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INNOVATIVE INTERACTIVE TECHNOLOGIES IN THE TRAINING OF PROFESSIONAL EDUCATION SPECIALISTS BY MEANS OF DIGITAL TECHNOLOGIES

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Abstract

This article is devoted to the study and analysis of the role and influence of innovative interactive technologies in the training of professional education specialists using digital technologies. Digital technologies are becoming an increasingly integral part of our daily lives and impacting various fields, including education. The article examines the modern foreign and domestic experience of using modern innovative interactive technologies in the professional training of future vocational education specialists. The possibilities of implementing augmented reality (AR) and virtual reality (VR) to create immersive learning

environments are described. Emphasis is placed on adaptive educational platforms that are able to individualize the educational process taking into account the personal needs and individual characteristics of students. The analysis of the influence of interactive technologies on the activity and interest of students, increasing the level of involvement and motivation to study was carried out. The advantages of these technologies in the training of specialists are analyzed, their impact on student motivation, understanding of complex concepts and the creation of interactive learning environments is noted. It highlights how the adaptability of learning platforms helps create personalized learning paths for each student, taking into account their needs and pace of learning. The experience of using innovative and interactive technologies in various fields, including education, science and technological development, is outlined.

The results of the study indicate the importance of integrating digital technologies into the educational process to achieve more effective learning and development of relevant skills among students of vocational education.

Keywords: professional education; innovative interactive technologies; future professionals of professional education; educational process; adaptive educational platforms; digital technologies.

Statement of the problem in a general form and its connection with important scientific or practical tasks. The modern experience of using innovative and interactive technologies in the professional training of future vocational education specialists represents a wide range of approaches and implementations. Here are some examples of foreign and domestic experience:

The Swedish system of teacher training is actively introducing innovative methods and technologies into the professional training of teachers. They use video analysis of lessons, virtual classrooms to practice skills, as well as pedagogical platforms for collaboration and sharing of experiences.

The Teach First project in the UK is creating a network of young teachers who are supported to use technology to improve learning in low-performing schools.

The Edutopia platform in the US offers teachers access to teaching resources and methods, including video lessons, interactive practices and ideas for innovative teaching.

The eTwinning project allows teachers to collaborate with colleagues from other countries using interactive technologies. Together they create educational projects, exchange experience and develop innovative methods.

The initiatives of the Institute for the Modernization of the Content of Education in Ukraine contribute to the implementation of interactive learning methods in the training of teachers and vocational education specialists.

The Institute of Information Technologies and Learning Tools is actively engaged in the development and implementation of interactive learning platforms, virtual learning environments and other technologies in the professional training of teachers.

The «Osvita.UA» and «Modern Edu Hub» projects seek to unite teachers and educational institutions for the joint development of innovative approaches to education and training of specialists.

These examples demonstrate how innovative and interactive technologies are successfully used in the professional training of vocational education specialists both abroad and in Ukraine. They help improve the quality of education, train competent specialists, and involve more students in the learning process.

Innovative and interactive technologies are key components of digital transformation in the field of education and science. They create new opportunities for learning, cooperation, research and contribute to improving the assimilation of knowledge [4].

The purpose of the article. To carry out an analysis of modern foreign and domestic experience in the use of innovative interactive technologies in the professional training of future vocational education specialists by means of digital technologies and to provide proposals for further improvement of innovative pedagogical activities in vocational education.

Analysis of the main researches and publications on the raised problem.

In the early 2020s, digital technologies significantly impacted the field of education and science, changing the approach to learning, research and collaboration. Here are some possible digital trends in the field of education and science for 2023:

Hybrid education, a hybrid approach to learning is likely to become even more common. This means combining traditional classroom learning with online resources and distance learning.

Augmented Reality (AR) and Virtual Reality (VR) their use of AR and VR can enable the creation of immersive learning environments. They can be useful for visualizing complex concepts, virtual tours, and even hands-on exercises.

Adaptive learning platforms, i.e. artificial intelligence technologies, allow you to create learning platforms that adapt to the needs and pace of each student, providing an individual approach.

Online labs and simulations allow students to perform experiments and exercises in a virtual environment, which is especially useful when access to real labs is limited.

Increased number of open online courses. Well-known universities and educational organizations continue to provide free access to their courses through MOOC (Massive Open Online Courses) platforms.

Distance collaboration and research, where researchers from all over the world can collaborate online, sharing knowledge and data through specialized platforms.

Increased Focus on Digital Literacy The growing importance of digital technologies requires students and teachers to be able to use them effectively, understand the concepts of cyber security and be aware of digital practices.

Evaluation based on data, that is, the use of data about the educational process, allows for more accurate evaluations of students' knowledge and the effectiveness of teaching methods.

Blockchain in higher education, this technology can be used to ensure the security and authenticity of academic records, as well as to create systems of attestation and verification of competencies.

Growth of electronic libraries and resources. Access to digital libraries, scientific databases and resources is becoming more and more common, which facilitates faster access to relevant information.

But these trends can change over time and vary by region and context.

Ukrainian scientists and experts are actively engaged in research and implementation of innovative interactive technologies in various fields, in particular in education, science and technological development. Here are some examples of scientists who have made significant contributions to this field:

The design of the educational environment using the means of augmented and virtual reality in general secondary education institutions and the use of information and communication technologies in education is actively researched by S. Lytvynova, S. Semerikov [5].

Scientist O. Pometun investigates an innovative approach to the organization of learning using interactive technologies in the education of younger schoolchildren, thanks to which learning becomes interesting, diverse, personally oriented, democratic and humane [6].

V. Bykov [1] made a significant contribution to the research of the problem of innovative development of means and technologies of open education systems, cloud-oriented

educational environments, and the strategic direction of modernization of the education system in Ukraine through the integration of cloud computing technologies [1].

I. Gevko, who actively cooperates with educational institutions and teachers for the implementation of innovative approaches [3, 2], made scientific progress in research on the use of technologies in education and the development of interactive educational programs.

Yes, a young startup does not stay away from this process either – Ilya Filipov, the founder of the online education studio platform «EdEra», which provides online courses in various subjects, online courses, interactive textbooks, integration models and various plugins for online platforms that contribute the use of interactive learning methods [7].

Oleksandr Elkin, a specialist in the field of information technologies and educational technologies, founded a number of successful educational projects, one of which is EdCamp Ukraine, which promotes the popularization of online education and innovative teaching methods [8].

These are just a few examples of Ukrainian scientists and experts who are actively working on innovative interactive technologies in education and science. Their research and development contribute to the improvement of the quality of education and the involvement of students in the educational process.

Presenting main material. Innovative and interactive technologies have great potential for training specialists in professional education using digital means. They can improve the effectiveness of training, create a more active environment and help prepare competent professionals for the demands of today's labor market.

Ukrainian scientists and experts are actively engaged in research and implementation of innovative interactive technologies in various fields, including education, science and technological development.

This is an important step for improving the quality of education, developing scientific research and ensuring technological progress in Ukraine. Let's consider some aspects of this experience:

Development of interactive educational platforms and electronic resources for students of different levels of education.

Implementation of online courses and open educational resources to ensure access to knowledge.

Using virtual and augmented reality to enrich the educational process.

Use of interactive applications and programs for visualizing scientific data and conducting research.

Implementation of electronic scientific journals and platforms for joint work on research.

Application of computational methods and artificial intelligence for the analysis of scientific data.

Development of innovative programs and platforms to support startups and innovative projects.

Application of interactive methods in the process of development and testing of new technologies.

This experience shows that Ukrainian specialists are actively implementing innovative interactive technologies to achieve improvements in various fields. This contributes to the development of the country, provides access to modern methods of education and scientific research, and also promotes technological growth and innovation.

Research conclusions and prospects for further research. From the research of innovative and interactive technologies in the training of vocational education specialists by means of digital technologies, the following conclusions can be drawn and the prospects for further scientific research can be determined:

Improved learning efficiency. The use of innovative and interactive technologies helps to increase the effectiveness of education by involving students in a more active learning process.

Provision of practical training. Simulations, virtual labs and other interactive tools help practice practical skills without real risk or expense.

Personalization of learning. The use of digital technologies allows you to create individual learning paths and adapt the material to the needs of each student.

Enhanced access options. Online platforms and distance learning resources allow students to study at any time and place.

Development of creativity and critical thinking. Interactive tasks and an open environment stimulate students to develop their creativity and critical thinking.

Innovative and interactive technologies open up new opportunities in the training of vocational education specialists. Digital tools facilitate understanding of complex concepts, increase student engagement, and create more dynamic and interactive learning environments. The development of these technologies is an important step forward in improving the process of education and training of qualified specialists.

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Data Availability Statement

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Conflicts of Interest

The authors declare no conflict of interest.

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