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## **EUROPEAN PRACTICES OF IMPLEMENTING INNOVATIVE EDUCATIONAL TECHNOLOGIES INTO PROFESSIONAL TRAINING OF MANAGERS**

### **ЄВРОПЕЙСЬКІ ПРАКТИКИ ВПРОВАДЖЕННЯ ІННОВАЦІЙНИХ ОСВІТНІХ ТЕХНОЛОГІЙ У ПРОФЕСІЙНУ ПІДГОТОВКУ МЕНЕДЖЕРІВ**

The relevance of the study is determined by the objective of adapting the system of professional training for managers to the realities of the Fourth Industrial Revolution (Industry 4.0) and developing digital competencies critical for managers in conditions of uncertainty and technological change. Modern managers must not only possess economic and managerial knowledge, but also be able to work with big data, use artificial intelligence (AI) and manage virtual teams. In this context, innovative educational technologies (EdTech) are not only tools but also a strategic foundation for modernising education.

According to the European University Association (EUA) report ‘Trends 2024’, digitalisation and new formats of learning and teaching are among the key factors influencing the overall strategy of higher education institutions (HEIs) in the European Higher Education Area (EHEA) [5, p. 9]. These changes require universities to rethink the flexibility of their educational offerings in order to manage diverse student profiles.

The conceptual basis is the transition to a competency-based model, in which EdTech serves as a means of shaping the components of managers' digital competence. This is consistent with the European DigComp framework. However, in 2025, the focus will shift to AI literacy. In November-December 2024, discussions at AI4EDU (EU) conferences emphasised that developing AI literacy is critical for navigating the evolving educational environment and for the responsible and effective use of AI tools in professional activities [1]. The

strategic pivot towards AI literacy within the established competency-based model (aligned with frameworks like DigComp) reflects the immediate imperative for management education to address the transformative role of AI. This focus is essential, as developing a deep understanding of AI's capabilities and limitations is now the critical competency required for future managers to ensure the responsible, ethical, and effective leverage of AI tools in their professional activities.

Blended learning remains the basic principle of the educational process. However, according to an analysis of European EdTech startups in 2025, the European imperative is to transition to AI-based adaptive learning systems. These systems diagnose the strengths and gaps in each student's knowledge, adjust content and pace in real time, and provide targeted practice and instant feedback. This allows learning to go beyond the classroom and creates a culture of continuous learning [4]. At the same time, the implementation of technology should focus on the practical application of knowledge and the development of soft skills through simulations and project work. Blended learning effectively combines synchronous and asynchronous digital formats with traditional face-to-face communication. European universities (e.g., The Open University in the United Kingdom, TUM in Germany) actively use the Flipped Classroom model with MOOCs and individualised online assignments, which allows students to learn theoretical material at their own pace and devote classroom time to intensive practical activities, case studies, and scientific and practical discussions [8, p. 161].

European experience confirms the effectiveness of AI solutions for personalising learning and adaptive testing. A 2024 systematic review shows a positive correlation between AI-driven personalised learning pathways and improved academic performance, engagement and student retention. The study also highlights the critical importance of ethical management and equitable access to AI tools [9, p. 36]. The documented positive correlation between AI-driven personalised learning and enhanced student outcomes, including academic performance and retention, validates the technological effectiveness of AI solutions in European EdTech. However, this success is fundamentally contingent upon critical institutional management ensuring both the ethical governance of these tools and equitable access to prevent the exacerbation of digital divides.

The application of Learning Analytics (LA) and Big Data in European HEIs in early 2024 focuses on the development of new adaptive LA models that integrate traditional pedagogical approaches with big data analysis. This helps institutions make better data-driven decisions and improve the quality of the educational process [2, p. 26]. The current focus on developing adaptive LA models that integrate Big Data with established pedagogical practices signals a maturation in European HEIs' approach to EdTech. This integration is crucial for moving beyond basic reporting to generating actionable, data-driven

insights that directly inform institutional decision-making and substantially enhance the quality and personalization of the educational process.

In preparing managers for 2025, business simulation games are considered an essential tool for developing leadership skills. Further integration of VR/AR is expected to create immersive technologies that enhance the realism of management decisions and help students in teams practise negotiation, task allocation and risk-taking skills in virtual companies [7]. This contributes to improving student performance and engagement through competition and the application of theoretical knowledge in practice.

The success of EdTech implementation is closely linked to strategic institutional management. At the European level, this is reinforced by the legal framework: the adoption of the EU AI Act (the world's first comprehensive AI law) by the European Parliament requires HEIs to ensure the safety, transparency and non-discrimination of AI systems, as well as to publish summaries of copyrighted data used to train generative AI. This establishes a clear ethical and legal framework for the use of AI in education, which is critical for the training of future managers [6]. The emerging EU AI Act significantly elevates the importance of strategic institutional governance in EdTech, making legal compliance, particularly concerning AI transparency and data ethics, a non-negotiable component for higher education institutions. This regulatory pressure reinforces the need for HEIs to proactively embed ethical and safe AI integration into their management training and educational strategies.

The training of teaching staff remains a key strategic principle. In 2024, European forums discussed the need to develop a common European approach to AI in education management, including the ethical use of data and ensuring the fairness and inclusiveness of AI tools. This requires teachers to have not only technical skills, but also an understanding of the ethical implications of EdTech implementation [3, p. 3]. The necessity for a common European framework for AI in education management underscores a critical shift from mere technical proficiency to a comprehensive understanding of the ethical, fair, and inclusive implications of EdTech among teaching staff. This move highlights that effective and responsible AI adoption relies fundamentally on proactive pedagogical and ethical training for educators, treating them as key institutional managers of these technologies.

The conceptual foundations for implementing EdTech in management training in the European context are shifting towards AI-driven personalisation and immersive technologies. The success of this process depends on: 1) strategic integration of AI (taking into account the EU AI Act) to create adaptive learning paths; 2) large-scale use of VR/AR for practical simulation of management decisions; 3) application of Learning Analytics to improve quality; 4) development of AI literacy among teachers and students. European experience shows that EdTech transformation is a systemic project that requires

not only investment in technology, but also deep institutional and ethical management.

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