WORLD FORUM ON ACADEMIC INNOVATION AND DIGITAL LITERACY

CONCEPT OF CREATIVE COMPETENCE AND ITS SCIENTIFIC INTERPRETATION

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Annotation: This work briefly describes the relationship between digital technologies and creative thinking. Digital tools help to develop creative thinking and generate innovative ideas.

Key words: digital technologies, creative thinking, innovation, education, creativity

Русский: В данной работе кратко рассматривается взаимосвязь цифровых технологий и креативного мышления. Цифровые инструменты способствуют развитию творческого

Ключевые слова: цифровые технологии, креативное мышление, инновации, образование, творчество

Annotatsiya: Ushbu ishda raqamli texnologiyalar va kreativ fikrlash o‘rtasidagi bog‘liqlik qisqacha yoritiladi. Raqamli vositalar ijodiy fikrlashni rivojlantirish va innovatsion g‘oyalar yaratishga xizmat qiladi.

Kalit so’zlar: raqamli texnologiyalar, kreativ fikrlash, innovatsiya, ta’lim, ijodkorlik

Digital technologies are a set of technologies based on the creation, processing, storage, transmission, and presentation of information in digital (0 and 1) format. They have deeply penetrated all spheres of modern society and the education system, forming the basis of the process of “digital transformation.”

Main types of digital technologies

In education and pedagogical practice, the following main digital technologies

are widely used:

Information and Communication Technologies (ICT) – systems for exchanging information through computers, the Internet, and communication tools.

Multimedia technologies – tools that enrich the learning process through text, images, audio, and video.

Online learning platforms – systems such as Moodle, Google Classroom, and Coursera.

Artificial Intelligence (AI) – systems for individualizing and analyzing the learning process.

Virtual and Augmented Reality (VR/AR) – technologies that simulate real environments for educational purposes.

Cloud technologies – services for storing and sharing data via the Internet.

Creative thinking

Creative thinking is the ability of an individual to find original, new, and effective solutions to problematic situations. This process differs from simple memorization, as it is based on analyzing and processing existing information and expressing it in the form of new ideas. Creative thinking reflects not only intellectual capacity but also imagination, the ability to make independent decisions, and a high level of cognitive flexibility.

Scientifically, creative thinking is often associated with divergent thinking, which refers to the ability to find multiple different solutions to a single problem. In this process, critical thinking, imagination, intuitive approaches, and the synthesis of new ideas play an important role. This enhances an individual's creative potential and develops flexible approaches to problem-solving.

Digital technologies are considered an important tool in developing creative thinking. Modern information and communication technologies provide learners with quick access to a wide range of information resources, which accelerates the

generation of new ideas. Internet platforms, multimedia tools, interactive software, and artificial intelligence systems enrich the learning process and strengthen creative approaches.

In addition, digital technologies transform education into a visual, interactive, and learner-centered process. For example, virtual laboratories and simulations make it easier to understand complex processes and help learners develop creative approaches to problem situations. Online collaboration platforms also support idea sharing and collective creative activity.

E. P. Torrance describes creative thinking as the process of identifying problems, forming hypotheses, and generating original solutions. According to him, the development of creative thinking requires a free and supportive environment, and digital technologies create exactly such an interactive setting.

J. P. Guilford associates creative thinking with divergent thinking, emphasizing the ability of an individual to find multiple solutions to a single problem. Digital technologies expand access to diverse sources of information, thereby enhancing divergent thinking.

C. Rogers views creativity as a process that develops in conditions of psychological safety and freedom of expression. According to him, the digital learning environment provides learners with opportunities for free thinking, experimentation, and testing their ideas.

№	**Aspect**	**Description (Content)**	**Advantages (Pedagogical/Scientific Benefits)**
1	**Wide access to information**	Digital platforms and the Internet provide learners with access to diverse scientific, educational, and	Expands knowledge base, supports idea generation, enhances divergent thinking and independent research

		multimedia resources.	skills.
2	**Interactive learning environment**	Multimedia tools, virtual laboratories, and simulations actively engage learners in the learning process.	Increases motivation, improves engagement, and strengthens experiential and creative learning.
3	**Problem-based simulation**	Digital technologies create real-life or simulated problem situations for learners to solve.	Develops critical thinking, decision-making skills, and innovative problem-solving abilities.
4	**Collaboration and communication**	Platforms such as Google Classroom, Moodle, and Zoom enable group work and idea exchange.	Enhances teamwork, idea sharing, social creativity, and collective knowledge construction.
5	**Artificial intelligence and adaptive learning**	AI-based systems personalize learning paths based on individual abilities and performance.	Supports individualized learning, optimizes creative potential, and improves learning efficiency.

Additional scientific explanation

From a pedagogical perspective, digital technologies act as a catalyst for creative cognition, as they transform traditional learning into an active, learner-centered process. According to constructivist theory, learners construct knowledge more effectively when they interact with digital environments that allow experimentation, exploration, and reflection.

Moreover, cognitive psychology emphasizes that exposure to multiple information sources (multimodality) significantly enhances divergent thinking, which is a core component of creativity. Therefore, digital environments not only transmit information but also stimulate higher-order thinking skills, including analysis, synthesis, and innovation.

Digital technologies significantly enhance creative thinking by providing access to information, fostering interaction, enabling problem-solving environments, supporting collaboration, and personalizing learning through AI systems. As a result, they play a crucial role in developing innovative, independent, and creative learners in modern education systems.

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