Artem KOLDOVSKYI, PhD in Economics
Zhytomyr Economic and Humanitarian Institute of the University "Ukraine"

Iryna TALANCHUK, PhD in Law, Associate Professor of the *Department of Sectoral Law and General Legal Disciplines, Open International University of Human Development "Ukraine"*

ARTIFICIAL INTELLIGENCE AS A CATALYST OF DIGITAL TRANSFORMATION IN ENTREPRENEURIAL EDUCATION

The high rate of artificial intelligence development has essentially changed the overall face of education in the world, leading to a complete change to digital transformation in universities and entrepreneurial learning settings. Nowadays, AI is not a technological instrument only, but also a structural power defining the way in which knowledge is created, evaluated, and utilized in academic ecosystems. AI-driven change especially affects entrepreneurial education which is heavily dependent on creativity, innovation, recognition of opportunities, and skill in operating in the face of uncertainty. With more and more higher education institutions facing the demand to not only become more digitally competent and embrace new forms of teaching delivery, AI acts as a driver that not only improves pedagogical processes but the overall university innovation platform as well. This change is supported by the global trends: according to the World Economic Forum (2023), one of the most crucial future workforce skills is AI literacy and digital entrepreneurship, and universities play an increasingly significant role in equipping students to operate in data-driven economic systems.

This issue is particularly topical due to the increasing global digitalization. According to UNESCO (2023), over 70% of higher education institutions have already implemented digital or AI-related learning platforms in their curriculum, but there is still a high level of disparity across nations and universities. The digital and entrepreneurial skill requirement is growing at an alarming rate in which economies are moving to the knowledge-based and technology-driven sectors. The OECD (2024) claims that during 2010-2023, over 40% of

productivity growth was marked by digital-intensive industries, which proves that entrepreneurial success becomes more likely to rely on the knowledge of AI systems, data analytics, and digital business modelling. In the meantime, the World Bank Digital Adoption Index (2024a) proves that AI-level adoption is steadily increasing even on the enterprise level, where small and medium-sized companies, the focus of innovation and regional development, are present. Comprising all these trends, it can be said that the most effective way of entrepreneurial education occurs when universities incorporate AI in the instructional design, project work, and knowledge valorization activities. The institutions risk losing out on global standards of innovation and competitiveness without such integration.

The findings of the worldwide data-driven studies indicate evident and quantifiable effects of AI on the establishment of entrepreneurial abilities. It can be seen that according to the data provided by the World Bank EdTech Readiness Index (2024b), students who study in AI-rich learning environments gain 20-35% higher digital skills development levels, which serve as the value addition of personalized learning tracks, automated feedback, and simulation-based testing. The Global Education Monitoring Report (2023) of UNESCO substantiates the fact that AI-enhanced education promotes more profound engagement and better performance in the field that needs imagination and ability to solve complicated problems. The characteristics are central to entrepreneurial education, with the learners having to continually experiment, evaluate risks, and apply knowledge into possible business concepts. Knowledge valorization is also accelerated by the introduction of AI into the university innovation ecosystems. According to the Higher Education Digital Transformation Survey of the European Commission (2024), universities that use AI in research discovery, innovation management, and startup support state that they identify commercially promising research quicker, more students participate in innovation initiatives, and collaborate more effectively with external industry actors. Such statistics point to the fact that AI enhances the whole innovation pipeline, including idea generation, and their market-driven implementation.

Regardless of these improvements, there are still inequalities. The analysis conducted by OECD (2024) demonstrates that the levels of digital

maturity differ significantly among universities, especially in the emerging economies where institutions experience the lack of IT infrastructure, high-cost technology, and staff preparation. However, the growing presence of open-source AI tools and cloud-based solutions show that strategic institutional decisions can be used to address inequity, and even universities that are low-resource can be involved as agents in the digital transformation processes. Notably, it has been revealed that AI-assisted entrepreneurial courses can advance the opportunity recognition and capabilities of market analysis as well as designing digital business plans. According to the University Skills Benchmark (2024) prepared by the World Economic forum, students who are trained based on the integration of AI in the way they are taught entrepreneurial skills are 15-25% more skillful in the main entrepreneurship skills and more likely to initiate or join startup activities. These consequences put AI as a disruptive source of entrepreneurial preparedness.

To be able to reap the most of AI in entrepreneurial education, universities ought to strive at a number of interconnected approaches that constitute a larger digital transformation agenda. First, the AI literacy should be introduced in educational programs as one of the basic skills to make sure that students are aware of AI systems functioning and how these systems could be used to facilitate business ideation, strategic planning, and innovation management. Second, higher education institutions must consider the AI-supported program that supports project-based and practical learning so that students can access real-time market research, develop digital solutions prototypes, and experience the process of making entrepreneurial decisions. Third, AI will be a component of the university innovation ecosystem, which links the knowledge valorization centers and startup incubators with the research units and external partners. This integration enhances research findings in translating the findings into viable entrepreneurship directions. Simultaneously, it is crucial to develop the faculty and build institutional capacity, as evidenced by Eurostat (2024), providing the correlation between the success of digital transformation initiatives and staff competence and institutional preparedness. All these steps should be implemented ethically and inclusively to make sure that AI reinforces, and not threatens the educational equity, academic integrity, and human-centered values, as the UNESCO guidelines (2023) provide.

In addition to the global evidence and institutional trends described above, the practical significance of AI-driven entrepreneurial education has been demonstrated through a series of workshops delivered by Artem Koldovskyi in 2025 to international academic audiences. These workshops focused on the intersection of digital transformation, artificial intelligence, and innovative teaching methods, providing applied insights into how AI tools reshape learning environments and expand opportunities for student engagement. The first workshop introduced participants to contemporary AI trends, inclusive STEM learning practices, and the pedagogical value of AI-assisted personalization, while the second workshop demonstrated concrete applications of AI platforms such as Elicit, Zapier, n8n, Paperpal, and AI-powered accessibility tools for multilingual and inclusive education. Through real-world cases, hands-on demonstrations, and methodological examples, these sessions illustrated how AI enhances creativity, supports entrepreneurial thinking, and strengthens students' ability to design and test digital business models. The contribution of these workshops reinforces the paper's central argument that AI is not only a conceptual catalyst but also an applied mechanism for transforming entrepreneurial education by equipping learners with practical tools, adaptive environments, and innovation-oriented digital competencies.

Finally, artificial intelligence is speeding up the digital transformation of entrepreneurial education through supporting the innovation process, offering new learning opportunities, and reinforcing the connection between the academic knowledge and the real economic practice. The statistics provided by the World Bank, OECD, UNESCO, Eurostat, and the World Economic Forum prove that the environment based on AI is more effective in promoting student competencies, involvement in the process of innovation activities, and the ability of the university to build a powerful ecosystem of entrepreneurship. In addition to the technological progress, AI is a paradigm change in the way universities equip students to live in an ever-changing, unpredictable, and digitalized world. With economies moving towards ever more AI-dependent value creation, the university that takes the initiative to integrate AI into entrepreneurial education will have a higher chance of producing graduates who will be successful in the innovation sector, initiating sustainable business ventures, and enhancing the knowledge economy in the region and globally. The facts prove this as AI is not

only the instructional addition but it is the trigger of the overall change making entrepreneurial education flexible, inclusive and visionary to address the requirements of the digital age.

References

1. European Commission. (2024). Higher Education Digital Transformation Survey 2024: Summary of Findings. Directorate-General for Education, Youth, Sport and Culture. https://education.ec.europa.eu

2. Eurostat. (2024). Digital economy and society statistics. European Commission. https://ec.europa.eu/eurostat

3. OECD. (2024). OECD Digital Economy Outlook 2024. Organisation for Economic Co-operation and Development. https://www.oecd.org/en/publications/oecd-digital-economy-outlook-2024-volume-2_3adf705b-en.html

4. UNESCO. (2023). Global Education Monitoring Report 2023: Technology in Education. United Nations Educational, Scientific and Cultural Organization. https://digitallibrary.un.org/record/4020460

5. World Bank. (2024a). Digital Adoption Index (DAI). World Bank Open Data. https://data.worldbank.org

6. World Bank. (2024b). EdTech Readiness Index. World Bank Education Global Practice. https://www.worldbank.org/en/topic/education

7. World Economic Forum. (2023). The Future of Jobs Report 2023. World Economic Forum. https://www.weforum.org/publications/the-future-of-jobs-report-2023/

8. World Economic Forum. (2024). University Skills Benchmark Dataset. Centre for the New Economy and Society. https://www.weforum.org