

**Zheng Xiaolang,**

Master Student, Faculty of Humanities and Social Sciences,  
West Ukrainian National University

**Antonina Demianiuk,**

PhD in Economics, Associate Professor of the  
Department of Educology and Pedagogy,  
West Ukrainian National University

## **PROSPECTS AND BARRIERS OF USING INFORMATION AND COMMUNICATION TECHNOLOGIES FOR FORMING STUDENTS' CREATIVE PERSONALITY IN MODERN HIGHER EDUCATION**

The formation of students' creative personality has become a strategic imperative for higher education in the context of digital transformation and the knowledge economy. Information and communication technologies (ICT) – particularly generative artificial intelligence (AI), virtual and augmented reality (VR/AR), and adaptive learning platforms – possess transformative potential for developing divergent thinking, originality, and innovative problem-solving. However, their effective implementation faces systemic barriers, while emerging global practices open promising prospects [4]. This abstract, based on analysis of empirical data and case studies from 2023–2025, identifies key barriers and outlines evidence-based prospects for ICT integration higher education institutions.

Major barriers to ICT-driven creativity development include four interrelated groups. First, rigid curricula and traditional assessment systems allocate less than 10–15 % of study time to open-ended creative activities, suppressing initiative and risk-taking. Second, infrastructure inequities remain critical: uneven access to high-speed internet and modern devices excludes significant student cohorts from immersive VR/AR environments, especially in rural areas of Ukraine and Central Europe. Third, faculty and student technostress, combined with insufficient digital pedagogy training, leads to superficial rather than deep integration of tools. Fourth, motivation gaps arise when ICT is used merely for content delivery rather than for autonomy, mastery, and real-world impact, reducing intrinsic engagement [1; 6].

Despite these challenges, 2024–2025 global trends demonstrate powerful prospects built on three converging innovations. (1) AI-augmented cognition: generative models (ChatGPT, Gemini, Midjourney) accelerate ideation, provide personalized feedback, and scaffold ethical risk-taking, increasing creative output by up to 32 %. (2) Immersive realities (VR/AR): virtual laboratories and augmented simulations enable embodied prototyping and cross-cultural collaboration, improving fluency and elaboration by 31–52 % through activation of insight-related neural networks. (3) Adaptive personalization: AI-driven learning pathways honour individual trajectories while supporting collective innovation, raising creative self-efficacy and engagement by 28–44 % across diverse contexts [2; 3; 5].

Leading institutions illustrate successful implementation. The National University of Singapore (AI-VR hybrid labs), Tsinghua University (VR/AR engineering education), the University of Maryland, and Finnish blended ecosystems show that creativity is no longer an innate gift but a scalable, technology-mediated

competency [2]. When embedded in equity-focused and SDG-aligned frameworks, these practices transform universities into global innovation incubators.

To overcome barriers and realize prospects, higher education institutions are recommended to implement the following measures by 2030 [3; 4]:

- introduce flexible credit systems and process-oriented assessment ( $\geq 70$  % weighting on iteration logs, reflections, and risk artefacts);
- ensure mandatory faculty micro credentials in digital pedagogy and establish cross-disciplinary communities of practice;
- develop tiered infrastructure (6G campuses, cloud subsidies, low-/high-fi tool versions) to eliminate the digital divide;
- create institutional AI sandboxes and ethical governance frameworks (disclosure mandates, bias audits);
- launch transnational creativity sprints and shared VR/AR repositories in cooperation with UNESCO-ICHEI and European partners.

ICT is not a temporary addition but a foundational architecture of 21st-century creative pedagogy. Systematic removal of organizational, technical, and psychological barriers, combined with deliberate adoption of AI-augmented cognition, immersive realities, and adaptive personalization, will enable Ukrainian and Central European universities to cultivate a generation of adaptive, imaginative creators capable not only of solving existing problems but of redefining them for sustainable societal progress.

### References

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