

Olga KOVAL,

PhD, Associate Professor

Kyiv National University of Technologies and Design

IMMERSIVE LEARNING ECOSYSTEMS: INTEGRATING AI AND BUSINESS SIMULATIONS TO FOSTER DIGITAL ENTREPRENEURSHIP

Background: In an era characterized by rapid digital transformation and economic volatility, traditional pedagogical models—primarily reliant on passive lectures and static case studies—are increasingly insufficient for preparing students for the realities of modern entrepreneurship. Higher education institutions face a critical mandate to bridge the gap between theoretical knowledge and the dynamic skills required by the digital labor market.

This study explores the emergence of Immersive Learning Ecosystems as a core component of entrepreneurial education. It analyzes how the integration of Artificial Intelligence (AI) into business simulations transforms the learning experience from passive observation to active, risk-driven agency. The objective is to demonstrate how these ecosystems foster essential competencies such as strategic agility, digital literacy, and resilience.

The implementation of immersive ecosystems bridges the disconnect between academic preparation and industry expectations. By mastering data-driven decision-making and adapting to VUCA (Volatile, Uncertain, Complex, Ambiguous) environments during their studies, graduates gain a competitive advantage. However, institutions must also address digital inequality to ensure inclusive access to these technologies. Ultimately, this pedagogical shift moves beyond knowledge transmission to cultivate the mindset of the continuous innovator required by the future digital economy.

Immersive learning ecosystems are gradually becoming a core component of modern higher education, especially when universities aim to prepare students for rapidly changing digital markets. The integration of artificial intelligence into business simulations creates an environment where learners can not only understand theoretical principles of entrepreneurship but also experiment with decision-making in dynamic, risk-driven virtual contexts. Through such formats students begin to perceive entrepreneurship not as a

distant professional trajectory but as a space where they can safely test ideas, adjust strategies and observe the consequences of their actions almost in real time. This provides a sense of agency and builds confidence, which is often difficult to achieve through traditional lectures.

AI-enhanced simulations allow participants to encounter complex market scenarios that imitate authentic economic behaviour. Instead of simplified models, students interact with adaptive systems that respond to their decisions, analyse trends and generate unpredictable shifts in supply, demand or competition. This makes the learning process more engaging — and more realistic - because the virtual environment reacts similarly to the real entrepreneurial ecosystem. As a result, students gain a deeper understanding of how digital markets operate, why innovations must adapt quickly, and how strategic thinking shapes long-term outcomes. The role of AI becomes especially visible when learners receive personalized feedback that highlights the strengths and weaknesses of their entrepreneurial approach.

The immersive format also transforms the traditional relationship between theory and practice. Theoretical knowledge from management, marketing or financial planning is no longer absorbed passively: instead, students repeatedly apply it in simulation-based tasks that require immediate reasoning. When the system presents unexpected disruptions - such as sudden changes in consumer preferences or supply-chain failures - participants must adjust their strategies while maintaining a critical understanding of risks. This type of experience strengthens digital literacy and teaches students to make decisions under uncertainty, which is essential for future digital entrepreneurs.

Another important aspect of immersive ecosystems lies in the development of soft skills. Collaboration inside a shared simulation encourages communication, negotiation and leadership, since students must justify their choices and collectively navigate entrepreneurial challenges. AI tools support this process by analysing group interaction patterns and offering insights into the effectiveness of teamwork. In this way, the educational environment becomes both technological and social, integrating emotional and cognitive learning into a single space. Such a combination prepares students for the realities of entrepreneurial collaboration in digital industries.

Moreover, immersive ecosystems serve as a bridge between academic knowledge and industry expectations. Many companies increasingly rely on data-driven decision-making, automated analytics and virtual testing of business strategies. When students practise these skills during their studies, they enter the labour market with a competitive advantage - they are already familiar with AI-mediated tools and understand how to process large amounts of information to generate entrepreneurial insights. This means that universities adopting AI-supported simulations contribute to the broader creation of innovation ecosystems, where academic institutions, businesses and future entrepreneurs interact more productively.

At the same time, the integration of AI into learning environments raises several questions. Students must learn to critically evaluate algorithmic recommendations - not simply follow them - because automated systems can contain biases or offer solutions that require human review. Developing this critical awareness becomes part of entrepreneurial competence, since real digital markets often rely on automated tools that need thoughtful supervision. Another challenge concerns digital inequality, as not all learners have equal access to high-quality immersive technologies. Universities therefore need to ensure that immersive learning remains inclusive and culturally sensitive, allowing diverse groups of students to benefit from digital entrepreneurship training.

Despite these challenges, immersive learning ecosystems show significant potential for shaping entrepreneurial mindsets. They encourage curiosity, experimentation and resilience - qualities that are essential for anyone entering innovation-oriented fields. The integration of AI strengthens the adaptability of simulations, while the simulations themselves create a safe arena for exploring complex business environments. When these components function together, they build a modern educational framework capable of preparing students for digital transformation processes and global economic shifts.

In general, the use of AI-based business simulations offers a valuable opportunity to rethink entrepreneurial education. It allows universities to design more interactive courses, support personalized learning pathways and create a sense of involvement that motivates students to explore digital entrepreneurship

more deeply. By combining technological tools with human creativity, immersive learning ecosystems form a foundation for new educational practices that reflect the realities of the digital economy. This approach contributes to the development of students who are not only knowledgeable but also capable of innovating, adapting and leading in highly interconnected environments - and this is precisely what contemporary entrepreneurship requires.

A crucial learning outcome is the cultivation of 'skeptical reliance' on AI. Students learn to view algorithms as powerful tools that nevertheless require human oversight to prevent ethical drifts. Furthermore, designing these ecosystems with 'accessibility-first' principles ensures that digital entrepreneurship remains a democratizing force, rather than an exclusive privilege.

Ultimately, AI-integrated immersive ecosystems do not replace the educator but amplify the pedagogical reach. They transform the university from a repository of past knowledge into a laboratory for future creation, producing graduates who are not merely survivors of the digital economy, but its architects.

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