

WayScience



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- biological sciences;
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ADVANTAGES AND DISADVANTAGES OF USING ARTIFICIAL INTELLIGENCE IN HIGHER EDUCATION

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The integration of artificial intelligence technologies into higher education is not just a technical innovation, but an urgent necessity that symbolises a new stage in the development of our education system. Higher education institutions must keep pace with modern technologies, explore the possibilities of artificial intelligence, and teach students to use it responsibly and understand how AI works, how reliable its information is, explain the ethical aspects of using AI, and raise the issue of plagiarism.

Currently, the heads of higher education institutions, in cooperation with the Ministry of Education of Ukraine, have developed recommendations for the responsible use of AI in higher education institutions, 'Artificial Intelligence in Higher Education Institutions: Recommendations for Teachers, Students and Employees of Higher Education Institutions'[1]. This highlights the awareness of university management of both the enormous opportunities and systemic risks associated with the introduction of AI into teaching, research and administrative life. The next document that gives artificial intelligence strategic importance at the state level is the National Strategy for the Development of Artificial Intelligence for 2021–2030 [2]. The Ministry of Digital Transformation, together with the Ministry of Education and Science of Ukraine and experts, has developed methodological recommendations that create a regulatory framework for the responsible use of artificial intelligence.

These recommendations cover legal and ethical standards and aim to increase the competitiveness of domestic higher education institutions through the modernisation of educational, scientific and management processes [3].

The purpose of the study is to conduct an analysis demonstrating the advantages and disadvantages of using artificial intelligence in higher education. The analysis covers three key areas of application: the educational process (teaching and assessment), research activities, and administrative management.

The foundation for the responsible use of artificial intelligence is provided by ethical principles enshrined in international and national documents. These principles systematise aspects such as human-centred values, transparency, accountability, sustainability, confidentiality, security and inclusiveness [4].

Key regulatory frameworks emphasise the need for transparency in the use of AI systems, clear disclosure of how these systems work, what data they use, and how decisions are made [5]. With regard to national regulation, the recommendations of the Ministry of Education and Science and the Ministry of Digital Transformation of Ukraine advocate the promotion of responsible use of AI rather than its prohibition. This approach recognises that AI is an inevitable tool for simplifying routine tasks, allowing teachers to focus on live communication and the development of critical thinking.

We would like to highlight the following advantages of using artificial intelligence. In the field of education: improving the quality and effectiveness of education; transforming the teaching process and learning; personalisation and adaptive learning; instant feedback and performance analysis; inclusiveness and accessibility of education. In the field of optimising administrative and scientific activities, we suggest paying attention to the automation of administrative processes and the strengthening of research activities.

Despite its significant advantages, the uncontrolled or unethical introduction of AI into higher education carries significant pedagogical, ethical, and institutional risks that need to be addressed immediately.

These risks include challenges to academic integrity and educational quality; the risk of excessive dependence and degradation of critical thinking; problems with identifying generated plagiarism and the unreliability of detectors; national recommendations and changes in assessment.

Higher education institution lecturers are encouraged to develop assessment tasks that students cannot simply 'copy' from chatbots. This requires replacing traditional written assignments (essays, tests) with individual or group projects, presentations, and other formats that need a creative approach, critical thinking, and defence of results.

There are also drawbacks related to ethical and socio-cultural risks, data and intellectual property security risks, job displacement risks, and staff anxiety.

A major obstacle to the successful integration of AI could be the skills gap among both students and teachers. This gap can only be bridged through the mandatory creation and implementation of a comprehensive AI competency framework specifically designed for higher education.

Curricula must go beyond simple instruction in the use of tools. They must include in-depth study of ethical literacy, principles of transparency, accountability, and the need for critical reflection on the results generated by AI. This will ensure that AI is perceived as a responsible assistant rather than a programme whose decisions are accepted unquestioningly.

For better cooperation between students and AI, teachers should change their approach to tasks, avoid essays and tests, and instead offer individual projects and creative tasks.

Provide students with information on the principles, limitations, and ethical implications of using AI. In turn, teachers must undergo professional development programmes related to learning the specifics of using artificial intelligence and developing new AI-resistant teaching methods.

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