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## FEATURES OF THE IMPLEMENTATION OF NEW CREATIVE TECHNOLOGIES AIMED AT THE FORMATION AND DEVELOPMENT OF CREATIVE AND CRITICAL THINKING OF AN INDIVIDUAL

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**Abstract.** Today, in the era of the emergence of a highly developed industrial society based on information and communication technologies, Azerbaijani statehood, its individual institutions, and its education system face colossal historical challenges. The main goal of these tasks is to educate a noble, compassionate, tolerant, humane, fair and patriotic individual, an intellectual, and finally, an ideal citizen – the support of the national state, capable of living and acting in accordance with the specific requirements of modern global society. The education of a new person, thinking sensibly, critically, optimistically and progressively, completely free from all negative and transient elements, actions that degrade human dignity, superstitions, prejudices, extremism and fanaticism. To successfully complete this important task and achieve high results, a systematic and comprehensive education system based on progressive principles (humanization of education, differentiated approach to students, pedagogical tolerance. etc.) and advanced modern technologies operates in educational institutions of the Republic of Azerbaijan. The creation of a creative atmosphere for creative thinking of an individual, which is a prerequisite for the effective organization of the educational process, using advanced information technologies and pedagogical tools, determines the relevance of the presented article from both a scientific, technical and pedagogical point of view.

**Key words:** creative technologies, creative and critical thinking.

**Introduction.** The rapid transformations taking place in contemporary global society necessitate corresponding changes across all spheres of human activity, particularly within the field of education. The emergence of the information society, characterized by technological innovation, globalization, and knowledge-based development, has fundamentally altered the requirements placed upon modern individuals and educational institutions. In this new socio-cultural environment, education is no longer limited to the transmission of theoretical knowledge; rather, it has become a dynamic process aimed at developing creative, critical, analytical, and adaptive thinking skills capable of responding to the challenges of the twenty-first century. Under such conditions, the organization of the educational process exclusively through traditional teaching approaches no longer ensures the desired level

of effectiveness. Conventional methods frequently fail to sustain students' motivation, intellectual engagement, and active participation in the learning process, resulting in decreased academic performance and limited creative potential. Consequently, the modernization of education through the integration of innovative pedagogical approaches and advanced educational technologies has become one of the most urgent priorities of contemporary educational policy and practice.

The intellectual and cultural content of the modern world is continuously reshaped by progressive developments in science, technology, economics, and education. These global innovations penetrate all spheres of social life, transforming traditional forms of thinking, communication, and interaction. At the same time, the rapid expansion of information technologies and digital communication environments significantly influences social consciousness, national culture, linguistic systems, and patterns of human behavior. Such transformations require individuals to adapt to the principles and realities of the modern information society and to develop competencies that correspond to the creative and innovative spirit of the contemporary era. These processes are especially visible in education systems, where the need for the systematic implementation of innovative teaching technologies and modern pedagogical models has become increasingly evident. In this regard, the organization of educational activities based on interactive, student-centered, and technology-oriented approaches has acquired exceptional relevance and strategic importance for the sustainable development of society.

In the context of higher education, the application of creative technologies represents one of the most significant directions of pedagogical modernization. The integration of information technologies, digital educational resources, interactive teaching methods, multimedia tools, and critical-thinking-oriented pedagogical strategies creates favorable conditions for increasing students' cognitive activity, independent learning abilities, creativity, and problem-solving skills. Such approaches not only modernize the educational environment but also contribute substantially to the formation of intellectually developed, socially responsible, professionally competent, and innovative individuals capable of functioning effectively in rapidly changing social and professional contexts. The educational process, therefore, must be organized in a way that encourages students not only to acquire knowledge but also to critically analyze information, generate new ideas, collaborate effectively, and apply acquired competencies in real-life situations.

The relevance of the present research is further strengthened by the educational reforms implemented in the Republic of Azerbaijan during recent decades. Azerbaijan's accession to the Bologna Process on May 19, 2005, as well as the subsequent introduction of the credit-based education system and curriculum reforms, created fundamentally new conditions for the modernization of the national education system. The transition from traditional reproductive teaching models to active and interactive pedagogical approaches significantly changed the content, objectives, and methodological foundations of education. Issues such as learner-centered instruction, the development of critical and creative thinking, intellectual independence, and lifelong learning became central priorities within educational policy. Modern education began to focus on the formation of a personality capable of continuous self-development, rational thinking, innovation, and active participation in social and professional life. Under these conditions, the use of creative technologies in education has become not only a pedagogical necessity but also a strategic factor influencing the intellectual and cultural development of society.

The object of the research is the organization of the educational process in higher educational institutions of the Republic of Azerbaijan through the application of creative technologies, including information technologies, modern teaching tools, and pedagogical approaches aimed at developing critical and creative thinking. The subject of the research includes innovative teaching methods, interactive learning models, and personality-oriented educational approaches that contribute to students' intellectual development, educational competence, and progressive worldview formation. The primary objective of the study is to substantiate the effectiveness of creative technologies and innovative

pedagogical methods used in organizing educational activities in higher education institutions. In particular, the research seeks to demonstrate the positive influence of technologies stimulating creative and critical thinking on students' intellectual potential, academic competence, and personal development, while also developing a scientifically grounded methodological framework for the effective integration of modern educational technologies into university-level instruction.

To achieve these objectives, a comprehensive set of research methods was employed, including scientific-theoretical analysis of pedagogical literature, examination of educational standards and methodological materials, questionnaires, interviews, pedagogical observations, testing, and systems analysis of students' adaptation to innovative teaching methods. The theoretical and methodological foundation of the research is based on contemporary pedagogical theories, including personality-oriented education, activity-based learning, interactive pedagogy, contextual and problem-based teaching approaches, and theories related to educational informatization and digital learning environments.

The scientific novelty of the study lies in the theoretical and practical substantiation of the positive transformative impact of creative technologies and interactive teaching methods on the organization of educational activities in higher education institutions. The research proposes a conceptual model for the implementation of innovative educational technologies and scientifically justifies the effectiveness of interactive and information-technology-based teaching methods in enhancing students' intellectual and creative capacities. Furthermore, the study identifies new perspectives for the effective integration of advanced information technologies into the educational process and contributes to the modernization of pedagogical practices within the higher education system. Particular attention is devoted to identifying the mechanisms capable of stimulating students' creative energy, intellectual independence, and motivation for continuous self-improvement in the context of modern educational realities.

### **Discussion.**

#### **I. The essence and nature of new creative technologies used in the educational process of higher education institutions**

Today, the intellectual and cultural content of a constantly changing and rapidly renewing world, accompanied by global reforms, is shaped by progressive innovations in science, education, economics, and technology. These innovations, corresponding to the spirit and demands of the era, in various forms persistently penetrate all spheres of human life and activity, changing its formal structure and internal organization. Innovations that actively impact traditional social and cultural norms, ways of thinking and mentality that have evolved over centuries require us to behave in accordance with the specific rules of the modern information society, adapting to the creative atmosphere and development trends that are actively changing the positive image of the world. All of this is most clearly evident in the modern domestic education system and requires from specialists working in this field extraordinary activity, and the widespread and consistent introduction of new teaching technologies into the pedagogical process. In connection with the above, the organization of various lessons and trainings in educational institutions based on new teaching methods has acquired particular relevance and has become an urgent need for the sustainable development of society. The rapid penetration of creative ideas into the modern education system has increased attention to such concepts as "creativity", "creativity" and "creative technologies". Since the beginning of the 21st century, under the influence of the inevitable process of globalization, the concept of "creativity" (lat. creatio – creation) has gained particular popularity among linguistic elements that have become firmly entrenched in our daily life and vocabulary. This word, which at first glance, due to its semantic structure, means "an act of creativity", is not in fact a synonym for the expression "creativity". If creativity is a natural result of relationships aimed at creating something new and constantly leading existence to positive development, then creativity is a set of qualities capable of realizing this creativity. In other words, creativity is the possession of adequate creative abilities. Thus, creativity is the ability of a person to reject standard ideas, useless rules, and patterns that limit and hinder progress, to translate original ideas into real-

ity, and to reveal the unique qualities of existence. In the creative process, the subject, experiencing an extraordinary mental and intellectual state, achieves the materialization of original ideas and the creation of various artifacts in various fields of activity – science, art, education, etc. Creativity arises as an act of organizing special and necessary conditions for creativity. As a result, the creative personality begins to acquire its essential characteristic – creativity (Kuryшева, 2011). Creativity is the combination of already known information in such a way that it becomes possible to create something new. Creativity expresses a content-creating whole, consisting of the unity of intellect and imagination, and creates opportunities for the subject to think and work with information in an extraordinary way, thereby destroying the stereotypes of familiar tools and templates and reaching a qualitative level with completely different dimensions (Anderson, L. W., & Krathwohl, D. R. (Eds.) (2001)

According to Merriam-Webster, Inc. (founded in 1831 by American linguist and lexicographer Noah Webster, 1758–1843), a new branch of Encyclopaedia Britannica, Inc. (founded in 1831 by American linguist and lexicographer Noah Webster, 1758–1843), published in the United States and billed as a new branch of Encyclopaedia Britannica, Inc. (founded in 1831 by the American linguist and lexicographer Noah Webster, 1758–1843), since 1964, the word “creative” was created in 1678.

The famous Austrian psychologist Sigmund Freud (1856–1938) argued that a subject who finds himself in a creative environment, “under threat” from this environment, realizes his secret desires in ways that are considered culturally acceptable. This idea applies both to individuals with unique talents and to people learning the mysteries of science in educational institutions, including students. American psychologist Joy Paul Guilford (1897–1987) conducted important scientific research on creativity and identified its characteristics. The following characteristics also emerge when students use creative technologies in their learning:

1. The ability to define a problem and understand its structure – in other words, having a specific perspective that reveals the presence of a particular problem in a subject.
2. The "running nature" of thought and reasoning, or the generation of ideas at a certain speed.
3. An original thinking style – the ability to devise new, fundamental methods for solving a problem.
4. Flexible thinking – the ability to find new associations and generate original ideas.
5. The ability to improve a specific object by adding appropriate details and synthesizing new ideas.

6. The ability to find solutions to a problem through analysis and synthesis and to use both old and new ideas in the solution process. The famous American psychologist Ellis Paul Torrance (1915–2003) argued that people, starting from the preschool period of their lives, constantly live in a creative atmosphere in one sense or another and react to it differently at each subsequent stage. Depending on the intensity of these reactions and the degree of activity of their impulses, each subject adapts to the creative environment in his own way and at a unique level. When this adaptation is of an extraordinary nature, when intellectual and spiritual freedom is achieved by overcoming all social and psychological limitations and stereotypes rooted in the imagination, the “act of creativity” known to us occurs. The main goal of lessons conducted on the basis of modern pedagogical standards and active learning is to create such an environment for students and to bring to a creative level the mental and intellectual potential that they carry within themselves, but cannot realize for one reason or another (Kapucu, S., Deniz, M., Culfa, G., Doğan, B., Turan, B., Yüksel, M. V., & Akdemir, A., 2019). E. Torrance argued that at this time, students move from the naive creativity inherent in preschool age (the ability to move away from mediocrity, manifested in one form or another, from patterns and stereotypes rooted in the subconscious) to its more complex and advanced forms – cultural (a cognitive condition that is prevalent in children due to lack of relevant experience), verbal (one of the forms of cognitive or perceptual creativity, manifested as the ability to move away from stereotypes as much as possible. For example, the ability to find verbal associations and put forward original ideas in a problematic situation), non-verbal (one of the types of cognitive creativity, expression of creative abilities



in the form of artistic images, descriptions, etc.), etc. It is precisely these opportunities, created for students at school through the use of creative technologies, that allow them in the future to reach a new level of creativity, to reach the point of “talent” (the act of creating great and brilliant creative products) (Dorfman, 2015). Thus, in order for students to be able to effectively use creative technologies in literature lessons in comprehensive schools of the appropriate level, it is necessary, first of all, to determine whether their behavior is adequate for the modern educational environment and to provide it with an appropriate structure. In this case, the participation of the following components in this process is especially important:

- 1) be prepared to study and deeply understand the material presented in class;
- 2) demonstrate a genuine interest in participating in the educational process;
- 3) be able to make the right choices regarding creative technologies in the educational process;
- 4) have a healthy temperament, determined by such criteria as optimism, enthusiasm and self-confidence. In addition, a student learning using creative technologies must be completely independent in his judgment regarding the subject of study and make maximum use of the power of his intuition. It should be noted that when using creative technologies in higher education institutions, a large number of psychological barriers may arise that hinder students' creativity for various reasons:

1. The functional isolation of the subject – the student's inability to leave his “comfort zone” (the area in which the subject feels most confident and safe, in other words, the situation in which the student feels psychologically protected) in the learning process.

2. Submission to internal censorship – activation of an internal mechanism that expresses the student's fear of making a mistake, being criticized, or becoming the object of ridicule.

3. The primary focus is not on the idea, but on the impressions it creates.

4. Disruption of the regime that determines the generation of ideas, for various reasons.

Organizing classes at universities across the country to enhance students' creative potential through the use of creative and information and communication technologies helps foster innovative, analytical, and critical thinking in the younger generation, and ultimately, the development of creative individuals. This process is carried out within the framework of systems such as “Theory of Descriptive Problem Solving” and “Continuous Development of Creative Thinking”. These systems are multidimensional and encompass the preschool, school (primary, secondary, and tertiary), and post school periods of professional development. According to the author of this theory, the Soviet writer, science fiction writer and inventor Genrikh Saulovich Altshuller (pseudonym Genrikh Altov – 1926–1998), the formation of the image of a creative personality using modern technological resources and creative technologies should become the intellectual content of the modern information society (Effectiveness of TRIZ Invention for Enhancing Design Skills. (2025). The theory of descriptive problem solving is the teaching of descriptive (creative) problem solving, which makes it possible to find highly effective creative solutions in the educational process. Creative technologies encompass productive design, software, digital media based on electronic solutions, and modern advertising.

## **II. The nature and mechanisms of influence of modern educational technologies aimed at developing critical thinking**

Among modern educational technologies widely used today in organizing the teaching of subjects in secondary schools, methods aimed at developing critical thinking play a special role and significance. The core essence of such technologies, their cognitive and pedagogical mission, is to enable students to penetrate the deepest layers of intelligence, understanding all objects and events from within, through the power of critical thinking, so that they can deeply understand the world and correctly evaluate truth. As can be seen, the cognitive foundations of the above-mentioned teaching technologies are aspects related to critical (analytical, synthetic, didactic, skeptical) thinking. Critical thinking is a system of mental judgment that analyzes objects and events from a critical perspective, strives to draw reasonable conclusions, adequately evaluate these conclusions, interpret them, make

reasoned verdicts on them, and finally apply the final conclusions to situations and problem solving. In a general sense, critical thinking is the highest form of cognitive ability and is manifested in a person's ability to question any information received, including their own beliefs. In a narrow sense, critical thinking means evaluating established values with the obligatory introduction of appropriate adjustments. It should be noted that the term "critical thinking" was introduced by the famous American philosopher and educator John Dewey (1859–1952). In his works, he presented this concept as "reflective thinking" and assessed it as "an active, consistent, and cautious approach to any belief" (Belski, I., Baglin, J., & Harlim, J., 2013).

To achieve high results when using modern learning technologies aimed at developing critical thinking, students must consider the following points:

- 1) The overall level of development of the student body;
- 2) The appropriateness of the creative environment and teaching methods to the age characteristics of the students;
- 3) The individual characteristics of the students;
- 4) The specific features and characteristics of the subject matter;
- 5) Positive learning motivations;
- 6) The individual and general interests of the students;
- 7) Students' creative activity;
- 8) The presence of a positive microenvironment within the team.

The main characteristics of critical thinking include the ability to actively observe, the ability to freely analyze, interpret and generalize, as well as the ability to correctly understand a situation and give it an adequate (both subjective and objective) assessment. It is precisely due to these properties that thinking includes logical elements in the learning process, relies on metaknowledge (knowledge about knowledge or knowledge engineering, special planning, modeling, various trainings and conceptual tools that involve modification of knowledge) and broad criteria of intelligence (clarity, accuracy, truth, depth, fairness, scope, significance) (Kadirov U, 2023).

The modern education system uses various technologies that serve to develop students' critical thinking, and their use has a special effect and forms various feelings, emotions and mental states in students from an emotional, psychological and intellectual point of view. The development of technologies used in organizing lessons in general education institutions and aimed at developing critical thinking is formed by three successive stages of the basic model involved in the educational process:

1. The recall stage – at this stage, the student's existing knowledge and ideas about the subject being studied are "recalled" and updated, personal interests are formed, and goals related to the subject are defined.

2. The stage of comprehension (understanding the essence) – at this stage, students become familiar with new information and systematize it. During this time, each student has the opportunity to reflect on the essence of the subject being studied, learn to compare existing and new information, and formulate appropriate questions. This helps students develop their personal perspectives, and they begin to independently comprehend the material being studied using various methods.

3. Reflection stage – at this stage, students consolidate the new knowledge they have acquired, make appropriate changes to their initial ideas about the subject, and incorporate new concepts into them.

With the above model, students master various ways of integrating information, acquire the ability to form personal opinions and express positions based on various ideas, concepts and acquired experience, learn to build a logical chain of conclusions and evidence, and are able to express their thoughts fluently, confidently and correctly in relation to the environment. In the first stage, called the "Call" or "Guide to Thinking," popular techniques such as "Association," "Memory Search," "Complete the Statement," and "Yes-No" are used to revive existing knowledge and ideas about the topic being

studied, to present simple arguments, proof of its relevance, as well as to “awaken” information about elements that exist a posteriori in the student’s subconscious regarding a given topic.

What type of information will be contacted and based on what criteria will it be systematized at the “perception stage”? At this stage, the cognitive stereotypes formed in the educational environment regarding the title of the work begin to disintegrate, and the student looks at the subject being studied from a completely different perspective and begins to think about its nature in a different, more progressive and critical way. Thus, they acquire the ability to compare existing and new information and formulate appropriate questions. Building on this skill, students begin to express their personal position and independently comprehend the material being studied using various methods.

At the “stage of comprehension,” the student consolidates the new knowledge he has already acquired about the work, makes adequate corrections and changes to his knowledge and initial ideas about the work, and also includes new concepts in them.

One of the widely used teaching methods today is the student-centered approach. Its application in the educational process is particularly relevant given the socio-political, moral, and cultural transformations taking place worldwide. To achieve these progressive goals, a student-centered approach to education is necessary. At the same time, the needs, capabilities, and inclinations of each participant in the educational process must be taken into account. Only then can the student be an active participant in the educational process alongside the teacher.

By applying a personalized approach to education, all components of education, including the natural goals of education, its content, methods, and technological techniques, are powerfully positively impacted. Thus, an adequate learning and development environment is created for students. The main value and importance of using the method of personal orientation in the educational process lies in revealing the unique individuality of each student. At the same time, the active environment created in the classroom is focused not only on students who are exceptionally active, but also on each student and their development, regardless of their individual mental and cognitive abilities, needs and interests.

Classes organized using the personal orientation method are conducted based on the principles of humanistic pedagogy and psychology. Among these principles, the following stand out as particularly effective: the principle of self-actualization; the principle of individuality; the principle of subjectivity; the principle of choice; the principle of creativity and achievement; the principle of trust, confidence and support.

From the above, an important conclusion follows that the personality-oriented method has a more pronounced positive impact on the differentiation and individualization of learning. However, it is also important to consider that when approaching the learning process from a person-centered perspective, individualization or personalization should be relative, not absolute. It should be noted that the use of the personal orientation method in the learning process opens up the following opportunities for teachers and students: creating interest and motivation in students for the learning process; increasing the cognitive activity of students; taking into account the individual characteristics of each student; directing educational work towards the development of cognitive abilities and creative activity of each student; creating conditions for the implementation of a flexible individual learning trajectory; differentiation and individualization of the educational process; creation of conditions for systematic monitoring (reflection) of the knowledge acquired by students; activation by the subject teacher of appropriate correction mechanisms during the educational process; monitoring the dynamics of student development.(Umarov B, 2021).

Creative technologies aimed at developing students' creative and critical thinking in the educational process also serve to democratize and humanize education. One of the most important elements that play a decisive role in the humanization of modern education is the promotion and agitation of universal human values during the teaching of humanities lessons. Thus, lessons based on creative technologies play a unique role in educating the younger generation in the spirit of humanism. Thanks

to them, students are introduced to the glorious pages of world history, developing their intellectual potential and acquiring a positive character through the example of historical events and outstanding personalities who are the driving forces behind these events, their way of life, behavior, and heroism, fair, courageous and noble images. In this way, they develop a positive essence within themselves, define an active civic position, and are raised in the spirit of love for the Motherland, sympathy for national culture and historical traditions. It should be noted that in the process of teaching humanities-oriented lessons, students develop adequate competencies and a code of dignity based on the synthesis of humanistic ideas, love for traditions and patriotic feelings.

Historical context is more than a collection of events, symbols, and numbers. It is a living, dynamic process. Millions of people participate in it, and their collective and individual destinies are being decided. Only by studying and understanding the historical process can we confidently determine what is true and what is false. Because history is also a life lesson, a faithful guide offering many alternatives for choosing the right path and a worthy way of life. Students of history witness the difficult and thorny path of humanity from primitive society to the modern information society, and at every step of this path they see wars and conflicts. Developing their analytical and critical thinking under the influence of historical narratives, scholars constantly attempt to identify the ideals to which humanity aspires. Ultimately, they come to the conclusion that humanism, relevant in all historical periods, is the only and uncontested path to sincerity. When organizing and conducting lessons in the humanities, it is necessary to use active and interactive teaching methods – discussions, various role-playing games, project work – to increase the effectiveness of historical narratives. The use of such methods in the learning process allows students to gain a deeper understanding of historical events, further improving their ability to think analytically and critically, as well as to draw adequate logical conclusions. By studying the history of noble, just, compassionate, and courageous people, students develop a special attitude toward traditions, moral norms, socio-cultural prohibitions, sacred rules, and respect for the freedom and personality of others. These moments instill in students a sense of pride and responsibility for humanity, increase their confidence in the future, and encourage them to take an active stance in life, to be creative, kind, and virtuous.

#### **Suggestions.**

1. The topic of “creative technologies in education”, which has important social aspects, suggests the expansion of scientific research and a more in-depth study of the various components of a creative approach to learning.

2. The research topic discussed in the presented scientific article requires active scientific discussion among an even wider audience and ongoing study at the academic level as a subject of linguistic education for the younger generation.

3. The objects and events presented in a scientific article should be explored in more detail during further research. Therefore, all objects and events related to the main topic will be presented not as auxiliary elements, but as an integral part of the phenomenon being studied.

**Conclusions.** Today, creative technologies are actively used in the education system. Experts believe that students in general education who utilize the creative power of modern technology are exposed to such a unique influence that they begin to perceive the creative process in a completely different way. It's worth noting that, as in other areas of our lives, organizing the educational process based on digital rules has become commonplace. Continuous improvement of this system and the introduction of more effective methods into the educational process remain a requirement of the times. Thus, the large-scale implementation of information technology in the educational process takes student learning using the “Knowledge, Skills, Abilities” system to a new level of quality. During this time, the student, assimilating new knowledge in a creative atmosphere, develops adequate skills and abilities, intellectual and practical abilities, moral and spiritual convictions, ethical values, aesthetic views, and at subsequent stages, an appropriate worldview is formed, based on this knowledge. In this



regard, the results of experiments conducted in lessons organized using new creative technologies in the research process are summarized, and an adequate scientific assessment is given to individual elements of the newly formed teaching model. The importance of creating an adequate information environment for the functioning of the educational model created during the study, based on modern creative technologies, interactive learning and new teaching aids, was confirmed.

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