

Advantages of Teaching Based on a Creative Approach

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Abstract: This article explores the methodological principles of organizing creative and inventive learning in general secondary education, with a particular focus on the subject of “Technology.” It presents a scientifically grounded justification for applying creativity-based pedagogical principles to foster students’ divergent thinking, innovation-seeking behavior, and independent problem-solving skills. Each principle — including openness and freedom, individualization and differentiation, variability and alternatives, novelty and originality, problem-based learning, integration, and collaboration — is examined in depth with practical examples and pedagogical interpretations. The study highlights the necessity of applying creative pedagogical technologies such as TRIZ, project-based learning, and problem-based learning to stimulate students’ creative potential. The article argues that a well-structured implementation of these principles contributes to enhancing the quality of education and cultivating future inventors and innovators.

Keywords: Creative learning, inventive thinking, methodological principles, “Technology” subject, TRIZ, project-based learning, problem-based learning, collaborative learning.



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INTRODUCTION. In the modern education system, developing students’ creative thinking and inventive abilities is one of the top priorities. In pedagogical literature, a creative approach is defined as organizing the educational process based on principles of non-standard thinking and searching for innovative solutions. It is described as a method that develops students’ skills in approaching problems unconventionally and generating new ideas.

Research shows that creative approaches contribute to enhancing students’ creative potential and help shape their independent and critical thinking. This is especially important in teaching the subject “Technology,” where students gain experience in materializing their ideas, inventing new designs, and developing innovative solutions through practical tasks and projects.

Creative pedagogy theory emphasizes that such an approach is a key pedagogical condition for forming a creative orientation in learners. It ensures the realization of students’ creative abilities through collaboration between teacher and student. Therefore, organizing the creative process in order to foster inventive activity helps students develop qualities such as innovation-seeking, independent inquiry, and innovative thinking.

As demonstrated by the TRIZ methodology, inventive activity is aimed at awakening the creative potential inherent in every person. It proves that inventiveness is not only a matter of innate talent,

but also a learnable discipline based on specific algorithms. In other words, with the right approach, every student can acquire creative and inventive skills.

In the creative educational process, students' motivation increases, as they experience creative satisfaction from independently solving problems and applying their own ideas. It is evident that the creative approach in developing inventive abilities expands students' thinking boundaries, inspires them to search for new ideas and perspectives, and thereby lays the foundation for their future innovative activity.

Now, let us turn to the concept of the methodological principle and its significance in pedagogical practice. It is well known that a methodological principle refers to the fundamental rules and guidelines followed in the organization and implementation of the educational process. In pedagogy, principles are interpreted as rules derived from general laws and requirements. They serve as a strategic guide for teachers in planning their instructional activities.

Methodological principles provide the basis for choosing the content, form, and methods of the teaching process. Through them, the goals and objectives of instruction can be effectively achieved. According to pedagogical literature, principles guide the activities of both the teacher and the learner by subjecting them to certain norms that lead to optimal outcomes.

Didactic principles (such as the principle of consciousness and activity, the principle of visualization, the principle of consistency, etc.) ensure the overall quality of instruction, while methodological principles define how these didactic principles are applied to specific subjects and topics.

In pedagogical practice, methodological principles are of utmost importance because they guarantee consistency and effectiveness in teaching. These principles help the teacher determine which approach to choose, how to organize the lesson, and what expectations to set for students.

In scientific literature, the principles of creativity are described as "rules that guide teachers to conduct education in a creative direction." The concept of methodological principles serves as a theoretical and methodological foundation in the pedagogical process. These principles guide the teacher's activities along a specific trajectory and contribute to improving the quality of education. In order to develop inventive abilities, it is necessary to adhere to a set of creative principles in the learning process. These principles, which are based on solid scientific foundations, serve as a methodological basis particularly in teaching the subject "Technology" and are aimed at systematically developing students' creative thinking skills.

1. Principle of Openness and Freedom in the Educational Process. The principle of openness and freedom involves ensuring that students have the maximum opportunity to express their thoughts and engage in free creative activity within the educational environment. According to this principle, each student should be able to engage in open dialogue and freely express their ideas during the lesson. Creating a psychologically safe environment is one of the core conditions of this principle — that is, students should feel safe to share their opinions without fear of punishment for mistakes.

Research highlights the importance of valuing every student's ideas in the creative teaching process and positively reinforcing all contributions. Mistakes are regarded as a natural part of the learning journey and are seen as an opportunity to view familiar things from a new perspective. Students can only confidently propose new ideas when they are not afraid of making mistakes. Therefore, teachers must foster a sense of trust in students by adhering to the principle of openness and freedom, ensuring that every idea is heard and every initiative is appreciated. This principle creates a democratic and open atmosphere that fosters creative thinking and increases students' motivation to learn.

2. Principle of Individualization and Differentiation in Learning. The principle of individualization and differentiation refers to tailoring instruction to each student's personal characteristics, abilities, and learning pace. It requires that the teacher consider the rate of individual development and select tasks and approaches accordingly.

Scientific sources note that considering students' individual learning styles and psychological processes is a crucial factor in fostering creativity. Differentiation means assigning tasks and using methods suited to students with varying abilities. For example, in creative tasks, some students may be given greater independence, while others may receive more guided instruction — depending on their individual needs. As a result, each student engages in creative activity at their own level, promoting their personal creative development.

The principle of individualization also encourages independent learning and self-development skills, creating conditions in which students can be creative in ways that suit them best.

3. Principle of Variability and Alternatives. The principle of variability and alternatives involves exploring multiple solutions to a problem and providing students with options to choose from. According to this principle, learning tasks should be designed in such a way that they allow for several possible solutions.

For instance, in a Technology class where students are tasked with making an object, the teacher should offer them multiple materials or design options to choose from. The principle of variability requires students to discuss and compare at least two or more alternative solutions when solving a problem.

Such an approach broadens students' creative thinking, as they go beyond looking for a single correct answer and instead evaluate different possibilities to find the most optimal one. This principle also develops students' skills in comparative analysis and informed decision-making among various options. As a result, they learn to approach problems from multiple perspectives, thereby cultivating divergent thinking — a key foundation of inventiveness.

4. Principle of Novelty and Originality. The principle of novelty and originality refers to organizing each stage of the educational process in a new, unconventional way, and enriching it with meaningful content. This principle requires the consistent use of innovative approaches in lessons to maintain high levels of student interest and motivation.

Often referred to in pedagogical literature as the principle of innovation, it emphasizes that textbooks and assignments should avoid repetition and monotony. Each lesson should offer students something new — whether in the form of content or type of activity. For example, in a “Technology” class, introducing a previously unused tool or demonstrating a new technical method when teaching a topic can bring in an element of novelty.

The principle of novelty serves to make the educational process more diverse and engaging, helping students develop creative adaptability in unexpected situations. By adhering to the principle of novelty and originality, the educational process is freed from uniformity, and students grow up prepared to seek and generate new ideas in a creative environment. This principle also helps maintain students' interest in learning and encourages ongoing creative exploration.

5. Principle of Problem-Based Learning. This principle involves engaging students in problem situations to help them acquire subject-specific knowledge. A long-standing pedagogical strategy, it holds particular value in creative education. In essence, creativity lies in the ability to find unconventional solutions to problems, making problem-based learning a natural method for fostering creative thinking.

Through problem-based learning, students develop skills such as problem analysis, breaking complex issues into parts, and generating multiple solution options.

Scientific literature emphasizes that implementing problem-based learning is one of the most effective ways to enhance creative thinking. When a problem is posed, the student is compelled to generate something new in the process of solving it.

Moreover, this principle helps develop students' research skills, as they gather data, test hypotheses, and present creative outcomes.

Overall, lessons built on the problem-based learning principle strengthen students' creative engagement and lay the foundation for developing their inventive abilities.

6. Principle of Integration. This principle refers to combining knowledge across various subject areas and approaching a problem from multiple disciplinary perspectives. Integration is crucial for the development of creative thinking, as new ideas often emerge at the intersection of different fields of knowledge.

An integrative approach broadens students' intellectual scope and enhances their ability to think independently and creatively across subjects, enriching the learning experience.

For instance, in the "Technology" subject, completing a project may require integrating knowledge from mathematics, physics, and the arts. This helps students develop complex thinking and the ability to apply knowledge from multiple disciplines in harmony when solving educational problems.

The interdisciplinary integration principle implies that students rely on various subject foundations simultaneously when solving real-world problems. As a result, their approach is not one-sided, but rather systemic and comprehensive.

Integration is an inseparable part of the creative approach, allowing students to merge knowledge and experience from different fields. When this principle is observed, lessons often take the form of practical, project-based activities. For example, when developing a technological solution, students consider not only technical aspects, but also economic, environmental, and design perspectives.

This fosters broad-mindedness and strengthens their capacity for innovative thinking.

In this process, they develop skills such as research, creative thinking, and information processing. The project method not only encourages innovation and independence but also integrates knowledge from multiple disciplines, aligning well with the previously discussed integration principle.

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