

PEDAGOGICAL CONDITIONS FOR THE DEVELOPMENT OF CREATIVE ABILITIES OF FUTURE ENGINEERS AT HIGHER EDUCATIONAL INSTITUTIONS

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Abstract. *In this article, the interest in the problems of creativity and creativity of educational activity in today's modern society is increasing. This is related to the possibility of developing creative thinking in objective and social activities for the self-awareness of the individual in the development of personality, the need to develop the abilities of future engineers to find the right solution in problem situations, to act effectively. Increasing the creative activity of future engineers is related to the orientation to new approaches and the creation of favorable pedagogical conditions for its effective development.*

Keywords: *creative, intellectual, initiative, creative ability, approach, pedagogical conditions, individual.*

Presidential Decree of the Republic of Uzbekistan dated October 8, 2019 "On approval of the concept of development of the higher education system of the Republic of Uzbekistan until 2030" No. PD-5847[1], No. PD-3775 dated June 5, 2018 "Higher on additional measures to increase the quality of education in educational institutions and ensure their active participation in large-scale reforms implemented in the country" [2] and other regulatory and legal provisions related to this activity. This article serves to a certain extent in the implementation of the tasks specified in the documents.

Humanity's centuries-old experience of building a state and society led to the decision of advanced approaches to the regulation of social relations based on new approaches. In this sense, the problem of creating the necessary pedagogical conditions and creative environment to understand the essence of educational reforms has arisen. At the stage of the historical development of mankind, the issue of personal maturity, creativity, as well as the creative abilities of future engineers is interpreted within the framework of specific approaches.

Researcher N.S. Leytes equates the concepts of "creativity" and "talent". The analysis of studies devoted to the consideration of this problem revealed the contradictions between: - the society's need for creatively active people and the actual level of their readiness for the creative process; - opportunities for developing the creativity of future engineers in the higher educational institution, insufficient development of recommendations from the field of pedagogy; states that these contradictions create the need to study the forms of development of creative abilities of future engineers, pedagogical conditions, and develop special pedagogical technologies [3].

According to E.P.Torrens, today, activity aimed at creation of creativity, creativity, and innovation is understood as creative activity. Creativity is the ability of a person to be creative, creativity is the level of talent, characterizing the readiness to create fundamentally new ideas far from the traditional or habitual thinking scheme of an individual, as well as solving problems in a special way, talent he explains in his research work that it is creative abilities that are considered as an independent factor [4].

The analysis of research made it possible to determine the characteristics of the educational process in which creative potential is activated, taking into account the recommendations given by experts and developed during their pedagogical activity.

The main focus in the development of creativity skills of future engineers studying at a higher educational institution can be formulated as follows.

Theoretical justification of the essence of the concept of "creative ability", which implies the existence of creative and intellectual initiative;

the ability to create new original ideas in solving problematic issues;

an adequate way out of the problematic situation that arose during the educational process;

the ability to adapt to changes and non-standard situations that occur in the educational process.

Pedagogical conditions for the development of creative abilities of future engineers during the educational process, including a favorable climate in the team of future engineers for the development of the spirit of creativity;

designing problem situations that allow the development of arbitrary attention, memory, and logical thinking during the educational process;

organization of subject-mental activity of future engineers using proprietary teaching technology;

organization of independent work system for development of creativity skills of future engineers.

the author's teaching technology, created on the basis of a special model, is aimed at arousing the interest of future engineers in the subject of study;

improving the quality of knowledge of future engineers;

it will be impossible to attract future engineers to the activity of activating their educational work.

Summarizing all of the above, it should be noted that various aspects of the problem of creativity are actively studied by foreign and domestic experts, and the results of these studies are widely used in the development of various programs for identifying and developing creative potential.

It is important to observe the continuity of creative development of future engineers in higher educational institutions. Pedagogical conditions, including self-study to improve the creativity of future engineers, are effective if they are used under the following conditions:

- close connection between the educational process and work outside the higher education institution;

- relying on the interests of future engineers and their consistent development;

- to provide a positive pedagogical evaluation of the work product of future engineers, which stimulates further creative growth of the future engineer. The creativity of future engineers is not static, but it certainly develops against the general background of personal development and is manifested both in the educational process and in extracurricular activities.

According to E.A. Ramenskikh, the process of developing students' creative abilities helps them to successfully adapt to their profession, subject to the following pedagogical conditions:

organizational and pedagogical conditions: development of creative abilities of students as a special goal of education at the institute;

building the educational process by introducing art therapy and game techniques as a basis for developing students' creative abilities;

to support the interaction of the subject between the teacher and students;

didactic conditions: diagnosis of current and prospective levels of development of students' creative abilities in the educational field of the institute; encouragement and support from a creative teacher;

student activity by creating special situations; implementation of an individual differential approach in the process of developing students' creative abilities;

psychological-pedagogical conditions: creating a comfortable psychological environment in the joint activities of students and teachers, contributing to the development of students' creative abilities; He emphasized that creating successful situations for students to compensate for possible personal difficulties in learning, individual self-determination, to provide the teacher with the opportunity for students to actively participate in creative activities [5].

The development of creativity skills in future engineers requires the proper organization of the teaching process, depending on the level of knowledge, the level of mastery, the source of education, didactic tasks of the students in mastering the educational content. It is assumed that the following pedagogical conditions must be followed:

to determine the inclinations of learners to acquire creative activity, to form knowledge needs and to provide an environment for the manifestation of independence in the educational process; creating a favorable opportunity for students to think creatively, tolerantly accepting various thoughts and ideas expressed by students and ensuring their activity in the educational process, each student has his to establish confidence in their ability to think creatively, regularly encourage their creative activities;

individualization of the educational process based on the characteristics, needs and intellectual potential of the learner;

formation of individual, small group and teamwork skills in students, expansion of their creative capabilities, readiness to solve problems, encourage them to accept non-standard solutions along with standard solutions, practical re-development of cognitive knowledge, which is the basis for the development of creative activity and selecting and implementing training forms and methods that enable improvement.

Thus, the conducted research showed that it is necessary to implement the pedagogical conditions presented in the article in order to develop the creative abilities of future engineers.

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