Proceedings of International Conference on Applied Social Science in Education 2024

Vol. 01, No. 01, Agustus 2024
ISSN: XXXX-XXXX (Online)
DOI: https://doi.org/10.31316/icasse.v1i1.6847

BASIC VALUE OF EDUCATION IN THE ERA OF ARTIFICIAL INTELLIGENCE (AI)

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Abstract

Artificial intelligence (AI) technology advances offer great potential to revolutionize education through personalized learning, technology-based curriculum development, and integration within educational institutions. This journal uses a case study approach to analyze the implementation of AI in various academic contexts, collecting data from related literature, institutional reports, and real case studies from Stanford University, Khan Academy, Japanese high schools, and digital inclusion programs in Finland and the United States. The research conducted qualitative analysis to understand the impact of AI on learning personalization, accessibility, and the role of teachers and evaluated the associated privacy policies and ethical challenges. Findings show that AI can improve student engagement and learning efficiency, but also faces challenges such as algorithm bias and data privacy. This research provides deep insights into the role of AI in education and recommends the implementation of strict privacy policies, improved technology access, teacher training, and periodic evaluation to effectively and ethically maximize the benefits of AI.

Keywords: Artificial Intelligence, Education, Personalization of Learning, Accessibility, AI Ethic

INTRODUCTION

Advances in artificial intelligence (AI) technology have changed various aspects of life, including education. AI offers great potential in revolutionizing learning through personalization, technology-based curriculum development, and integration in various educational institutions. These technologies enable the analysis of large amounts of student data, introducing opportunities for personalization of learning, but also require attention to ethical and privacy challenges, such as algorithm bias, transparency, and accountability. The privacy policy should ensure strict protection of student data.

Additionally, accessibility and inclusion are important aspects of education that ensure all students, regardless of background or ability, have equal opportunities to learn. AI can play a key role in creating more inclusive and accessible educational environments, including for students with special needs. Case studies of AI-based digital inclusion initiatives will be discussed to illustrate the impact of this technology.

In the AI era, the role of teachers is also undergoing significant transformation. This technology increases the efficiency and personalization of learning, but the teacher's role in shaping students' character and moral values remains essential. This section will examine the changing role of teachers, the importance of character education in a high-tech context, as well as case studies of teacher training in the integration of AI in teaching.

METHOD

The research method in this journal uses a case study approach to investigate the application of artificial intelligence (AI) in various educational contexts, allowing for in- depth analysis of its implementation and impact. McCarthy (1956) said that artificial intelligence or AI is "the science and engineering of making intelligent machines, especially intelligent computer programs. Intelligence is the ability to achieve desired goals in the real world."

Data was collected from related literature, reports of educational institutions that have implemented AI, and case studies from institutions such as Stanford University, Khan Academy, as well as digital inclusion programs in Finland and the United States. The analysis was carried out qualitatively to understand the

influence of AI on personalization of learning, accessibility and the role of teachers, as well as evaluation of policies related to ethics and privacy.

This research evaluates the key benefitsof AI in education and challenges such as algorithm bias and data privacy, using a multidisciplinary approach to integrate technological, ethical, and pedagogical perspectives. This method provides comprehensive insight into the role of AI in educational innovation as well as recommendations for maximizing the benefits of this technology effectively and ethically.

This research makes a new contribution by combining a comprehensive analysis of the role of AI in educational innovation, accessibility, and the transformation of the role of teachers, supported by real case studies from various educational institutions. This research shows the great potential of AI to increase the personalization of learning, increase accessibility for students with disabilities, and support the role of teachers in teaching.

However, this research also highlights important challenges that must be overcome, including issues of ethics, privacy, and technology access disparities. The multidisciplinary approach used in this research offers deep insight into the complex interactions between technology, ethics, and education, and provides guidance on how to create more effective, inclusive, and equitable learning environments.

RESULTS AND DISCUSSION

A. Innovation and Transformation in Learning through AI

Innovations in learning using artificial intelligence (AI) offer huge opportunities for personalization and efficiency. AI supports personalization of learning by analyzing student data to provide relevant recommendations, identify strengths and weaknesses, and provide real-time feedback. The main benefits of applying AI in education include increased student engagement, learning efficiency, and rapid feedback. However, challenges faced include algorithm bias, data privacy issues, and integration with existing curricula.

Technology-based curricula also show the potential to enhance learning dynamics through digital tools. Technology allows for more interactive learning, access to additional resources, and more accurate automated assessments. However, gaps in technology access, teacher training needs, and dependence on technology are challenges that need to be overcome. Case studies from Stanford University, Khan Academy, and Japanese high schools show that while AI provides significant benefits, integration and data privacy issues remain major concerns.

B. Ethics and Privacy in the Use of AI in Education

The use of AI in education brings significant ethical and privacy challenges. Algorithmic bias is a major problem, with the risk of unfairness arising from unrepresentative data. Transparency and accountability in AI decision-making are also important for building trust. The privacy policy should include strict procedures for collecting, storing and using student data, avoiding privacy violations and ensuring data security.

Case studies such as the massive data breach in the UK highlight the importance of data security and the need for strong privacy policies. Regulations such as the General Data Protection Regulation (GDPR) in Europe play an important role in protecting student privacy and ensuring transparency. Solutions to these challenges include increased transparency, ethical algorithm design, strict privacy policies, and training for teachers and staff on data security.

C. Accessibility and Inclusion with AI

AI has great potential to improve educational accessibility, especially for students with disabilities. Assistive technology such as voice recognition and language translation software makes access to learning materials easier for students with physical or sensory limitations. The benefits of AI include personalization of learning, reduced physical barriers, and increased student participation.

However, challenges such as technology costs, data privacy issues, and teacher training needs need to be addressed. Digital inclusion initiatives in schools and partnerships with technology companies are helping to improve accessibility, but gaps in access and teacher training remain a problem. Case studies in Finland and the United States show progress in increasing participation of students with

disabilities, despite challenges related to costs and equitable access.

D. The Role of Teachers and Character Education in the AI Era

AI is changing the role of teachers by introducing new tasks as personal learning facilitators and technological collaborators. Teachers must master technology and data analysis skills to utilize AI in teaching, while still playing an important role in character education. Even though technology can support learning, character education is still important to teach moral and ethical values.

Strategies for character education in the AI era include the integration of moral values in the curriculum, the use of technology to teach character, and teacher training. Case studies in Singapore and Finland demonstrate efforts to improve teachers' technology skills and character teaching through innovative approaches.

CONCLUSION AND RECOMMENDATIONS

This research shows that the use of AI in education offers a variety of benefits, including personalization of learning, technology-based curriculum development, and increased accessibility and inclusion. AI has the potential to revolutionize education by creating learning experiences that are more personal, dynamic and responsive to student needs, as well as supporting the transformation of the role of teachers in teaching moral and ethical values. However, significant challenges such as algorithmic bias, data privacy, equal access to technology, and training and professional development needs need to be addressed to maximize the benefits of this technology.

Suggestion :

1. Implementation of Policies and Procedures: Educational institutions must adopt strict privacy policies, transparency principles, and ethical algorithm design to protect students' rights and privacy while harnessing the potential of AI.
2. Increased Access and Equity: Work towards providing affordable and accessible AI technology in all educational institutions, especially in less developed areas, to ensure equal access for all students.
3. Training and Professional Development: Provide comprehensive training for teachers in the use of AI and educational technology to enhance their skills and maximize teaching effectiveness.
4. Monitoring and Evaluation: Conduct regular evaluations of the use of AI in education to identify and address emerging issues, such as algorithm bias and privacy concerns, and ensure that the technology is used effectively and ethically.

By implementing these suggestions, educational institutions can create more inclusive, dynamic and equitable learning environments, and harness the potential of AI to optimally support student development.

BIBLIOGRAPHY

(Al-azawei et al., 2016) Al-azawei, A., Serenelli, F., & Lundqvist, K. (2016). Universal Design for Learning (UDL): A Content Analysis of Peer-Reviewed Journal Papers from 2012 to 2015 . 16 (3), 39–56. https://doi.org/10.14434/josotl.v16i3.19295

(Chen et al., 2020) Chen, X., Xie, H., Zou, D., & Hwang, G. J. (2020). Application and theory gaps during the rise of Artificial Intelligence in Education. Computers and Education: Artificial Intelligence , 1 (July), 100002. https://doi.org/10.1016/j.caeai.2020.100002

Filip, D., Macocinschi, D., Nica, S.L., Condurache, B., Stoleru, E., Mihaela, D., Bargan, A., & Zaltariov, M. (2023). Jo ur na l P. International Journal of Biological Macromolecules , 127571. https://doi.org/10.1016/j.chbah.2024.100089

(Ho et al., 2024) Ho, M., Mantello, P., & Vuong, Q. (2024). l P re of. HELIYON , e36251. https://doi.org/10.1016/j.heliyon.2024.e36251

(Raji & Buolamwini , 2019) Raji, ID, & Buolamwini, J. (2019). Actionable Auditing: Investigating the Impact of

Publicly Naming Biased Performance Results of Commercial AI Products.

(Smale et al., 2024) Smale, M. J. C., Fox, J. D., & Fox, A. K. (2024). When being smart trumps AI: An exploration into consumer preferences for smart vs. AI-powered products. Computers in Human Behavior , 161 (May), 108405. https://doi.org/10.1016/j.chb.2024.108405

Lv, Y. (2024). Human-AI interaction research agenda: A user-centered perspective. Data and Information Management , July , 100078. https://doi.org/10.1016/j.dim.2024.100078

(Yoo et al., 2024) Yoo, J. W., Park, J., & Park, H. (2024). Jo ur na l P re r f. HELIYON ,e36392.https://doi.org/10.1016/j.heliyon .2024.e3639