ahmad, S. F., Han, H., Alam, M. M., Rehmat, M. K., Irshad, M., Arraño-Muñoz, M., & Ariza-Montes, A. (2023). Impact of artificial intelligence on human loss in decision making, laziness and safety in education. *Humanities and Social Sciences Communications*, *10*(1), 1–14. https://doi.org/10.1057/s41599-023-01787-8

Bailey, J. (2023, August 8). *AI in Education*. Education Next. https://www.educationnext.org/a-i-in-education-leap-into-new-era-machine-intelligence-carries-risks-challenges-promises/

Borenstein, J., & Howard, A. (2020). Emerging challenges in AI and the need for AI ethics education. *AI and Ethics*, *1*. https://doi.org/10.1007/s43681-020-00002-7

Chen, C. (2023, March 9). *AI Will Transform Teaching and Learning. Let's Get it Right.* Stanford HAI. https://hai.stanford.edu/news/ai-will-transform-teaching-and-learning-lets-get-it-right

Chiabaut, C. (2022). Unpacking the "Black Box" of AI in Education. *ArXiv (Cornell University)*. https://www.academia.edu/100163425/Unpacking_the_Black_Box_of_AI_in_Education

Conte, J. D. (2023, August 1). *Student AI usage to return in upcoming school year, study shows*. https://www.kltv.com/2023/08/01/student-ai-usage-return-upcoming-school-year-study-shows/

Diaz, M. (2023, April 21). *What Is AI? Here's Everything You Need to Know about Artificial Intelligence*. ZDNet. https://www.zdnet.com/article/what-is-ai-heres-everything-you-need-to-know-about-artificial-intelligence/

Frohner, C. (n.d.). *Chat GPT: The Loss of Credibility In Schools*. Friar's Lantern. Retrieved August 30, 2023, from https://friarslantern.news/15462/opinion/chat-gpt-the-loss-of-credibility-in-schools/

Giannini, Stefania (2023). https://www.unesco.org/en/articles/generative-artificial-intelligence-education-what-are-opportunities-and-challenges

Gillani, N. (2023, January 26). *ChatGPT Isn't the Only Way to Use AI in Education*. Wired. https://www.wired.com/story/chatgpt-artificial-intelligence-education-networks/

Johnson, A. (2023, January 31). *ChatGPT In Schools: Here's Where It's Banned—And How It Could Potentially Help Students*. Forbes. https://www.forbes.com/sites/ariannajohnson/2023/01/18/chatgpt-in-schools-heres-where-its-banned-and-how-it-could-potentially-help-students/?sh=24706c806e2c

Koski, E., & Murphy, J. (2021). AI in Healthcare. *Studies in Health Technology and Informatics*. https://www.academia.edu/79919540/AI_in_Healthcare

Leimanis, A., & Palkova, K. (2021). Ethical Guidelines for Artificial Intelligence in Healthcare from the Sustainable Development Perspective. *European Journal of Sustainable Development*, *10*(1), 90. https://doi.org/10.14207/ejsd.2021.v10n1p90

Maheshwari, R. (2023, April 11). *Advantages Of Artificial Intelligence (AI) In 2023*. Forbes Advisor INDIA. https://www.forbes.com/advisor/in/business/software/advantages-of-ai/

Mahmoud, M. A., Mahfoud, Z. R., Ho, M.-J., & Shatzer, J. (2020). Faculty perceptions of student plagiarism and interventions to tackle it: a multiphase mixed-methods study in Qatar. *BMC Medical Education*, *20*(1). https://doi.org/10.1186/s12909-020-02205-2

Matzinger, K. (2023, July 27). *The Rising Trend of Teens Using AI for Schoolwork*. Junior Achievement USA. https://jausa.ja.org/news/blog/the-rising-trend-of-teens-using-ai-for-schoolwork

Moore, J. (2023, March 15). *AI in health care: the risks and benefits*. MedicalEconomics. https://www.medicaleconomics.com/view/ai-in-health-care-the-risks-and-benefits

Morley, J., & Floridi, L. (2020, January 25). *An Ethically Mindful Approach to AI for Health Care*. Papers.ssrn.com. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3830536

Morley, J., Machado, C. C. V., Burr, C., Cowls, J., Joshi, I., Taddeo, M., & Floridi, L. (2020). The ethics of AI in health care: A mapping review. *Social Science & Medicine*, *260*, 113172. https://www.sciencedirect.com/science/article/pii/S0277953620303919

Murdoch, B. (2021). Privacy and artificial intelligence: challenges for protecting health information in a new era. *BMC Medical Ethics*, *22*(1). https://doi.org/10.1186/s12910-021-00687-3

Reiss, M. J. (2021). The use of AI in education: Practicalities and ethical considerations. *London Review of Education*, *19*(1). https://www.academia.edu/45070390/The_use_of_AI_in_education_Practicalities_and_ethical_considerations_London_Review_of_Education

Singer, N. (2023, February 6). At This School, Computer Science Class Now Includes Critiquing Chatbots. *The New York Times*. https://www.nytimes.com/2023/02/06/technology/chatgpt-schools-teachers-ai-ethics.html

Smith, A. (2020, April 8). *Using Artificial Intelligence and Algorithms*. Federal Trade Commission. https://www.ftc.gov/business-guidance/blog/2020/04/using-artificial-intelligence-and-algorithms

Svetlova, E. (2022). AI ethics and systemic risks in finance. *AI and Ethics*, *2*(4), 713. https://www.academia.edu/68579750/AI_ethics_and_systemic_risks_in_finance

Yang, S., & Evans, C. (2019). Opportunities and Challenges in Using AI Chatbots in Higher Education. *Proceedings of the 2019 3rd International Conference on Education and E-Learning*. https://doi.org/10.1145/3371647.3371659

Yilmaz, C. (n.d.). AI and Machine Learning Applications in Medicine. *Www.academia.edu*. Retrieved August 30, 2023, from https://www.academia.edu/49182548/AI_and_Machine_Learning_Applications_in_Medi

Zhang, K., & Aslan, A. B. (2021). AI technologies for education: Recent research & future directions. *Computers and Education: Artificial Intelligence*, *2*, 100025. https://doi.org/10.1016/j.caeai.2021.100025