



Developing Students' Creative Thinking Potential

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Annotation: The article is devoted to the problem and the need to develop creative thinking of undergraduate students in the learning process. The essence and types of thinking, the essence of creative thinking, the features of the development and diagnosis of creative thinking of undergraduate students in the learning process are considered.

Keywords: thinking, creativity, creative thinking, features of the development of creative thinking, diagnostics of creative thinking, creative personality.

Introduction.

In the psychological and pedagogical literature, various tests, personality questionnaires have been developed and used to assess a person's creative abilities, and an analysis of performance is carried out. To develop creative abilities, learning situations are used that are characterized by incompleteness or openness to integrating new elements, while students are encouraged to formulate a variety of questions.

At the present stage of society's development, the need for specialists with a high level of creative potential development, who are able to think systematically, set and solve various tasks outside the box is clearly expressed. The social transformations taking place in Uzbekistan today, rapid scientific and technological progress place increasingly high demands on the training and upbringing of each person, on his education and self-development, making it especially important for a specialist to form a creative approach and an active life position in any professional orientation.

Literature review.

Creativity is a fusion of many qualities. It should be noted that the question of the components of a person's creative potential remains open, although at



the moment there are several hypotheses concerning this problem. Many scientists associate the ability to creative activity, first of all, with the peculiarities of thinking. Creative people tend to form new combinations of elements that most people know and use only in a certain way, or form connections between two elements that at first glance have nothing in common.

The study of this problem becomes extremely necessary, since the development of creative thinking of students should ultimately ensure the formation of a personality ready for self-development in the process of creative activity, as well as having the ability to independently acquire knowledge based on the use of creative thinking.

Thinking is studied by almost all existing scientific disciplines, being at the same time the object of research of a number of philosophical disciplines - logic, epistemology, dialectics. Ancient philosophers and scientists began to explore thinking, primarily from the standpoint of philosophy and logic (Parmenides, Plato, Aristotle, Spinoza, Alcmaeon, Pythagoras, Erasistratus, Alcmaeon of Croton, etc.).

The essence of the thinking process is the generation of new knowledge based on the creative reflection and transformation of reality by a person. Thinking as a special mental process has a number of specific characteristics and signs:

- 1) generalized reflection of reality,
- 2) indirect cognition of objective reality,
- 3) thinking is always associated with solving a certain task,
- 4) thinking is inextricably linked with speech.

The main forms of thinking are: concept, judgment, inference. A concept is a form of thought that reflects the general, essential and distinctive features of the subject of thought. Judgment is a form of thought that establishes a logical connection between two or more concepts, through which something is asserted or denied about something. Inference is an operation of thinking, during which a new judgment is derived from the comparison of a number of premises.

Human thinking according to its types is traditionally divided into visually effective, visually figurative and verbally logical (abstract). In addition, there are intuitive and analytical (rational, discursive), realistic and autistic, divergent and convergent, theoretical and practical (empirical), productive (creative) and reproductive (uncreative) thinking.



**The divergent way of thinking underlies creative thinking,
which is characterized by the following main features:**

**speed — the
ability to
express the
maximum
number of
ideas;**

**flexibility — the
ability to
express a wide
variety of ideas;**

**originality —
the ability to
generate new
non-standard
ideas;**

**completeness —
the ability to
improve your
«product» or
give it a finished
look.**

There are various types of creativity: industrial, technical, inventive, scientific, political, organizational, philosophical, artistic, mythological, religious, musical, everyday, etc. Of all the variety of types of creativity in our work, we are most interested in inventive creativity. In the fact that it must create a thing, a real object, a mechanism or a technique that solves a certain problem. This determines the originality of the inventor's creative work.

The ability to create cannot be transferred, «broadcast», as knowledge or skill. Real creativity in any field creates a powerful psychological dominant, captures the whole person. The task is to help the student get in touch with the position of the creator.

Creative thinking is dominated by four features, in particular, originality of problem solving, semantic flexibility (allows you to see an object from a new angle), figurative adaptive flexibility (makes it possible to change an object with the development of the need for its cognition), semantically spontaneous flexibility (producing various ideas about uncertain situations). Creative thinking is always subjective, personally colored, does not arise spontaneously, but as a result of special need-motivational, semantic, emotional intrapsychic stimuli.

The development of creative thinking is accompanied by the development of the inner world of a person, his creative, cognitive, organizational and activity



qualities, and creative products are: firstly, the materialized results of the student's activity in the form of an original idea, script, social commercial, etc.; secondly, changes in the personal qualities of the student, naturally developing in the process of professional training.

Result and analysis.

A modern student preparing himself for professional activity has a fairly large arsenal of tools and ways to achieve educational and research goals in an institution of secondary vocational education. An attractive form of self-organization for students to form creative research skills is the student scientific society, where, under the guidance of teachers, with the help of undergraduates, it is possible to explore processes, phenomena, develop projects of personal and professionally significant, using their intellectual and volitional potential.

An analysis of the scientific literature on the content of the creative component of a person's potential has shown that scientists do not have a single view on the characteristic of creative potential; in the content there appear then abilities and readiness for creative activity, then unity of creative abilities, creative needs, value orientations and activities as conditions for development, then a set of proper potential, motivational and cognitive components (in the horizontal section), in the vertical — the unity of the pre-and post-actual.

However, scientists unanimously recognize that the activity of personality, represented by intellectual, subjective and other types of personality, contributes to the deployment of creative potential. The creative potential of a student, a member of the student scientific society, is considered by us as an integrative quality of personality, characterizing his willingness and ability to create new, original research activities, and its content represents the unity and interdependence of motivational, personal, cognitive and activity components.

Let's take a closer look at the main content of the creative potential of a student member of the Student Scientific Society (SSS). We identify the following structural components of the creative potential of a student member of the SSS: motivational, personal, cognitive and activity. The motivational component of creative potential is an established system of motivational formations: needs, motives, interests for the development of creative potential. Interest arises where there is a combination of requests for the logic of the development of science, practice and the willingness of the subject to implement them, i.e. curiosity, which characterizes a person's need for



knowledge, mastering new ways of doing things; striving to learn more deeply about the newly observed or analyzed, as well as in asking questions.

Research activity acquires a well-known personal meaning for the student, creates stability of his interest in it and turns externally set goals of activity into internal needs of the personality. The interest in the development of creative potential reflects the need of a student — member of the SS in the productive realization of his creative potential. Needs as a source of student's creative activity determine his focus on the creative process, while the need for creativity is an indicator of a high level of personal development. In an effort to satisfy his creative needs, the student implements certain goals in research activities. It is the need that motivates the student to seek means of satisfaction, stimulates activity in solving research problems. It is based on the student's high claims to self-realization in research activities. The use of creative potential ensures the best satisfaction of the need for self-realization, the desire to perform a research task at a high level.



Pedagogical technologies for the development of creativity are not limited to creative thinking trainings, their essence lies in the holistic organization of students' creative practice. The main purpose of pedagogical support is to awaken the desire of students to engage in the process of self-activity by means of tutoring and coaching, to help the student to unleash his creative potential



and determine the sphere of his creative self-realization. With the help of scaffolding and facilitation, to support students at critical points of their creative activity. It is especially important that students' creative practices are not perceived by them as something episodic, but become the basis for them to discover their creative potential and connect with the search for a professional and personal vocation.

Project-based learning technologies and digital technologies (Internet project). Project technologies, involving students in joint activities, create conditions for the manifestation and development of independence and creativity. Today, the use of design technologies is being updated in connection with the process of digitalization of education. Many digital technologies have didactic properties (interactivity, multimedia, hypertext, personality, etc.), which make it possible to use them to build an educational process focused on taking into account the characteristics of a digital society. In the process of developing Internet projects, new opportunities are opening up for students to develop skills in self-organization of their activities, which is a necessary component of the formation of contextual, cross-contextual and existential competencies demanded by the modern economy.

Individual creativity is always intertwined with social processes and finds incentives for its development in society. Today, thanks to the development of digital technologies and the emergence of new forms of organization of the educational process, the possibilities of collaboration are expanding. From a pedagogical point of view, creative practice involves the purposeful building of various forms of collaboration between students, between students and teachers and between teachers, as well as cooperation with a wide variety of social actors.

Any creative practice should contain the entire cycle of activity, starting with the study of the subject, the study of processes and conditions, the choice of materials and means and ending with the receipt of creative products or new experiences. Only in this case, creative practice itself can act as a motivating factor for the beginning of a new cycle or new types of creative activity. And the effectiveness and quality of creative activity, in turn, depend on the completeness and systematic implementation of all pedagogical conditions.

Discussion.



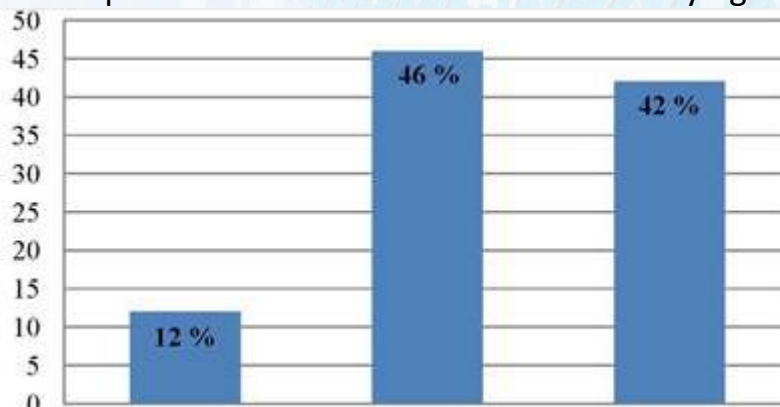
It seems to us that the active rethinking of the essence of creativity as a type of activity and social practice that has been taking place in recent decades is particularly significant. The theoretical and methodological foundations of the modern understanding of creative processes in education (creative practices) can be expressed in the following positions:

- any human activity can reach a creative level and any person has creative potential. Therefore, creative educational practices can be represented by a wide range of activities;

- creative educational practice aims to create opportunities for the identification, presentation, realization and development of creative abilities of a person. Therefore, this is not any innovative activity in education, but only one that contributes to achieving this goal.

- creative practice is essentially a socio-cultural process involving a wide variety of participants (without limitation of age, type of activity and nature of its implementation), the importance and potential of which increase in the process of exchanging ideas, experiences, and creative products.

The number of students (in% of the total test takers) with low, medium and high levels of development of creative abilities before studying the discipline



Distribution of students by levels of development of creative abilities (final testing)

For an objective assessment and interpretation of the obtained research results, it should be noted that the entrance and final testing were conducted for a short period of time (the discipline is conducted for one semester) and, in addition, the entire educational process in the direction of training for the development of students' creative abilities, although the discipline we have highlighted contributes to this to a greater extent. The influence of the personal



characteristics of the subjects, their emotional and physical condition, motivation and testing conditions cannot be excluded. In addition, the development of creative abilities in the educational process is possible only with the partnership of a student and a teacher.

We have considered the features of the development of creative thinking of undergraduate students in the learning process, in that in no case should the student's intuition be suppressed; it is necessary to form the student's self-confidence, faith in his ability to solve the problem; in the learning process, it is desirable to rely on positive emotions to the maximum extent; it is necessary to stimulate the student's desire to independent choice of goals, objectives and means of solving them; the tendency to risky behavior should be encouraged to a fairly wide extent; to prevent the formation of conformal thinking, to fight compromise and orientation towards the majority opinion; to develop imagination and not to suppress the tendency to fantasize, even if it sometimes borders on passing off fiction as truth; it is necessary to form sensitivity to contradictions, the ability to detect and consciously formulate them; it is necessary to encourage in every possible way the desire of a person of any age to be himself, his the ability to listen to your «I» and act in accordance with his «advice».

Conclusion.

The fact that the highlighted components of the creative potential of a student, in interpenetration with each other, allows us to consider the quality we are studying as complex and at the same time relatively integral, as an integrative characteristic of the student's personality. This determines that creativity occupies one of the leading places in the structure of personality.

The success of the development of creative thinking in the process of vocational education is largely determined by the level of formation of the main components of creative thinking at earlier stages of personality formation. These components include:

- the ability to analyze, synthesize, compare and establish causal relationships;
- critical thinking (detection of various kinds of errors, inconsistencies) and the ability to identify contradictions;
- forecasting of possible developments;
- the ability to see any system or object in the aspect of the past, present and future;



- the ability to build an algorithm of action, generate new ideas;
- generate unusual ideas, deviate from traditional patterns in thinking, and quickly resolve problematic situations.

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