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Innovations in Sustainable Higher Education: Generative AI and the Future of Teaching and Learning

Submission deadline: 2025-03-31

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Special Issue Information

Dear Colleagues,

The role of higher education is being radically changed through the most crucial and advanced generation of AI, known as Generative Artificial Intelligence. This special issue of our journal is chiefly devoted to discussing sustainable advances in higher education learning, primarily in terms of generative AI's effects on instruction and education.

GAI is changing how education happens with generous tools and methods that help teachers and enhance students' learning process. Some resources, such as employing the advanced language models, might improve the learning process because they prompt quick feedback and additional study material that suits the specific student's needs. Such technologies allow a degree of individualization that was unthoughtful of a couple of years ago, promoting tolerance and realism in education.

Innovative teaching, qualified as GAI-supported teaching, is now common in many higher learning institutions. By applying complex patterns, these technologies can discern every learner's requirement, varying both the material and the approach to bring. Research has historically proved that adaptive teaching systems do have a possibility of enhancing student's knowledge and performance by a large margin. These systems analyze students' knowledge, and based on the analyzed data, they find the knowledge deficiencies and recommend the specific resource type or activity that can help to constitute the deficiencies.

deficiencies.

Sustainability in higher education can be defined as an institution's ability to manage the environment and be ready to face future challenges. Thus, the inclusion of GAI is beneficial in reaching the goal of sustainability as relates to education by minimizing the costs of educational resources while increasing the effectiveness of the existing methods currently used in education. In addition, for instance, the application of GAI technologies will not only enhance personalization in instructions but will also lead to a decrease in dropout rates—a significant problem in many institutions.

However, some challenges are worth discussing, such as, increase the differences between population groups. Perform the performance test and the efficacy of the GAI Cognitive Ability Test. Several issues require exhaustive consideration. Data privacy and the potential of perpetuating biases are ethical considerations that must be made. These technologies must be applied transparently to prevent the exploitation of students and academic staff; hence, higher education institutions should put in place specific measures to ensure that these technologies do not worsen the situations but improve them. Moreover, proper education for teachers and administrators on such technologies should take place occasionally for better and more ethical usage of these tools.

These issues are discussed in detail in this special issue with the help of contributions from researchers, educators, and practitioners from different fields. We seek contributions that address, among others, the following topics:

1. Innovative GAI-based pedagogical models: We are focused on the works that address the effects of the incorporation of GAI to enhance learning experiences and make them as engaging, individualized, and attractive as possible. These may include using chatbots to reach out to students, AI-based tutors, or any adaptive learning platforms.

2. GAI and assessment: We are looking for papers discussing approaches to employing GAI for improving the effectiveness of assessments by making those more accurate, equitable, and informative. This may

include the use of AI as a tool for analyzing text in essay writing, auto-checking of code in programming classes, and real-time feedback, among others.

3. Ethics and governance of GAI in higher education: Any papers that discuss the application of GAI in the context of HE to motivate ethical analysis arising from the discussed concepts of privacy, equity, and transparency are welcome. To this end, the primary focus of papers we are particularly interested in includes the ethical frameworks and governance systems concerning GAI's appropriate usage in school settings.

4. GAI and sustainability in higher education: We are interested in papers that analyze how GAI can contribute to enhancing green practices in the UK operations of higher education institutions regarding resources, waste, or teaching models as appropriate.

5. Preparing educators for the GAI era: We would like to identify research that focuses on the skills of teachers in the GAI environment and the efficient approaches to professional growth in this area.

6. GAI and inclusion in higher education: We, therefore, welcome papers that describe how GAI can be applied to increase the participation of disadvantaged and marginalized groups in higher learning institutions and other academic ventures.

7. The future of academic work in the GAI era: Submissions should evaluate how specifically GAI transformation changes academic research activities, publishing process, and even scholarly work.

The results of this special issue should help to improve an understanding of the GAI effects and support constructive discussions about the future of the HE. In our opinion, GAI, if applied correctly and thoughtfully, can improve the organization and management of the higher education system, its efficiency, accessibility, and ability to prepare students for further living in a constantly changing world.

changing world.
We welcome authors and researchers to submit their manuscripts, empirical papers, systematic reviews, case studies, and conceptual papers that advance these crucial themes.

Planned Papers

Keywords

Generative Artificial Intelligence; Sustainable Higher Education; Pedagogical Innovation; Personalized Learning; Educational Ethics; Adaptive Assessment; Digital Inclusion; Faculty Professional Development; Technological Governance; Academic Transformation

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