

## WAYS TO DEVELOP CREATIVITY QUALITIES IN STUDENTS

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### Abstract

This article examines the theoretical foundations and practical approaches to developing creativity qualities in university students. The study analyses the conditions necessary for establishing a creative educational environment and identifies the key personal qualities characteristic of creative thinkers. Drawing on the works of Patti Drapeau and other leading researchers in the field, the article presents four evidence-based ways to cultivate creative thinking skills: forming creative thinking skills through the use of action-oriented verbs, developing practical creative skills through interactive methods, organizing creative activity processes, and applying creative products as learning outcomes. Special attention is given to the neurological basis of creative thinking, the role of the teacher in fostering a psychologically safe and stimulating classroom environment, and the importance of collaborative group work. The article also discusses the factors that hinder the development of creativity and proposes practical recommendations for integrating creative approaches into higher education pedagogy. The findings suggest that creative thinking can be developed as a sustainable habit when appropriate pedagogical conditions are systematically created and maintained.

**Keywords:** Creativity, creative thinking, higher education, pedagogical environment, creative skills development, student creativity, innovative teaching methods, creative habits, collaborative learning, educational psychology.

### Introduction

Before developing creative thinking skills in students, it is necessary to create a favorable environment in the classroom. Students studying in a creative environment gradually develop an increasing interest in performing creative tasks, and by observing a teacher who possesses creative thinking, they become inclined toward creative thinking. An educational-cognitive environment of a creative nature leads to the development of critical and creative thinking skills in students, which are of great importance in the learning process.

In higher educational institutions, the extent to which students develop creative thinking depends on how thoroughly a creative environment is cultivated within them. "Creating a fully creative educational environment relies on a well-thought-out plan. If teachers wish to achieve greater effectiveness in applying their creative teaching methods and strategies (i.e., thinking broadly and organizing the creative thinking process), they must instill this in the minds of students and perform their duties sincerely. Furthermore, only in an environment of a creative



nature do students gain the opportunity to understand the content of the topic being studied and the interconnections between educational information, and begin to think about it."

The failure of educational practice to attain a creative character has been studied by a number of researchers. For example, in foreign countries, researcher-educators such as Beghetto, Kaufman, Kirschner (2010) and Sweller, Clark (2006) explain the reasons for this and the conditions for overcoming them as follows: "In many cases, teachers familiarize themselves only with the content of the subject, but pay no great attention to the thinking process and provide no information about how thinking and demands may develop. The effectiveness of a teacher's unsystematic instruction approach is significantly lower than the methods and strategies aimed at improving students' academic performance (Beghetto, Kaufman, 2010; Kirschner, Sweller, Clark, 2006). However, in order to convey instructions on thinking skills (critical, creative) clearly and comprehensibly to students, the teacher must introduce students to effective methods of developing thinking skills and, through this, monitor and direct students' academic activity." The fact that the ideas expressed by the authors are illustrated with examples helps to clarify the thoughts of teachers and students regarding the organization of the creative thinking process.

In creative development, the period and stage in every individual's life are of great importance. Students with creative thinking: express ideas that other students would not think of; choose a distinctive style of self-expression; sometimes ask unusual or seemingly unrelated questions; enjoy tasks with open-ended solutions; prefer to discuss ideas on the basis of concrete evidence; choose a non-traditional approach to finding solutions to problems.

The following are considered personal creativity qualities:

- Creative orientation;
- Erudition (broad knowledge);
- Creative receptivity and initiative;
- Capacity for reflection;
- Ability to take risks;
- Developed intuition;
- Possession of innovative ability;
- Capacity for logical thinking;
- Rich imagination;
- Full expression of one's creativity;
- Emotional richness;
- Speed of thought;
- Ability to put forward original ideas;
- Possession of high artistic values;
- Skill in making new decisions on the basis of existing experience and knowledge.

**Effective ways of developing creativity qualities in an individual.** As noted above, creativity qualities do not develop on their own in pedagogues, just as in all individuals. Accordingly, research highlights a number of ways to successfully develop creativity qualities in individuals



(including educators). Patti Drapeau also identifies four ways to successfully develop creativity qualities in individuals (including educators):

- Forming creative thinking skills;
- Developing practical creative action skills;
- Organizing creative activity processes;
- Using creative products (outputs).

The essence of these ways is discussed below.

**Way 1: Forming creative thinking skills.** Here the main emphasis is on forming creative thinking skills as the primary focus, and students are directed to express the essence of actions of a creative nature with the help of verbs. In particular, teachers pay attention to ensuring that the questions which encourage students to think contain the necessary verbs, with the aim of effectively forming creative thinking skills. If this is explained with examples, a test question for students worded as "describe the connection between the heart and the circulatory system" does not cultivate creativity in them. This is because the concept of "describe" in the question is, in its essence, equivalent to saying "list your existing knowledge one by one."

Using words (verbs) that encourage students to think when asking test questions facilitates their creative thinking. For this reason, in accordance with the first way of forming creative qualities in a person, it is appropriate for educators to use various, unusual, non-traditional words (verbs) that compel a well-considered answer. For example, it is practically effective to use such words (verbs) as "find the connection," "create," "predict," "present the idea logically," "imagine."

Instead of requiring students to "describe the connection between the heart and the circulatory system," the educator should ask them to "identify all types of connections between the heart and the circulatory system." As a result, students have the opportunity both to synthesize existing knowledge and to put forward new thoughts and ideas.

When applying the first way — forming creative thinking skills in students — it is appropriate for young teachers to use the "Creativity Map."

**Way 2: Developing practical creative thinking skills.** Educators use visual methods and techniques in forming and developing creative thinking skills in students. In this regard, the use of questions can only help in the short term, but does not develop interactivity and engagement in students.

Patti Drapeau, in her work, presents a number of effective ways and methods for developing interactivity and creative thinking skills in students. In particular:

- Working with websites;
- Visualization;
- Taking into account all points of view;
- Applying important ideas in various situations and appropriately (transferring an idea to another context — transformation);
- Symbolization;
- "Brainstorming";
- "Case study" methods.



**Way 3: Organizing creative activity processes.** This way places emphasis on creative, innovative thinking in the process of students solving problems and putting forward innovative ideas. In these processes, creative thinking occurs even if creative methods and techniques are not actively employed. For example, "finding the connection between the heart and the circulatory system." While performing this task, students analyze various problems related to the human circulatory system. As a result, multi-faceted thinking and deliberation take place in this process.

**Way 4: Using creative products (outputs).** Following this way, the educator may give students the task of creating a presentation on the topic "The Human Circulatory System" using PowerPoint or multimedia. During the process of preparing the presentation, creative thinking skills in students develop actively.

Students may fully demonstrate their creative thinking abilities in a comfortable environment. If students have a fear of failure, are afraid of expressing ideas incorrectly, or face criticism, it will not be possible to effectively form or develop creative thinking skills in them in such a situation. Creative thinking skills can be successfully formed only by making creativity a habit in students.

In this process, a thorough understanding of the subject content by students and the methods and tools used to assess creative thinking skills are of great importance.

What do you personally think: in what order should these ways be used in the process of encouraging students to think creatively in higher educational institutions in order to guarantee the expected results? On this point, Patti Drapeau gives the following advice: "To get from one destination to another, we pass through two or more directions. This idea also applies to the guidelines presented below. A teacher may use one or more of the (above-mentioned) ways during a lesson. If the teacher decides to apply verbs that form creative thinking skills (Way 1), he or she can also effectively engage students who are directly working on solving creative problems (Way 3) in using creative thinking strategies (Way 2). The lesson then concludes with the development of a creative product (Way 4). A map illustrating the essence of the creative thinking process helps teachers identify the level and type of creativity manifested during a lesson."

In many cases, both teachers and students themselves face the following question: is it possible to achieve a manifestation of the creative thinking process as a habit? On this point, Patti Drapeau puts forward the following ideas: "Brain research allows us to understand the ways of developing creative thinking skills and how to make it a habit. Creativity occurs as a result of the coordinated operation of the anterior (where ideas emerge) and lateral (analytical) areas of the brain and the production of dopamine (a substance that helps a person feel good). Learning leads to the formation of small convolutions in the brain, and this process is intensified as a result of the brain's active functioning. The human brain prefers to receive information rich in imagery, prediction, feelings, emotions, and meaning. 'If information is devoid of any emotions and thought processes, it is not retained in the brain.' However, creative thinking requires the use of new methods 'contrary to the brain's learning and acquisition methods' and the development of non-traditional, original ideas. As a result of practicing creative thinking,



students not only rely on established connections, but also become inclined to establish new, meaningful connections in the brain, develop new ideas, and think in new ways. As a result of constant practice, novel creative thinking takes on a habitual and automatic character. The human brain is always accustomed to functioning correctly, meaning that for the brain there is only one correct answer. Yet this is not creativity. Creativity means that in the process of students defending their views, all answers may be correct. It means immersing oneself in a creative environment. Therefore, in order to make creative thinking a habit, students must be able to look at this process with confidence."

Students can make creative thinking a habit only when creativity is encouraged and a sincere environment is created. In a creative environment, teachers and students learn to treat others sincerely and to respect their thoughts and opinions. Students who harbor a fear of making mistakes or failing, who pay excessive attention to grades, who fear standing out from others, who fear disrespect, criticism, or humiliation, will not make creativity a habit. Making creativity a habit, increasing students' academic success and self-respect, is achievable only through appropriate application of creative thinking and in a healthy environment."

According to foreign educators, in particular Patti Drapeau, the creativity of one individual — especially a teacher — inspires others (students) to organize creative processes.

"Creativity is contagious; in order to be creative, a person must communicate more with creative individuals and always be in a state of searching. Just as any skill can be formed, the ability or skill of creative thinking can also be developed. This is also true for students — working on creativity helps students think in unusual ways. However, inspiring and encouraging students to be creative depends on the level of competence of the teacher. Research on creativity and the works of creativity theorists serve as a guide in forming creativity skills in students (Table 2.1). This includes elements of the classroom environment, the formation of students' thinking styles, and the teacher's approaches and strategies."

The teacher occupies a special place in forming creative thinking skills in students. In this process, "the teacher's role consists of creating a creative environment in the classroom. As Pannels and Claxton (2008) note, the environment (when speaking of the classroom, its goals and objectives) influences the formation of creativity; another researcher, Piirto (2004), holds that creativity requires risk-taking. However, the teacher must create an environment in the classroom where students can feel free and share their thoughts and ideas. Students in a creative classroom may express their thoughts and ideas in various ways, and they must value this. To further activate the processes occurring in the brain, students must act freely in asking various questions, going beyond established rules and standards. The teacher supports creativity in students by putting forward unusual ideas and encouraging them verbally and non-verbally. The teacher's correct attitude toward creative ideas offered by students is of great importance in their understanding of possible and impossible conditions. All these elements are an important part of the teacher-student relationship and ensure student success."

Certain factors hinder the development of creativity qualities and skills in educators. Therefore, in the pedagogical process, teachers must pay attention to overcoming these factors. The following factors hinder the development of creativity in an individual:



- Avoiding risk-taking;
- Allowing rudeness in thinking and behavior;
- Undervaluing an individual's fantasy and imagination;
- Submitting to others;
- Thinking only of success in any situation.

"In a creative environment, the teacher uses some novelty to attract students' attention. Information that arouses curiosity and doubt draws students in and strengthens their desire to study. Brain research has shown that novelty always activates the brain. When the teacher provides students with new information and sources or applies new strategies, the brain 'awakens' and pays attention. For example, dressing up as a literary character or historical figure, using historical objects or modern items, playing music, telling jokes, rearranging classroom furniture, playing games (this equally applies to secondary school students and higher educational institution students), and changing the lesson format.

In a creative environment, the teacher frequently gives students the opportunity to choose. Choice is important in forming creativity (Sprenger, 2010) and it not only inspires students and gives them the ability to control their learning, but also broadens their rights and opportunities. The right to choose creates a foundation not only for improving the teacher-student relationship, but also for expressing the individuality of both parties (Deci, 1995). The right to choice may be one-sided as well, meaning the choice is made independently by the student and the final result may be presented in two or more forms."

In higher educational institutions as well, teachers must be able to create the necessary conditions for students to work together in small or large groups in order to form and develop creative thinking skills. Indeed, in the process of working in large and small groups, an opportunity arises to creatively develop any idea put forward.

"The teacher, being aware of the importance of team spirit in creativity lessons, constantly changes groups, thereby forming in students the skill of teamwork and respect for the abilities and skills of others. However, while individual work may be effective in certain situations, working in small groups is more appropriate in creativity lessons, since the creative skill is a social phenomenon (Farrell, 2001; John-Steiner, 2000; Sawyer, 2003, 2006b); according to Sawyer, creative views are formed in the process of teamwork and as a result of creative collaboration."

Criteria for dividing students into small groups:

- Dividing students into small groups according to their abilities in a specific field; such ability-based division must by no means be related to creative thinking skills. Students in such groups must be able to act freely and be ready to move to another group when the time comes;
- Collaborative groups are organized on the basis of students' interests; such groups may consist of students with varying levels of knowledge and ability. In most cases, students in such a group take on a specific role, i.e., responsibility. In forming this group, the primary emphasis is placed not on the student's cognitive wishes and desires, but on their academic and social knowledge;



- Flexible groups are formed on the basis of students' individual needs, interests, and wishes. If the group's interests change, its members change accordingly. Such a group develops adaptability skills in students.

The teacher provides students with interesting, complex tasks and clear goals and timeframes so that they can achieve success. In the process of completing a given task, students become so "absorbed" in the work that they forget about time. However, although students rarely find themselves in such a state in a school setting, teachers must strive to create such an environment.

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