Harnessing AI in Education: Preparing Faculty for an Evolving Landscape

Irene Chang Hui Chung[1], Jefferson Sim Poh Thong[2], Siti Aishah Maulad Jainudin[3]

[1]*Sunway Business School, Sunway University, Sunway City, Malaysia*
[2]*Academic Quality and Innovation, University of Southampton Malaysia, Malaysia*
[3]*School of Research, Swinburne University of Technology Sarawak Campus, Malaysia*

Irene Chang   Jefferson Sim   Siti Aishah

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Abstract

This research reviews scholarly papers to explore the tools and knowledge needed for integrating AI in education, emphasizing faculty preparedness. Key areas include ethics integration, early-level teaching, and interdisciplinary approaches. The review highlights the transformative impact of AI on teaching, the current shortage of AI-specialized faculty, and the need for new competencies in an AI-driven landscape. Ethical concerns and socially conscious solutions are also discussed. The study concludes that a multimodal strategy is essential to equip faculty with the necessary tools and knowledge, ensuring proactive adaptation to the AI's evolving role in education.

Introduction

The rapid advancement of artificial intelligence (AI) is significantly impacting education and higher education, transforming traditional teaching methods, offering new opportunities for personalized learning, data-driven decision-making, and administrative efficiency. However, it also presents challenges in preparing educators to integrate AI tools into their teaching practices effectively. This poster examines current AI trends in education, challenges faced by faculty, and strategies for equipping them with necessary skills and knowledge. It emphasizes the importance of continuous professional development, ethical considerations, and interdisciplinary collaboration to ensure AI enhances rather than disrupts the educational experience.

Method

- The review included scholarly papers published between 2020 and 2024.
- To identify relevant studies, the following keywords were used: "artificial intelligence (AI)", "faculty", "higher education", and "evolving landscape".
- The search was conducted in Google Scholar. From the initial pool of articles, a total of 10 papers were selected.

Results & Discussion

AI's Role in Education

- **Personalized Learning**: AI enables personalized learning experiences, adapting to the needs, pace, and learning style of each student.
- **Administrative Efficiency**: Automates administrative tasks, freeing up educators to focus more on teaching and student engagement.
- **Data-Driven Insights**: AI tools provide insights through data analytics, helping educators identify gaps in learning and tailor interventions.

Challenges

- **Faculty Training and Development**: Need for ongoing professional development to ensure faculty are equipped to use AI tools effectively.
- **Technology Integration**: Challenges in integrating AI tools with existing educational technologies and curricula.
- **Ethical Concerns**: Issues such as data privacy, bias in AI algorithms, and the need for transparency in AI applications.

Future Trends

- **AI-Augmented Teaching**: AI as a tool to augment, rather than replace, the role of educators.
- **Lifelong Learning**: Emphasis on lifelong learning and upskilling for both faculty and students in an AI-driven world.
- **Interdisciplinary Approaches**: Increasing need for interdisciplinary approaches, blending AI with humanities, social sciences, and other disciplines.

Faculty Preparation

- **Continuous Learning**: Faculty should engage in continuous learning to stay updated on AI advancements and their implications for teaching.
- **Collaboration**: Encourage collaboration between faculty, IT departments, and AI experts to ensure successful AI integration.
- **Curriculum Development**: Faculty should be involved in developing and revising curricula that incorporate AI literacy for students.

Conclusion

A multimodal strategy that includes ethics, interdisciplinary methods, and early education on AI tools is essential to prepare faculty for an AI-driven future. It is highlighted that there is a critical need for educational institutions to proactively adapt to the evolving landscape of AI in education. To meet the growing demand for AI skills among students, educational institutions must invest in developing AI-specialized faculty, and provide comprehensive AI education opportunities. As AI continues to advance, educational institutions must promote sustainable development and responsible implementation of AI technologies to ensure that the benefits of AI are realized equitably and ethically throughout the educational landscape.

References

- Alam, A. (2021, November). Possibilities and apprehensions in the landscape of artificial intelligence in education. In *2021 International Conference on Computational Intelligence and Computing Applications (ICCICA)* (pp. 1-8). IEEE.
- Black, N. B., George, S., Eguchi, A., Dempsey, J. C., Langran, E., Fraga, L., ... & Howard, N. (2024, March). A Framework for Approaching AI Education in Educator Preparation Programs. In *Proceedings of the AAAI Conference on Artificial Intelligence* (Vol. 38, No. 21, pp. 23069-23077).
- Bozkurt, A. (2023). Generative artificial intelligence (AI) powered conversational educational agents: The inevitable paradigm shift. *Asian Journal of Distance Education*, *18*(1).
- Kamalov, F., Santandreu Calonge, D., & Gurrib, I. (2023). New era of artificial intelligence in education: Towards a sustainable multifaceted revolution. *Sustainability*, *15*(16), 12451.
- Luckin, R., Cukurova, M., Kent, C., & Du Boulay, B. (2022). Empowering educators to be AI-ready. *Computers and Education: Artificial Intelligence*, *3*, 100076.
- Miller, M. (2023). *AI for educators: Learning strategies, teacher efficiencies, and a vision for an artificial intelligence future*. Dave Burgess Consulting, Inc..
- Pham, S. T., & Sampson, P. M. (2022). The development of artificial intelligence in education: A review in context. *Journal of Computer Assisted Learning*, *38*(5), 1408-1421.
- Roschelle, J., Lester, J., & Fusco, J. (2020). AI and the Future of Learning: Expert Panel Report. *Digital Promise*.
- Schiff, D. (2021). Out of the laboratory and into the classroom: the future of artificial intelligence in education. *AI & society*, *36*(1), 331-348.
- Southworth, J., Migliaccio, K., Glover, J., Reed, D., McCarty, C., Brendemuhl, J., & Thomas, A. (2023). Developing a model for AI Across the curriculum: Transforming the higher education landscape via innovation in AI literacy. *Computers and Education: Artificial Intelligence*, *4*, 100127.

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