

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ  
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менеджменту

# **Цифрові трансформації та інноваційні технології в економіці: виклики, реалії, стратегії**

**Digital Transformations and innovative technologies in the  
economy: challenges, realities, strategies**

**Матеріали**  
Міжнародної науково-практичної конференції  
(Україна, Суми, 17-19 червня 2022 р.)

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Для науковців, науковців, студентів, аспірантів, представників бізнесу та громадських організацій і вищих навчальних закладів та широкого кола читачів.

The materials of the International scientific and practical conference "Digital transport and innovative technologies in the economy: challenges, realities, strategies" provide the results of scientific research focused on the search for a systematic solution to multidisciplinary problems in the field of electronic business and technological innovations, digital transformation of educational systems, the introduction of innovative technologies in financial sector. .

For scientists, researchers, students, postgraduates, representatives of business and public organizations and higher education institutions and a wide range of readers.

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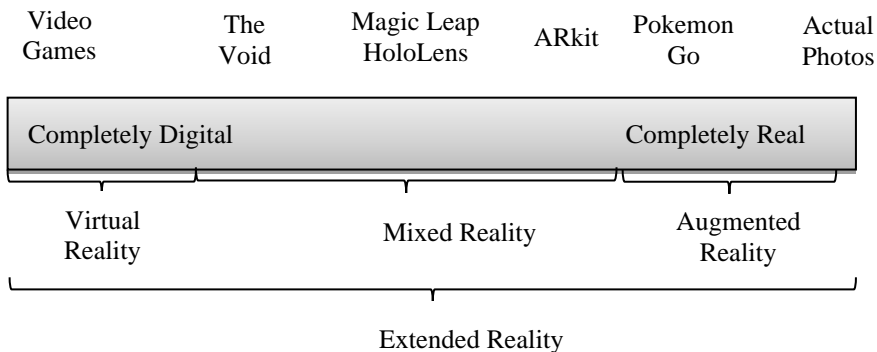
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## CONDITIONS THAT DETERMINE THE EFFECTIVENESS OF THE USE OF IMMERSIVE LEARNING TECHNOLOGIES

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In the context of Russia's full-scale aggression, the creation of an inclusive and adaptive education system is of particular relevance. Above all, alternative ways of providing educational services and corresponding teaching and learning methods should be formed. One of the effective tools in these conditions is the use of immersive learning technologies. Stanford University research shows that immersive learning technologies, including augmented (AR), virtual (VR), and mixed (MR) reality, can lead to a 76 % increase in learning efficiency.

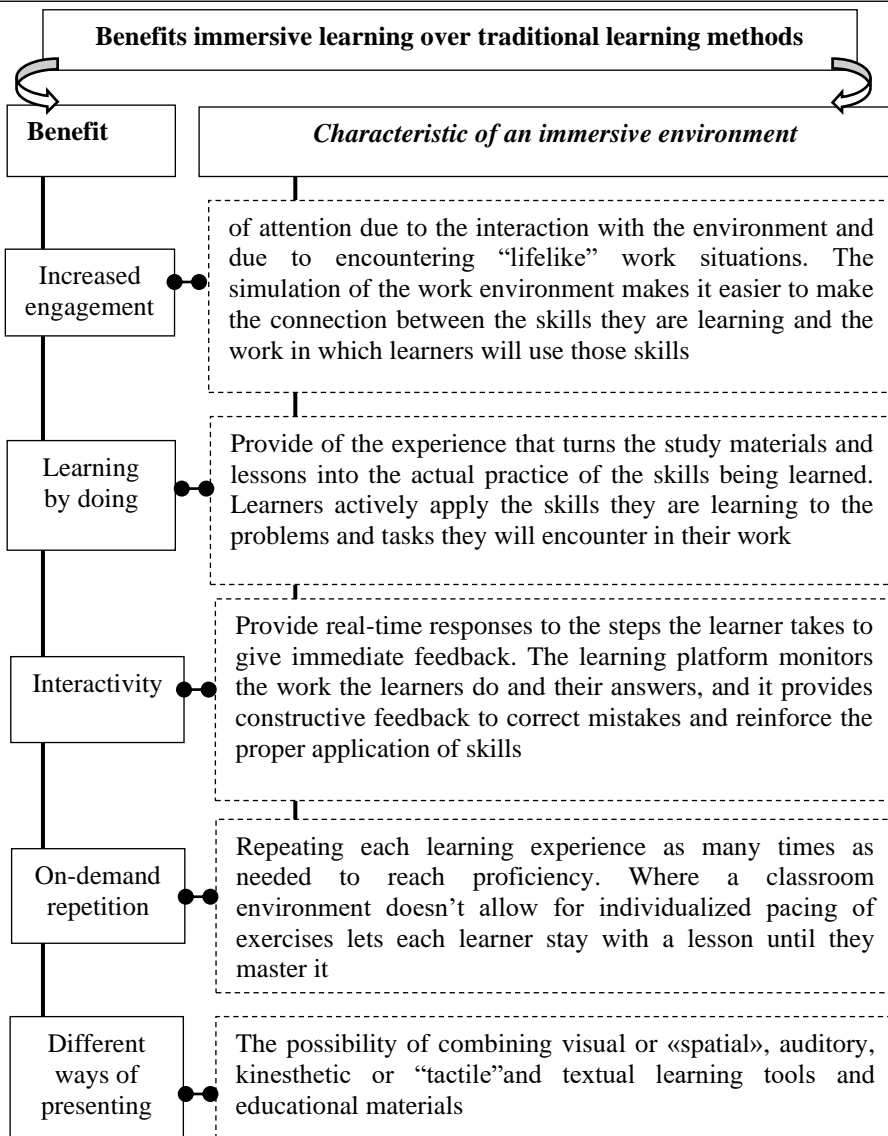
Based on S. Creque [1] we defined immersive learning as a complex of immersive techniques that puts the learner into an environment that simulates the real-world use of the skills they are learning. It accelerates learning by teaching the learner in the context in which they will use the skills. Immersive technology we propose to be defined according to the approach of N. Burnett as «the integration of virtual content with the physical environment that allows the user to engage naturally with the blended reality» [2] (Figure 1).



**Figure 1. Reality – Virtuality Spectrum of Learning Technology[3]**

The feasibility of their implementation is determined by the benefits summarized in Figure 2.

To realize all the benefits of immersive learning, it is necessary to form a set of conditions both at the level of the learners and at the level of educational institutions.



**Figure 2. Benefits of immersive learning over traditional learning methods**

The development of immersion learning technologies requires the digital inclusion of all participants in the educational process while ensuring a high level of digitalization in general.

To form an effective model of immersive learning, first, it is necessary to have a number of resources both at the university level and at the level of students.

Based on the approach Van Dijk (2005) [4] approach, they include:

- material resources: funds and property in universities and students that can be exchanged for equipment, services, and other items that provide access to an immersive environment;

- intellectual resources academic and administrative staff of universities and students that determine general literacy, knowledge, and cognitive abilities that provide support for intellectual and motivational access to an immersive environment;

- psychological resources of HEIs academic and administrative staff and students – is the perception and attitude to information and communication technologies and the Internet, such as self-efficacy, confidence, and other psychological and subjective elements, which contribute to motivational access as a basis of creation of an immersive environment;

- space-time resources academic and administrative staff of universities and students – available time and space to support access and the adoption of an immersive environment. The large time spent on creating an immersion environment is a significant obstacle to the introduction of immersion learning methods;

- industry resources educational sphere describe the resources provided by information and communication technology providers needed to support the formation of an immersive environment.

The quantitative and qualitative characteristics of the resources listed above determine the level of the possibility of introducing and using immersion technologies by participants in the educational process.

The problem of the development of immersion learning technologies in this context is a consequence of the lack or limited access to a certain type of resource.

As a rule, each type of resource requires the adoption of information and communication technologies and the Internet and possible digital inclusion. At the same time, it should be emphasized that access is a necessary (but insufficient) condition for the creation of an immersive environment.

Motivational access is defined as the desire to adopt and use immersion learning technologies through the acquisition, ownership, and continuous learning or improvement of digital competencies.

Physical and finance access determines the ownership of, or permission to use, various devices, such as computers, smartphones and tablets, Internet connections, and different immersion technologies. Also, the concept of material access comprises other types of access that are required to reach complete disposal

and connections such as conditional access (subscriptions, accounts, and pay-per-view).

It should be noted that physical access is not equal to finance access, which includes all costs associated with the use of computers, connections, peripherals, software, and services for an immersive environment. These costs, depending on the various characteristics and specifics of the use of immersion learning technologies, can vary significantly.

Intelligent access refers to the possession of direct intellectual abilities and digital literacy to support the adoption of immersion technologies and the Internet.

Thus, for the active introduction of immersion technologies, it is necessary to ensure the availability of all types of resources and access to them both at the level of university staff and at the level of students. Only in this case will all the advantages available in this type of teaching method be realized.

### References

1. Creque, S. (2021, November 25). *The advantages of immersive learning in digital technology*. Simplilearn.com. <https://www.simplilearn.com/learning-in-digital-technology-article>
2. Burnett, N. (2019, September 4). *Immersive technology and Education — Deep dive #2*. Medium. <https://medium.com/dataseries/immersive-technology-and-education-deep-dive-2-85862981fd6b>.
3. Yuen, S. C., Yaoyuneyong, G., & Johnson, E. (2011). Augmented reality: An overview and five directions for AR in education. *Journal of Educational Technology Development and Exchange*, 4(1). <https://doi.org/10.18785/jetde.0401.10>.
4. Van Dijk, J. A. (2005). *The deepening divide: Inequality in the information society*. Sage Publications.