

Opportunities and Challenges in Digital Transformation of Education

Liaojian Qu

Jiangnan University, Wuxi 214122, Jiangsu, China

“Technology can become the ‘wings’ that will allow the educational world to fly farther and faster than ever before – if we allow it.”

–Jenny Arledge

THE WORLD is facing a fast and radical change due to the expedited development of digital technologies. Advances in digital technology are constantly driving the digital transformation of society as a whole. The concept of “digital transformation” first emerged in 1968 and became distinctive in the research literature after the year of 2014 (Reis et al, 2018). In its broad sense, digital transformation refers to the process that new digital technologies are integrated into all sectors of human activity, fundamentally changing all aspects of human life. This leads to a world that is increasingly experienced with, through, and by information technology (Stolterman & Fors, 2004).

The focus and aims of digital transformation vary in distinct sectors. In the sphere of education, digital transformation is the incorporation of digital technologies into educational organizations’ management and operations to elicit changes and innovations in educational paradigms, teaching approaches, organizational structures, and more. It contributes to building a more open, adaptive, and resilient education ecosystem that support equity of quality education and lifelong learning (Zhu & Hu, 2022).

Digital education has the potential to make changes to the traditional education paradigm using its inherent advantages. First, it renders tailored teaching and student-centered instruction possible by allowing teachers and students more freedom in information acquisition and selection. Second, digital education promotes the development of students’ digital competencies, which are essential for their survival in the digital era. Third, the deployment of digital technology and the consequential diverse teaching and learning modes are favorable for fostering students’ interest and autonomy in learning (Lu, 2022).

Furthermore, digital education promotes the equity of education by making the educational system and resources more open and public, thus equalizing educational op

© 2024 Insights Publisher. All rights reserved.



Creative Commons Non Commercial CC BY-NC: This article is distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 License

(<http://www.creativecommons.org/licenses/by-nc/4.0/>) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed by the Insights Publisher.

portunities; it helps mitigate regional disparities in education by facilitating the exchange and sharing of information and resources between nations and regions (Yang, 2022). Additionally, digital education can generate a more learning-friendly environment by making education resources more accessible. That helps increase the efficacy and efficiency of education (Xu et al., 2023).

Despite the said opportunities, digital education brings forth a variety of challenges. For instance, the application of digital technology in education is typically founded on the collection of massive amounts of educational data. Data security and privacy of key stakeholders are vulnerable due to insufficient regulations in this regard. A widely accepted advantage of digital technology is its capacity to provide individualized education. However, the use of big data to profile students and determine their preferences may lead to biased information intake - in other words, the information cocoons. It is true that educational AI has broadened the routes to knowledge acquisition. Nevertheless, its reliance on intelligent machines, which are not yet generally affordable, may result in a new form of educational inequality. As emerging technology, intelligent technology is constantly evolving, which means its applications in education may be susceptible to a variety of vulnerabilities (Dong & Yang, 2023).

For the Chinese government, digital transformation of education has been high on the agenda. The 2024 World Digital Education Conference was co-hosted by the Ministry of Education of China, the Chinese National Commission for UNESCO, and the Shanghai Municipal People's Government on January 30-31 in Shanghai. *Digital Transformation of Education in China: A Review against the Backdrop of the 2024 World Digital Education Conference* in this issue is review of China's explorations and experiments in digital transformation in education (Ding & Wu, 2024). *Ethical Challenges of Educational Artificial Intelligence and Coping Measures: A Discussion in the Context of the 2024 World Digital Education Conference* expounds on the ethical risks in adopting AI technology in education and proposes pathways to establishing a framework of ethics of educational AI (Chen, 2024). It is hoped that the two articles can spark more discussions on rational application of AI in education to support sustaining development of digital education.

References

- Chen, H. (2024). The ethical challenges of educational artificial intelligence and coping measures: A discussion in the context of the 2024 World Digital Education Conference. *Science Insights Education Frontiers*, 20(2):3263-3281. DOI: <https://doi.org/10.15354/sief.24.re339>
- Ding, L., & Wu, S. (2024). Digital transformation of education in china: A review against the backdrop of the 2024 World Digital Education Conference. *Science Insights Education Frontiers*, 20(2):3283-3299. DOI: <https://doi.org/10.15354/sief.24.re340>
- Dong, B. & Yang, J. (2023). Digital transformation of education: Potential risks and its governance. *E-Education Research*, 2023(11):52-59. DOI: <https://doi.org/10.13811/j.cnki.eer.2023.11.007>
- Huai, J. (2024). Promoting Jointly Application, Sharing and Innovation of Digital Education. Available at: http://en.moe.gov.cn/features/2024WorldDigitalEducationConference/KeynoteSpeech/202402/t20240201_1113771.html
- Lu, Q. (2022). Strategies and actions for digital transformation of education. *Primary and Secondary Information Technology Education*, 2022(4):4. Available at: https://kns.cnki.net/kcms2/article/abstract?v=WVDzDAe5jxaDC-V2PMHXuJgeYorfqxNOL_akU6wYZCciSWjY0XkRBQRSY6strk9zmKjDwGMmHxH28rNVvokt1IKy97_TsHj8T9OaTR3_tBHIH3e_hC2OaZYhrL7C1aoO7jGinA=&uniplatform=NZKPT&language=CHS

- Reis, J., Amorim, M., Melão, N., & Matos, P. (2018). Digital Transformation: A Literature Review and Guidelines for Future Research. In: Rocha, Á., Adeli, H., Reis, L.P., Costanzo, S. (eds) Trends and Advances in Information Systems and Technologies. WorldCIST'18 2018. Advances in Intelligent Systems and Computing, vol 745. Springer, Cham. DOI: https://doi.org/10.1007/978-3-319-77703-0_41
- Stolterman, E. & Fors, A.C. (2004). Information Technology and the Good Life. In: Kaplan, B., Truex, D.P., Wastell, D., Wood-Harper, A.T., DeGross, J.I. (eds) Information Systems Research. IFIP International Federation for Information Processing, vol 143. Springer, Boston, MA. DOI: https://doi.org/10.1007/1-4020-8095-6_45
- Xu, H., Huang, C., Wang, Y., Wang, Y., & Liang, S. (2023). The impact of digital education development on educational equity: Theoretical analysis and practical paths. *China Educational Technology*, 2023(10):57-65. Available at: https://kns.cnki.net/kcms2/article/abstract?v=WVDzDAe5jxZGOoTCFfpDKB7QeXdRedh-DPaw0_iwndHnSskXbZsu9D7fjEdqWLn4EifjUK1BQfzbJslTOhSvaHIXncCq2mtmMoFq_tRV6lb59HI9vBAXRhatQRZWSvCJLkBaAoWds=&uniplatform=NZKPT&language=CHS
- Yang, C. (2022). The role of teachers in intelligent education (master's thesis). Southwest University. DOI: <https://doi.org/10.27684/d.cnki.gxndx.2022.001333>
- Zhu, Z. & Hu, J. (2022). Key components of digital transformation in education and its research prospects. *China Educational Technology*, 2022(4):1-8+25. Available at: https://kns.cnki.net/kcms2/article/abstract?v=phUvsea1i7am_xyEX_aRPAL40Vr53C74i87ZtxpWpj9CBpH7fzp7s_4s_ayr5Q5fmmXFKdEZOGJlQf9BvHz8qJqLh_yXIoSxLpWU4zIRI6MjpFdhT-Q6oe2hnUq53EVx9cIyK93vOg0=&uniplatform=NZKPT&language=CHS

Correspondence to:

Liaojian Qu
School of Education
Jiangnan University
Wuxi 214122
Jiangsu
China

E-mail: quliaojian@jiangnan.edu.cn

Conflict of Interests: None

Doi: 10.15354/sief.24.co261