



JULMATOVA SAODAT  
JURATJON KIZI

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# METHODS OF DEVELOPING CREATIVE SKILLS IN TRAINING TEACHING STAFF BASED ON AN INDIVIDUAL APPROACH

Monograph

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**JULMATOVA SAODAT JURATJONOVNA**

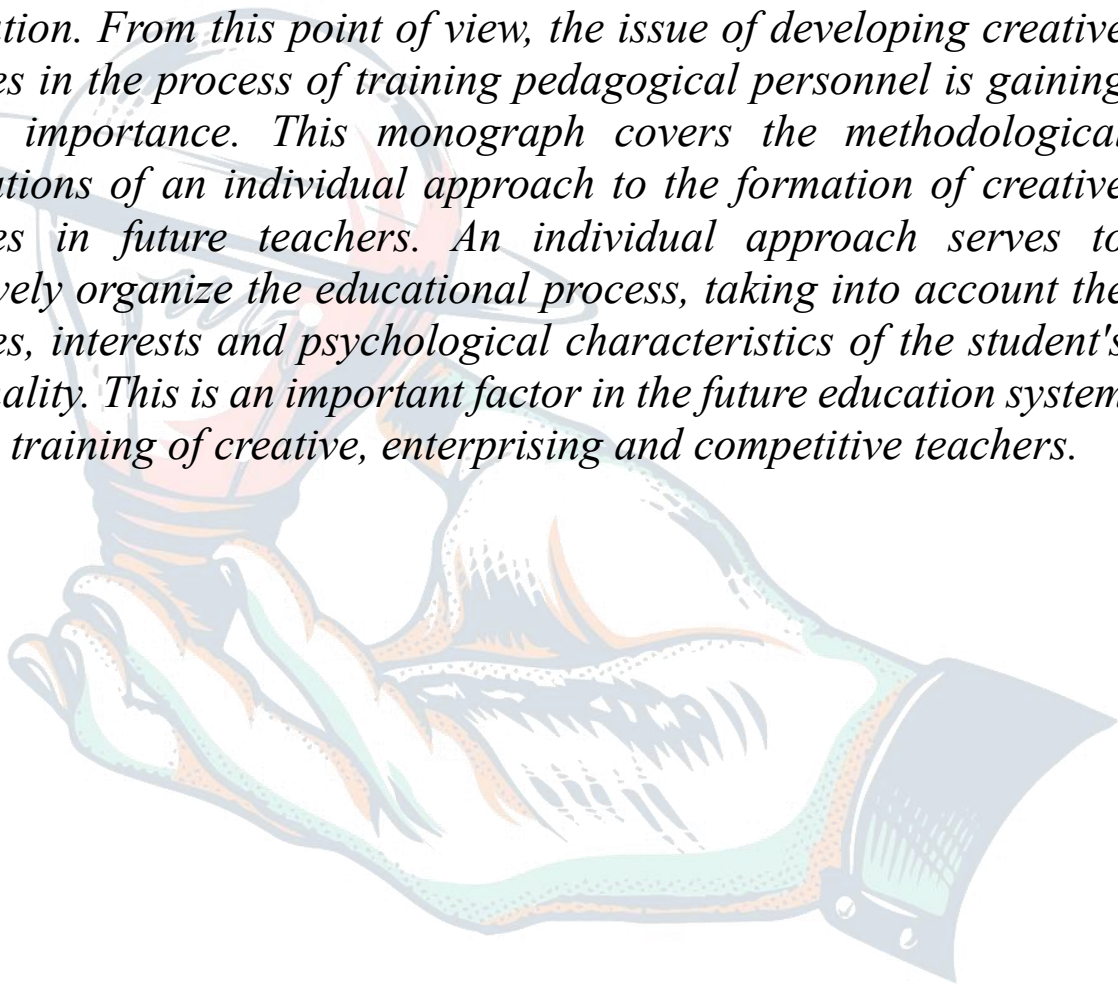
A stylized illustration of a hand holding a planet with a ring, rendered in a light blue and white color scheme. The hand is shown from the side, with fingers curled around the planet. The planet has a prominent ring system. The illustration is semi-transparent, allowing the text to be seen through it.

**TEACHER TRAINING  
DEVELOPING CREATIVE SKILLS  
METHODS BASED ON AN INDIVIDUAL  
APPROACH**

Monograph

Julmatova Saodat Jur'atjon qizi. Methods of developing creative abilities in the training of pedagogical personnel based on an individual approach. Monograph.

*The modern educational process requires the teacher not only to have extensive knowledge and skills, but also a creative approach. Because in the conditions of the 21st century, the teacher should not only be a provider of knowledge, but also a person who develops the thinking of students, guides them to independent thinking and innovation. From this point of view, the issue of developing creative abilities in the process of training pedagogical personnel is gaining urgent importance. This monograph covers the methodological foundations of an individual approach to the formation of creative abilities in future teachers. An individual approach serves to effectively organize the educational process, taking into account the abilities, interests and psychological characteristics of the student's personality. This is an important factor in the future education system for the training of creative, enterprising and competitive teachers.*



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## INTRODUCTION

In today's era of globalization and rapid development of information technologies, new tasks are being set before the education system. In the process of comprehensive reforms being implemented in the Republic of Uzbekistan, modernization of the education system, training of pedagogical personnel with modern knowledge and skills, as creative, enterprising and competitive individuals, has become one of the priority areas. In this process, the effectiveness of pedagogical activity is determined not only by imparting knowledge, but also by developing creative thinking, directing students to independent thinking and innovation.

From this point of view, the issue of forming creative abilities in the training of pedagogical personnel is of urgent importance. A creative teacher is not just a provider of knowledge, but a person who, taking into account the individual abilities and aspirations of students, encourages them to fully demonstrate their potential. In this regard, an individual approach plays a special role as the main methodological principle. Because an individual approach creates conditions for their creative development by deeply analyzing the interests, needs and psychological characteristics of the student's personality.

This monograph comprehensively covers the methodological foundations of an individual approach to developing creative abilities in future teachers. On the one hand, it analyzes the best practices used in educational theory and pedagogical practice, and on the other hand, it shows effective ways to form creativity based on an individual approach. It also studies the scientific and theoretical basis, psychological factors and practical possibilities of developing creative abilities in the process of training pedagogical personnel.

The results of the monograph can serve as a theoretical and methodological guide for specialists in the field of pedagogy, professors and teachers working in higher educational institutions, as well as future educators.

## **1. The scientific and pedagogical significance and necessity of developing creative abilities in the training of pedagogical personnel**

In the context of modern educational development, the rapid introduction of innovative technologies and globalization, the content of pedagogical activity is being radically updated. Now the teacher is required to act not only as a provider of knowledge, but also as a person who forms creative thinking, can apply new approaches, and is an initiative person. Therefore, the development of creative abilities in the process of training pedagogical personnel has become a priority task in both theoretical and practical terms.

The issue of creativity has been widely analyzed in philosophical, psychological and pedagogical literature. In philosophy, creativity is interpreted as the highest form of human thinking, the activity of creating innovation, while in psychology, creative ability is seen as the main sign of a person's individuality and flexibility of thinking. In pedagogy, creativity is interpreted as the process of developing new knowledge, new ideas and effective solutions in the collaborative work of a student and a teacher.

Pedagogical activity is, by its very nature, a creative process. Because in each lesson, the teacher faces new situations, new problems, and students with different personal characteristics. Choosing methods that are appropriate for their needs, interests, and capabilities requires a creative approach. Therefore, developing creative abilities in the training of pedagogical personnel is considered an important factor in improving the professional readiness of future teachers.

The individual approach is one of the basic principles of pedagogy, which is based on taking into account the individual characteristics of the student's personality, their level of knowledge, interests, aspirations, social and psychological needs. Through this approach, students' creative abilities are effectively developed, since each person has his own set of abilities. The methodological foundations of the individual approach are as follows:

identifying the abilities and needs of the student's personality through diagnostic methods;

- differentiated approach method, giving tasks appropriate to the level of knowledge and interest of students;  
stimulate thinking through creative methods, problem-based learning, interactive methods, and creative tasks;  
a motivating environment.

Thus, the theoretical foundations of the development of creativity in the process of training pedagogical personnel are inextricably linked with philosophical, psychological and pedagogical views, and an individual approach is the main foundation of this process. It not only increases the efficiency of learning, but also allows the formation of creative thinking of the future pedagogical personality, the development of professional competence, and the application of new approaches in the educational process.

Pedagogical activity is, by its very nature, a creative process. In each lesson, the teacher encounters different conditions, diverse interests and abilities of students, as well as problematic situations that arise in the educational process. In order to effectively work in such situations, the teacher is required to have a creative approach, flexible thinking, and a willingness to innovate. Therefore, the formation of creative abilities in future teachers is considered an important scientific and pedagogical task of the educational process. Creativity performs several functions in the professional development of the teacher:

- as a means of creating innovation, the teacher goes beyond standard methods in his work and develops pedagogical solutions that meet the needs of students;

- creative thinking, as a factor in the formation of professional competence, encourages the teacher to constant research and improves his professional training;

As a tool for developing students' thinking, a creative teacher creates problem situations in the educational process, awakening students' independent thinking and creative abilities.

From a scientific point of view, the pedagogical significance of creativity is that it enriches the interaction between students and teachers, activates the educational process, and creates conditions for the emergence of innovative ideas. Pedagogical theory interprets

creativity not only as an individual trait, but also as an integral part of professional skills.

From the point of view of professional necessity, the main goal set before the education system today is to educate an initiative, independent-thinking, competitive individual. To fulfill this task, the teacher must prioritize the use of a creative approach in his work, form new views in students. Otherwise, the educational process will remain only at the level of imparting knowledge and will not be able to provide full-fledged results of personal development. Studying heuristic techniques and methods for activating creative abilities brings success closer and develops the creative abilities of a person. The search for and mastering of creative management methods, the theory of creativity, and new technical solutions helps to understand the social significance of creativity, its necessity for society, and to more fully reveal their creative potential.

At the current stage of development of science, society, and science and technology, when analyzing the educational process, its content, form, methods, and tools, as well as the impact on the training process of specialists, the need for creative activity among students of higher educational institutions is clearly evident. Innovation is one of the main characteristics of the modern education system, and innovations in pedagogy are determined by the level of readiness and suitability for pedagogical innovative activity, their possession of professional knowledge, skills and qualifications, the characteristics of creativity in the daily education system, and the level of quality and efficiency in education. Also, project-based educational technology, which has taken its place among innovative technologies in education, is currently becoming one of the most relevant and scientifically interesting foreign language teaching methodologies, and one of the most effective technologies for conducting scientific research in the field of technical disciplines in foreign countries and in our country.

The effectiveness of the future teacher's creative activity ensures the stability of positive indicators in his work style. The technological provision of the results of creative (creative) activity, the convenience of their measurement, recording and monitoring, as well as the evaluation of new methods and approaches to teaching are of great

importance. The value of the teacher's creative activity lies in the fact that it is aimed at expanding the imagination of students and their full-fledged formation. At the same time, the development of creative abilities in students also depends on the design of a creative educational environment by teachers. In professional activity, the creativity of a teacher is manifested in the following ways:

Preparation of regulatory documents (DTS, curricula and plans for academic subjects);

creating educational resources (textbooks, educational and methodological manuals, recommendations, dictionaries, encyclopedias, atlases, workbooks, etc.);

preparation of projects for the educational process and spiritual and educational work;

formation of educational information, control and test tasks;

to make the educational process interesting, lively, and dynamic;

successful conduct of scientific research;

Active participation and presentations at scientific and methodological conferences;

Publication of scientific, scientific-methodological and methodological works; submission of periodic reports, certification.

Pedagogical creativity must ensure the following two conditions:

1) To attract the attention of students who are poorly mastering academic subjects and who find learning boring to studying the basics of science;

2) Recommend strategies and tools to teachers that help encourage creative thinking and creative output in students, and teach them how to use them effectively.

Creative qualities of a teacher:

Creativity is the activity of a person and its result, which determines the significance and usefulness of a particular innovation;

A creative person is a person who can successfully implement the creative process and has tangible creative results (products);

A creative person is someone who demonstrates creativity as a process or result, who uses non-standard methods to solve problems, and who is able to develop unique approaches and advance innovations.

Nowadays, through the improvement of the education system,

great importance is attached to the training of mature, competent, strong-willed, selfless and enterprising personnel in all directions. Mutually beneficial innovative cooperation is being achieved in the vocational education system to train highly qualified specialists for vocational colleges, improve the skills of personnel, introduce rapid development into the industry, and strengthen close ties with manufacturing enterprises. This cooperation in the field of science and innovation plays an important role in increasing the country's prestige in the global economic space. In the era of innovation, inventions, scientific research, innovative ideas, technological developments and their commercialization are of great importance, and their scale and quality serve to create highly profitable, competitive products. At the same time, participation in international scientific projects determines the scientific competence of the country.

In today's world, when scientific developments and technological innovations are becoming a mechanism connecting all spheres of social life, it is difficult to achieve competitiveness in world markets without expanding cooperation in these areas. Today, great attention is paid to training mature, spiritually rich, strong-willed, selfless and enterprising personnel through improving the education system. Mutually beneficial innovative cooperation is being established with the aim of training highly qualified specialists for vocational colleges, improving their skills, introducing modern approaches to the industry, and developing close cooperation with manufacturing enterprises. Such cooperation in the scientific and innovative spheres serves to enhance the country's international reputation. In the modern era of rapid change, inventions, scientific research, innovative ideas and their commercialization are of great importance. It is precisely these that lead to the creation of competitive, profitable products. Participation in international scientific projects further enhances the scientific competence of the country. In today's era, scientific and technological innovations have become a mechanism connecting all sectors of society, and it is necessary to expand this cooperation in order to compete in global markets.

The world demands changes from people, but the implementation of these changes in a conscious manner occurs through the support

and encouragement of personal development and activity of a person. Modern psychology determines the rules for the implementation of individual activity in the process of joint activity. The stability of motives and their orientation to the individual are one of the main factors in human activity. Today, the education of young people as a mature person is considered one of the most important tasks. Every person has abilities, and their development is of great importance for the development of society. Abilities express the personal psychological aspects of a person and allow them to achieve success in their activities more quickly. Parents, teachers, and their own abilities play an important role in developing the abilities of students.

There are specific aspects of abilities that develop depending on the individual characteristics of a person. In this regard, creativity, skills and aspirations for activity are of particular importance in the formation of abilities. Although abilities are formed as a result of human nature, they are also influenced by the social environment. From this point of view, new approaches are based on the principles of humanity, cooperation and free education.

The rapid development of world education requires an innovative and creative approach to the educational process. Because the development and direction of any society is shaped by creativity and innovative ideas, the need for creativity in every field is increasing. In developed countries such as the USA, Canada, Germany, Russia, Japan, and Korea, educational processes are carried out on the basis of an innovative and creative approach. On August 23, 2019, during a conversation with the public and higher education workers, President of the Republic of Uzbekistan Sh.M. Mirziyoyev discussed important tasks in the continuing education system and expressed the following thoughts: "...today, it is necessary to raise the reputation of teachers in educational institutions, and at the same time, teachers themselves should take a new creative approach to the educational process." Also, in his address to the Oliy Majlis on January 24, 2020, Sh.M. Mirziyoyev emphasized the interdependence of education and upbringing, saying, "In our Eastern views, education and upbringing cannot be separated, and this requires great responsibility from the teacher."

For this reason, today's teachers need to organize their activities

in line with the times. Primary school teachers working in general education schools must have general and specific competencies and demonstrate creative abilities. The professional development of a specialist is manifested as a process. Professional maturity begins with the age of 14-17 years of ontogenesis and continues until the end of professional activity (55-60 years). The development of a creative individual depends on internal and external changes, socio-economic conditions, and the continuity of human ontogenesis.

Professional experience is formed through the integration of knowledge, skills and competencies. However, for primary school teachers, the acquisition of professional competencies and creative activity skills, along with the integration of skills, also requires awareness of the methodology of professional creativity, the development of creative thinking and the formation of creative qualities. Based on the authorial approach, creative competence can be explained as follows: Creative competence is a category that develops a person, is an integral part of human spirituality, a factor of personal self-development and is manifested as a means of self-realization. In this, a person is expressed not only in the versatility of his knowledge, but also in the desire for new ideas, the ability to renew stereotypes, reform the creative process, and make unusual and unexpected decisions in solving life problems. Creative competence is closely related to creativity directed at the process of cognition. Teachers demonstrate creative competence in the development of professional competencies in the following ways:

- Quick thinking;
- ability to generate new ideas;
- initiative;
- tolerance for uncertainty;
- intelligence;
- an unusual approach to solving problems.

The following factors are important in developing the creative abilities of primary school teachers: active participation in generating new ideas; independent study of advanced pedagogical achievements and practices; and discussion of pedagogical achievements with teachers and colleagues. The development and manifestation of each teacher is related to his or her creative abilities. The creative

competence of a teacher, as one of his general qualities, is the initial condition and result of creative activity, reflecting the readiness of this person to express himself. Creative competence is a holistic expression of the personal abilities, natural and social strengths of each specialist. It is associated with the creative process. Today, the teacher should not conduct lessons in a planned manner, but should focus on forming and developing independent, critical, logical and creative thinking in students, and encouraging them to think creatively. Today, it is important for future primary school teachers to organize their professional activities on a creative basis and test new ideas. To develop the creative potential of primary school teachers, it is necessary to work in the following four areas:

1. Creating conditions for teachers to think creatively and act freely.
2. Implementing strategies aimed at increasing student interest in lessons.
3. Ensuring the dominance of innovative approaches and creative approaches in solving problems.
4. Achieving expected results through the full implementation of educational and educational tasks.

Research analysis on the pedagogical significance and professional necessity of developing creative abilities in future teachers shows that creativity not only helps to create innovative approaches in the educational process, but also serves to effectively organize the process of students' assimilation of knowledge. Educators who are capable of creative thinking will have greater opportunities to develop new methods and approaches, as well as enrich the educational process.

Creativity is an important factor for teachers in creating an adaptive and interactive learning environment that encourages the intellectual and personal growth of students. This ability, in turn, helps to create a variety of interesting and unique tasks for students. At the same time, the creative environment created in the learning process develops students' problem-solving, independent thinking, and critical thinking skills.

When future teachers develop creative abilities, they will be able to meet the requirements of modern education. Creative skills play an

important role in modern professional activity, especially in the effective mastering of new methods and technologies. In this regard, creative thinking serves as a powerful tool for changing teachers' attitudes towards work, preparing them for challenges, and achieving high goals in education.

In our opinion, creative activity is of great importance in the development of a creative personality, because the personality develops in the process of activity. Therefore, we turn to the theory of activity of LS Vygotsky and N. Leontiev. According to them, the personality is a system of social activity of a person and it has two components. The first is spiritual (consciousness) and practical (behavior). This means that the basis of the personality is embodied in a person, and the social nature of the personality determines its essence. The second most important characteristics of a person related to activity are his mind and behavior. Thus, the main personal aspects are motives, views, thoughts, interests, beliefs, skills and abilities, that is, the inner world of a person.

Thus, according to the theory of activity, personality is expressed through the inner world of a person and his interpersonal relationships. These aspects are not separate, but form a whole. On this basis, all scientists distinguish orientation as the main characteristic of a person. Orientation is a complex personal quality that determines the attitude of a person to himself and to those around him.

If the goal of pedagogical activity is to educate a creative personality, then the teacher-educator must know the creative characteristics of the individual. Modern scientists recognize creative initiative, openness to new experiences, sensitivity to novelty, the ability to see and pose problems, departure from the template, original thinking, energy, independence, inner maturity, and high self-esteem as the main qualities of a creative personality. These characteristics develop creative values such as independence, self-management, and creative self-expression.

Modern scientific research shows that the creative personality of children must have a number of mutually complementary qualities. These qualities include, on the one hand, perseverance, moral development, independent thinking, responsibility, willpower, and a

broad outlook; on the other hand, adaptability, changeability, the ability to create new things, critical thinking, imagination, emotional sensitivity, a sense of humor, and other qualities. Therefore, the process of educating a creative personality implies a specially organized, managed and controlled interaction between the teacher-educator and the students.

The main features of the concept of personality are the involvement of a creative person in various creative activities as the main way to educate him. For this reason, not only external education is important, but also the self-education of a creative person, that is, it should be aimed at self-improvement through constant creative activity. The formation of children as creative individuals consists of several stages.

Motivational – creative activity, characterized by a stable interest in this specific type of activity;

intellectual and creative activity - it is characterized by sensitivity to problems and contradictions in creative activity;

first creative achievements;

increase in professional creative activity;

the formation of a personal creative style and skills - characterized by high creative productivity;

the flowering of talent;

Educators often work with students in the early stages of creative development, and this determines the task of pedagogical activity;

To create the necessary conditions for the upbringing of creative individuals and to raise them to higher levels of development.

The main conditions for raising a creative person:

The focus of education on the formation of a creative personality;

Early identification of a person's readiness for creative activity;

Formation of motivation for creative activity;

Based on creative pedagogy;

The existence of democratic relations between the teacher and the students;

Adapting the educational process to the individual psychological characteristics of children;

Creating a favorable environment for creative development;

Focus on comprehensive personal development and based on the

interests of the individual.

In the formation of creative abilities, teachers need to work in the following areas: involving students in creative activities, creating opportunities for them to master new types of activities, and organizing creative teams to develop creative qualities. It is also important to prepare future higher education teachers to increase their intellectual competence in various specialties, to introduce them to innovative educational technologies, new, innovative forms and methods, and teaching aids, and to form professional competence and creative abilities in teachers.

In general, the development of creative abilities is of great importance in the professional growth of a teacher and in providing effective education to students, and is considered an important part of their preparation for professional activity in society. Based on the above considerations, it can be said that in today's era of rapid changes and developments throughout the world, every teacher must have modern knowledge in their field, constantly work on themselves, and prepare students for this era of changes.

## **2. Psychological and pedagogical factors of developing creativity in the process of pedagogical education based on an individual approach**

The development of creative abilities of future teachers in the process of pedagogical education is a multifactorial process, which is inextricably linked to the psychological characteristics of the individual, interests, motives and the pedagogical environment. In this process, an individual approach is of great importance as the main methodological principle, since the abilities and capabilities of each student are manifested in their own way.

The development of creativity is influenced by the thinking processes of the individual (analytical, logical, divergent and convergent thinking), emotional state, motivation and intellectual potential. The formation of an internal interest in creative activity in students, the encouragement of independent thinking and the support

of new perspectives create a psychological environment. In addition, the development of qualities such as self-confidence, initiative, and a sense of responsibility in future teachers are also considered necessary psychological factors of creativity.

The creation of an educational environment is a decisive factor in the development of creativity, in which cooperation between the teacher and the student, the opportunity for free expression of ideas, the use of problem situations, the use of interactive methods and innovative technologies are important. Also, the support of the creative approach in the curriculum and methodological materials, the organization of independent research work in the educational process are among the pedagogical factors.

Since each student's cognitive process, worldview, and interests are different, a single approach to developing creativity is not enough. Therefore, when an individual approach is used in the educational process, the strengths of students are identified, their personal interests and needs are taken into account, and an opportunity is created to form a unique pedagogical style.

The development of creative abilities is an important component of the educational process, especially since the role of an individual approach in the formation of individual abilities and creative competence of future teachers is great. An individual approach ensures the organization of educational and upbringing processes in accordance with the abilities, interests and aspirations of students. This approach orients future teachers towards creative thinking, independent decision-making and the creation of innovative approaches. The development of creative abilities in future teachers as a pedagogical and psychological process depends on a number of factors. These factors include encouraging creativity in teachers' professional activities, developing independent thinking, and supporting and strengthening motivation.

Taking into account the individual characteristics of each student, teachers need to apply a personalized approach to the educational process. Creative abilities do not develop on their own, but are developed under specific conditions, especially in an educational environment that encourages independent thinking. For this reason, the teacher should strive to identify the strengths of each student and

support them. Psychological approaches, including self-awareness, motivation, and creative thinking, are important in developing creative abilities in future teachers. Guiding students toward activities based on their personal abilities and interests helps to increase their self-confidence. For example, providing positive feedback that increases interest in the activity encourages them to engage in creative processes.

Teachers can use interactive and creative activities to develop creative abilities. These activities include project methods, group discussions, and game-based educational technologies. These methods serve to develop students' creative abilities and develop their independent thinking, innovative approaches, and problem-solving skills. Pedagogical support and social environment are of great importance in the formation of creative abilities. Creating a creative environment in educational institutions and providing educational opportunities that match students' interests and abilities will develop creative abilities in students. In this sense, it is necessary to create suitable conditions for the formation of a creative love. Observation and evaluation also play a role in the development of creative abilities. In this process, independent thinking, innovative decision-making, and creative activities help to monitor students' creative development. Through this, the teacher identifies the stages of students' development and takes measures to support and encourage their creative abilities (Table 1.2.1).

In the development of modern society, reform of all levels of the education system, including higher education, plays an important role. The main goal of these changes is the formation of an enterprising person with creative abilities. This goal is inextricably linked with the idea of humanizing education and, as one of the important tasks of higher education, includes the urgent problem of developing the creative abilities of future teachers. Concepts such as "creative personality", "creative approach", "creative achievements", "creative thinking", "manifestation of creativity" are the main criteria in the preparation of highly qualified personnel in society and in determining modern professional skills indicators, and distinguish the best specialists. At the new stage of development of Uzbekistan, in the great creative work being carried out to educate the youth who

will determine the future as fully mature, perfect, highly cultured and spiritual, it is of great importance that teachers working in music education have high scientific and methodological knowledge and high skills.

One of the strategic tasks in our country is to develop human capital in accordance with the requirements of the labor market, to apply digital technologies and modern methods to the educational process, to train highly qualified, creative and systematic thinking personnel who can make independent decisions in accordance with international standards, and to create the necessary conditions for their intellectual abilities to be demonstrated and their formation as spiritually mature individuals. The main task of higher education institutions is to develop the individual capabilities of each young person, to support their initiative and creativity. In this process, cooperative pedagogy, aimed at studying the student's personality, plays an important role. As a result of creative cooperation based on the principle of individual-oriented pedagogy, the creative abilities of students are fully developed through the interaction between the teacher and the student.

**Table 1.2.1.**  
**Ways to develop the creative abilities of future teachers**

For future teachers	Interesting and complex tasks; set a specific target time
For future teachers	creating a creative imbalance; help get rid of feelings of discomfort and fear; to help develop creative thinking skills and other skills;
For future teachers	development through conversation; express constructive feedback; Enter new instructions.
For future teachers	be able to develop other types of creativity; be able to work in a team; to be emotionally free and a creative thinker

Speaking about the development of creative abilities, Russian scientist IP Volkov emphasizes the need to introduce students to various creative activities in order to identify and develop creative abilities. GS Alkhuller emphasizes the need to engage in creative activities and teach the techniques of creative imagination. IP Ivanov evaluates this process as the upbringing of an active, creative person capable of improving social culture. Based on the individual characteristics and capabilities of students, effectively developing their creative abilities, passions, and interests:

- giving creative tasks that have a specific solution;
- to teach students to independently solve problematic situations that arise in pedagogical activities;

- creating a creative environment for effective and interesting organization of various activities in pedagogical lessons ;

Practical exercises can use methods such as developing and directing students' creative abilities.

The development of students' creative abilities is related to their interests and desires. The development of creative abilities is carried out on the basis of a creative approach to the educational process. Individualized educational technologies allow for the full implementation of a creative approach. One of such educational technologies is the technology of collaborative learning. In particular, teaching methods based on group learning, problem-based learning, modular learning, and individual learning give high results.

Collaborative learning technologies create opportunities for improving the psychological relationship between teacher and student. Democratizing interpersonal relationships is an effective tool for developing the psychological characteristics of students.

Creative abilities are a personal psychological characteristic that allows a student to effectively perform various creative activities. There are various creative aspects in student activity, which find their core in the fulfillment of professional training tasks in the process of mastering artistic creativity and specialized disciplines. Creative abilities are developed in the performance of works, the preparation of slides and lesson plans, the creation of scenarios, the development of music club plans, and the improvement of pedagogical techniques. In this process, it is important for the professor to work in

collaboration with the student, provide the right direction, and monitor the results.

Factors for developing student creativity should be a key component of each lesson and subject. Creative activity, when it covers all aspects of teacher and student activity, improves the quality of the educational process.[180] Based on the above considerations, a strategy for preparing future teachers for creative activity can be implemented in the following areas:

to guide students towards the universality and wide application of the problem-solving method;

view creative improvement not as the goal of the lesson, but as a means to effectively solve the task;

achieving the results of creativity lessons through independent discovery of new ideas;

Collect, analyze, and interpret information to foster creativity in professional development ;

consider the development of creative qualities in a person as a key aspect of educational activities.

In order to increase the efficiency of the educational process and expand the opportunities for students to develop their competencies more deeply, it is important to systematically implement learning in a manner that is appropriate to their capabilities.

Factors influencing the development of creative abilities of future teachers: - avoiding danger; - not allowing rigid control over thinking and behavior; - not underestimating human fantasy and imagination; - thinking about success in any situation.

The stages of developing the creative abilities of future teachers can be summarized as follows:

Stage of reproductive risk. At this stage, students choose creative activity and interest, understand the essence of innovative technologies in education, and master the birth and formation of new ideas.

Creative-research stage. This stage is aimed at developing research, creative activity, unconventional thinking, cognitive independence, improvisation, and innovative skills among students.

The stage of creation and innovation. This stage includes the processes of applying innovations in practice, evaluating, analyzing,

disseminating and expanding them, as well as long-term strategic planning. The interactive learning process plays an important role in the development of creative abilities.

Creativity is a manifestation of intelligence and creative abilities, which is associated with the high level of spirituality and personal development of future teachers. National and secular values are, first of all, formed on the basis of the historical and cultural heritage of the Uzbek people.

Motivation, relaxation, encouraging teachers' creative pursuits, increasing personal activity, assessing intellectual and creative activity in the classroom, meeting educational and social needs, educating students in a goal-oriented, needs-oriented manner, methodologically, proactively, improving intellectual and creative communication, and using practical and theoretical forms of teaching are considered reliable directions in the formation of a modern mature personality.

In the scientific works of the scientist Sh.S. Sharipov, creativity is interpreted in a manner related to the concept of inventiveness. The author describes the pedagogical conditions for the formation of inventive creativity in students using the example of labor and vocational education specialists. The study highlights the theoretical foundations of the formation of inventive creativity of future labor and vocational education teachers, the possibilities of using new information technologies, and the ways of using programmed education. The author also emphasizes that inventiveness is a type of creative activity aimed at creating new technical solutions, confirmed by patents. Inventive creativity is explained by such creative qualities in a person as intelligence, resourcefulness, independent and critical thinking. In Sh.S. Sharipov's research, the concept of creativity is inherent in the process of forming technical inventive skills in students. In his opinion, inventive creativity increases the knowledge and independent thinking abilities of future teachers and serves to improve their moral and ethical level, which indicates the socio-pedagogical significance of the research problem.

American scientist D. Wexler explains creativity as follows: "Creative thinking allows a person to find several solutions to a problem and, unlike the same, boring thinking, helps to understand

the uniqueness of things and phenomena.” Paul Torrence, explaining creativity in terms of thinking, explains creative thinking as a process of “identifying difficulties and problems, formulating, testing and evaluating their hypotheses.” English researcher Depati Patti suggests the following ways to develop creative qualities in students:

creativity – the formation of thinking skills, that is, fluency of thinking, adaptability, creativity;

practical creativity - development of movement skills, that is, elimination of factors that hinder creativity in students;

organizing creative activity processes - confronting students with non-standard situations;

Using creative products – searching for and applying advanced practices, inventions, and technologies.

Creativity is a human activity aimed at creating material and spiritual wealth. In this process, human thought, memory, imagination, attention, and will are actively involved, and all knowledge and experience are manifested. Creativity first arises in the human imagination, then research, observations, and experiments are conducted, the results are analyzed, conclusions are drawn, and tested in practice. Creativity is not just a new idea or creation, but also the achievement of a result that benefits society. Creativity is a purposeful human activity aimed at knowing and changing the world, resulting in the creation of objects that improve the material and spiritual life of society. Thus, creativity is an independent type of activity based on human intelligence, which is also clearly manifested in the educational process.

To develop the creative abilities of future teachers, it is necessary to coordinate the educational process with the level of knowledge, the level of mastery, the source of education and the didactic tasks aimed at mastering the content. The following pedagogical conditions should be observed: creating opportunities for students to choose their inclinations for creative activity, forming a need for learning and demonstrating independence in the educational process; To create a favorable environment for students to think creatively, to accept different opinions and ideas with tolerance and to ensure their active participation in the educational process; to instill confidence in each student's ability to think creatively and to encourage their creative

activity on a regular basis. As a result, students will be able to use their own ideas and solve basic problems.

Thus, the pedagogical and psychological aspects of developing creative abilities in future teachers require comprehensive support and unique approaches. This process should be aimed at motivating and developing creative abilities, taking into account the individual abilities of each student. By developing creative abilities in the educational and training processes of future teachers, it is possible to prepare creative and competent individuals who are useful to society.

In conclusion, in developing the creative abilities of future teachers, it is important to pay special attention to the development of their pedagogical skills, and to make extensive use of modern information and communication technologies, innovative strategies, interactive methods, and teaching technologies.

Also, according to Nazarov, in the development of Western philosophical thought, the formation of the teacher's creative abilities is highlighted as an integral part of pedagogical skills. Such thinkers as Socrates, Plato, Aristotle, Cicero, Quintilian expressed their valuable thoughts on this issue. In ancient Rome, great attention was paid to the art of speech, the organization of dialogue and the attraction of listeners, that is, the art of oratory. As Socrates emphasized, the creative ability of a teacher is aimed at developing the desire for truth and the ability to think independently in students, rather than at conveying ready-made knowledge through the art of oratory. The famous orator Cicero (105-43 BC) emphasized that a true orator is based on the will of people, attracting them to activity and motivating them to action, and emphasized the importance of this quality for a teacher. Quintilian (30-96 BC) emphasized that the human mind develops through independent activity, and therefore education should be aimed at forming the student's ability to think independently and choose. If we analyze the ideas of Eastern and Western thinkers about personal creativity and the creative abilities of the teacher, the main factor that develops creativity in a person is independence, and the creation of the necessary conditions for independent activity in the educational process is of great importance. In the modern interpretation of these ideas, the issue of developing creative abilities in the teacher as one of the most urgent socio-

pedagogical problems today occupies a leading place in pedagogical and psychological research.

In our opinion, if we analyze the scientific research of Russian and foreign pedagogical and psychological scientists, it becomes clear that creativity is interpreted as one of the main components of individual creativity:

Creativity is the ability to overcome obstacles and problematic situations ;

Creativity – a person's activity and creative ability in all areas, regardless of talent;

Creativity is a collection of original ideas that have their own value;

Creativity is an action that is actively developed by an individual, is innovative, and has practical application;

Creativity – having a high level of unusual skills with in-depth knowledge acquired in a specific field;

Creativity is the ability to create new ideas and develop new skills.

Another group of researchers has studied various aspects related to the formation of individual creativity. As can be seen from the analysis, creativity has been studied to a certain extent in the fields of philosophy, sociology, social pedagogy, and general psychology. However, the main focus of these studies has been on the intellectual competence of the individual, creative thinking, and intellectual creativity. Creativity involves sensitivity to problems, intuition, anticipation of consequences, imagination, research and reflection. Developing creative abilities in future teachers requires a different approach. In this process, the main attention is paid to the effectiveness of the pedagogical process, the search for new teaching methods that ensure successful cooperation between the teacher and students. While intellectual creativity is described as the creation of new ideas and discoveries that serve the interests of society, pedagogical creativity is aimed at developing the student's personality and increasing the effectiveness of the pedagogical process.

Based on this, pedagogical creativity can be defined as follows: "Pedagogical creativity is an important quality in the successful organization of the pedagogical process, which is manifested in the

teacher's cognitive activity, non-standard thinking, independence, and creative abilities."

In the fields of pedagogy and psychology, pedagogical creativity has been studied in various directions. For example, in the studies of AVPetrovsky [91-575/580] and Maslow [77-365], pedagogical creativity was studied in relation to the ability of a person to communicate. Sh. Kurbanov's studies [64-190] show that a teacher's pedagogical skills are formed not only through experience. He emphasizes the importance of creativity in mastering the foundations of professional activity. V.A. Kan-Kalik divides the stages of development of creativity into the following levels:

- use of ready-made recommendations;
- optimization;
- heuristic level;
- personal independence.

So, the teacher always creates in collaboration with the students. Therefore, the teacher's creativity should serve the interests of the students. Developing creative abilities and bringing them to the level of innovation is important for all teachers. Today, scientific research is being conducted in our country in various areas on the professional training of future teachers, all of which are distinguished by the fact that they are aimed at democratizing the educational process, ensuring its individualization, and developing the professional skills of teachers.

### **3. Competency-based areas for improving students' creative potential in pedagogical education**

The formation and development of students' creative potential in the pedagogical education system is one of the priority areas of modern educational reforms. Because it is not enough for a future teacher to have only theoretical knowledge, he must be able to create innovations in his professional activities, solve problems based on a creative approach, and develop independent thinking and initiative in students. In this sense, the competency-based approach occupies a special place as one of the main methodological principles of the formation of creativity.

The essence of the competency-based approach is that during the educational process, students are not only given knowledge and skills, but also the ability to apply them in practice and find creative solutions in various situations is formed. This approach serves to increase the level of readiness of students for pedagogical activity by developing professional, social, communicative and creative competencies.

The competency areas for developing creativity are:

- to form in future teachers, within the framework of professional competence, the skills of creative organization of the educational process, effective use of innovative methods, and application of new pedagogical technologies;

- to develop students' divergent thinking within the framework of creative competence, to encourage unconventional thinking, and to organize independent research activities;

- to demonstrate creativity in team activities, find solutions together, and effectively establish pedagogical dialogue within the framework of communicative competence;

- self-development within the framework of personal competence, striving for innovation, independent decision-making, and support for personal initiative.

Thus, in the process of pedagogical education organized on the

basis of a competency-based approach, creativity is considered not only as a separate ability, but also as an integral part of the professional training of a future teacher. This serves to introduce innovative approaches to the education system, adapt students to modern professional conditions, and most importantly, to form them as creative teachers in the future.

The competency-based approach, first of all, involves not only providing students with theoretical knowledge, but also forming practical skills in them. Through this approach, students develop independent and creative thinking in various life situations, and their own unique ways of solving problems. The main importance of the competency-based approach is aimed at forming students' ability to effectively and creatively implement their professional activities in the future. The competency-based approach requires the development of a number of important competencies in students, including:

*Communicative competence* is the ability of students to communicate effectively in various social situations.

*Creative competence* is the ability of students to think innovatively and find solutions based on creativity.

*Critical thinking competence* is the ability to critically examine problems, analyze them, and justify one's own opinion.

*Responsibility and independent decision-making* – students develop responsibility for their future activities and developing the ability to make independent decisions.[125-183/187]

Studies show that a competency-based approach allows you to achieve positive results in the formation of students' creative abilities. For example, one of the most widely used methods in the development of students' creative abilities is the project method, which allows students to think independently and realize creative ideas. A competency-based approach allows students to form their creative abilities in the following areas:

*Through creative tasks* - by giving students various creative tasks, their ability to think independently and solve problems in their own unique ways is developed.

*Problem-based learning* – in the process of problem-based learning, students learn methods for solving complex problems independently and creatively.

*Network projects* - projects that enrich students' knowledge and skills related to various disciplines and fields and encourage them to find creative solutions.

The problems encountered in the process of forming students' creative abilities are as follows. There are a number of problems that arise in the formation of students' creative abilities. The most common of these are:

*Students' low interest in creative activities* is due to their lack of interest in creative approaches.

*Outcome-oriented teaching* - in some educational processes, attention is paid only to teaching students how to achieve a result, while learning the creative process is relegated to a secondary level.

*Lack of resources* – the lack of modern resources and materials necessary to implement a creative approach.[181]

In the process of professional activity, the future path of a specialist with a high level of creative competence is determined. Scientists consider the period of senior schoolchildren to be the most favorable period for the development of creativity. However, this does not mean that it is impossible to develop creativity during student life. A distinctive feature of the development of creativity during student life is that at this time creative abilities directed towards the specialty are well formed. In this case, interest in professional activity is combined with the cognitive activity of students, the determination and implementation of their own life path, and the formation of individuality. It is known that each person acquires a certain experience of activity through the growth of professional knowledge. Therefore, a person must enrich, renew, and supplement his professional activity with creativity. Therefore, it is appropriate for educational processes in higher education institutions to be not limited to theoretical knowledge, but to find solutions based on a competency-based approach to the assimilation of professional competencies, modeling of professional activity, and, in particular, the development of creative abilities in students.

Thus, the importance of the Competency Approach in the formation of students' creative abilities is incomparable. Through this approach, students will be able to achieve success not only in the educational process, but also in their future professional activities. As

a result of the correct and effective application of the Competency Approach, students develop the ability to think creatively, independently solve problems, and approach them with a fresh perspective. The formation of students' creative abilities based on a competency-based approach is aimed at increasing the effectiveness of the pedagogical process, educating creative and independent individuals in the educational process, and is one of the main tasks of the modern education system. For a comparative analysis of the competency-based approach to the formation of students' creative abilities, we consider the following scheme (Table 1.3.1.):

**Table 1.3.1.**

**Comparative analysis of the competency-based approach in the formation of students' creative abilities**

<b>Normative Source</b>	<b>Main ideas</b>	<b>Advantages</b>	<b>Disadvantages</b>
<b>State University of Education ( Republic of Uzbekistan )</b>	He believes it is important for students to be able to think competently and creatively , and to acquire new knowledge and skills .	It has developed the ability of joint work and research .	An approach to innovation always requires a lot of effort , time and resources .
<b>V.A. Si a stenin v a V.A. K a n K a lik (2020) "Theory of Pedagogical Competency Approach"</b>	Complex and meaningful exercises are proposed to develop creativity through a competency-based approach.	It helps with creativity and resilience, and increases confidence.	Creative abilities are difficult to observe and evaluate.
<b>K. Rogers and Maslow (2018)</b>	A person-centered approach develops creative abilities and encourages independent thinking.	Takes into account personal needs and interests.	It may not be suitable for all students, and it requires

Competency approach is considered as an important element in the development of creative abilities of pedagogical researchers in many publications . According to V.A.Slastenin [ 112-87 ] and V.A.KanKalik [ 64-70 / 73 ] , Competency approach helps students to develop creativity and creative thinking abilities . It is necessary to conduct work on the basis of research and general activities in addition to education . This method is useful for achieving creative results , but it can be the same for everyone .As stated by Rodgers and Maslow [ 77-365 ] , the person - oriented approach increases students ' creative abilities by taking into account their personal needs and interests .This , in particular , ensures the ability to make good decisions and promote new ideas .However , this method can be time - consuming and resource - intensive , which can create challenges in the public education system .

According to foreign experts , interest in the competency - based approach and its assessment is growing all over the world , and this new approach is considered an important factor in ensuring the quality of higher education . V. Khutorskoy defined competency as a set of knowledge , skills and methods of activity of a person necessary for qualitative productivity in a given area . According to K. Markova , competency is an individual indicator of compliance with professional requirements [ 139-146 ] .

So , the competence specialist 's readiness for higher professional activity , having professional knowledge and skills , is inextricably linked with the ability to apply for higher education . Competency approach is based on personal needs and professional activities in higher education . The education system is oriented towards education rather than education .One of the main tasks of the modern education system is to develop the qualities of creativity , innovation and creativity in students .At this point , it is necessary to develop the competence - creativity approach , to increase the effectiveness of specialized training .The student 's self - esteem , worldview , and other aspects of the student 's life are important .Also , the development of social activity , professional knowledge and

creativity in this age group is individual .In fact , it is important to develop the creative abilities of students , pay attention to the individuality of the person , and direct it to professional goals .After determining the interest of the students in the teaching profession , they were awarded English skills in order to improve their professional activity .

Today , the personal competence of the future teachers will be their ability to be in a humanistic relationship with the students . This relationship is related to the teacher , and this is the foundation of the cooperative relationship between the teacher and the teacher . Student perception is considered a fundamental value for a teacher , and the study of students ' interests , inner world , needs , abilities and individual characteristics is considered an important component of professional - personal competence , which is of social significance for future teachers [ 102-92 ] . In the development of the personality of future teachers , it is necessary to have a socio - value orientation of the educational process in the system of higher pedagogical education .In order to improve it , education should be based on humanitarianism , democracy , education , culture and individual approach .This approach brings the content of the educational process to a new level and deepens it .There are three interrelated blocks in this context : 1 ) general ;2) psychological- pedagogical ; 3) f a ng a block . Each block is presented with different modules .

Also , the general knowledge module represents one - third of the educational course . This module is a prerequisite for developing the worldview of the students , determining their professional direction , and also gaining in - depth knowledge of practical pedagogy . The main purpose of this block is to enrich students with general knowledge and competence . In order to provide students with general knowledge , they should have a proper understanding of different nationalities , languages , arts , and specific higher education institutions .This module includes methodological , axiological , historical - cultural , socio - economic , educational - scientific and communicative knowledge that develops worldview .

The psychological -pedagogical module, which is a part of the educational content , covers approximately one - fifth of the total course . This module is aimed at making the students as professional

as possible . In particular , the development of students ' creative abilities , creativity , theoretical analysis , design skills , and the ability to effectively increase pedagogical activity is considered .The student 's personality and his creativity were short - lived ;This is a long - term process , and the student needs time to develop these skills on his own . The following requirements are important in developing students ' creative abilities :

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organizing the process of higher pedagogical education aimed at developing the professional creativity of students;

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to allow a range of special situations and beyond a study process , professional of creativity and life of the highest order take action participant in a development ;

to allow a range of creativity of a higher level subject in a possible actions to create ;

Looking for a job near you and many research high school students to exert force ;

students many creative solution to grow and the law higher education institutions with occupation possible a coin supply ;

of the students ' creativity of a high level experience professional necessary and in the future professional of the highest order reward part in a ' to give ;

professional skills and interests development The current situation method and a technological level a useful hold a must a creative field , must a knowledge to take , oneself education and himself skills to shape ;

cultural - educational students in the process take action participation achievements supply ;

oneself - oneself professional development personal injury point a year thoughts development , personal experiments to ' plan a sh and you creativity what is the reason possibility of reaching to give ;

pedagogical but a lie and research creative in the field forces what is the reason to grow ;

from the auditorium outside of a high level a social valuables please help me to give ;

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of the students must do work abilities development and this creative in the process think

oneself - oneself start asosid a t a l a b a l a rni social ah a miy a tg a eg a f a high a tg a j a lb to grow ;

creativity abilities what is the reason to do for slave pedagogical environment to create ;

blue and white work and the basis of the initiative sh a kll a r behind creative - new ideas development ;

of the students pedagogical high school must do educational niche and analysis to do abilities development .

Above methods with together , t a l a b a l a rning must do knowledge to take talent development yes creative abilities in the picture separate place hold on T a l a b a l a r's creative talent to form You must be there . knowledge to direct , creative think about it development and their f a higher a tig a creative swelling next to it important pedagogical conditions s a n a l a di . Below is the list pedagogically creative Competence increase structure and factors j a d v a l i n i seeing We get ( Table 1.3.2 . ) :

**Table 1.3.2.**

<b>Components</b>	<b>Definition</b>	<b>Factors</b>
<b>Knowledge and theory</b>	Knowledge, theoretical understandings, and methodology related to creative activity.	Curriculums, interdisciplinary approaches.
<b>Imagination and ideas</b>	Ability to embrace new ideas and innovative approaches.	An inspiring environment and mentorship are helpful.
<b>Skills and qualifications</b>	Acquire practical skills related to creative activity.	Practical exercises, professional training.
<b>Strength and motivation</b>	Striving for creative activity and determination, patience in achieving success.	Motivation events , social q o ' ll a b - power .
<b>Critical thinking</b>	New g 'o y a v a q a r o rl a rni analysis to do , to cause -to understand ability	Group activities discussions .

<b>Social cooperation</b>	Community work , self - employment and gratitude to do ability	Group projects , interactive teaching .
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This structure and factors play a key role in the formation of creative competence and its development . The role of educational environment , methodological and mentoring is important in promoting creative thinking among students .

Creativity is a personal trait that allows a person to solve problems in a creative way. Creativity can be general or specific. Tests are used to determine creativity. A creativity test is a standardized method of determining a person's creative abilities, mainly using verbal, graphic, and digital materials. Scientists offer the following diagnostic methods to determine the level of creative development of a person:

*Observation;*

*Creating experimental situations;*

*Test.*

The development of creative abilities in students depends on many different factors that affect the nature and manifestation of creative abilities. These factors can be divided into three general groups. *The first group* includes natural inclinations and individual characteristics that determine the formation of a creative personality. *The second group* includes all forms of influence of the social environment on the development of creative abilities. *The third group* is the dependence of the development of creativity on the nature and structure of the activity. Creativity is present in each child as a unique property. Moreover, creativity is not considered as a single factor, but as a combination of different abilities that manifest themselves in different degrees in each person. Therefore, for psychologists and educators, all children should be perceived as potentially creative. For the educator, it is important to notice the child's inherent creativity and strive to develop it.

Creativity develops only through activity, and many researchers emphasize that children develop a non-creative way of thinking as a result of their engagement in “closed” tasks during their learning process. Such tasks are tasks that have a set of defined elements and a single correct solution. Children develop a way of thinking based

on the knowledge and activity formed as a result of the exercises. Creative abilities can be formed if the child has the opportunity to work with “open-ended” tasks. These tasks provide complete independence in choosing a solution method and allow the child to propose any solution to problems. Creative abilities are manifested more easily and more often, that is, in activities to which the child has certain inclinations. Therefore, it is important to involve and observe children in as many activities as possible. The social environment plays an important role in the formation of a creative personality. Although the environment does not "create" a person with creative abilities, it has 95% of its influence, the remaining 5% depends on hereditary factors. The demands of the social environment, directly shaping values and attitudes towards the environment, learning, can stimulate the creative abilities of children who do not have high creative abilities. The issue of developing creative abilities in students has always been important, and the forms, methods and tools used in these processes do not lose their importance in constant development. School education is the basis for students' learning, therefore, it is necessary to ensure the development of creative activity in students at the initial stages of learning in these processes. Therefore, developing students' creative abilities and improving creative activity is one of the important issues of today.

To organize creative activity, it is important for the leader to have a good knowledge of modern concepts of psychological development. Some foreign psychologists believe that the main task of creativity is to identify and strengthen the innate character of a person. They see creativity as a process of spontaneous development of the individual. They also recognize that the psychological characteristics of a person are formed throughout life. In their development, both the environment and the conditions of experience and activity play a decisive role.

As criteria for assessing the intellectual development of a person in the creative activity of students, psychologists indicate the following aspects: 1) the speed of assimilation of materials; 2) the density of thinking, that is, the number of considerations; 3) the level of analytical-synthetic activity; 4) methods of forming mental activity arising from the study of an object; 5) the ability to independently

systematize and generalize the knowledge gained. In the process of organizing students' creative activity, it is necessary to take into account their psychological characteristics. The first characteristic is related to the content of the creative problem. Studying the object of creativity requires students to abstract and create ideal models. This process expresses creative thinking. The second characteristic is the use of numerous models, illustrative structures and symbols (formulas, graphs, etc.) in the teaching process. Students need to move from perceiving real objects to creating ideal models and their symbolic representations. The third characteristic is the ability of students to independently perform creative work through experimentation, testing, and observation. The above psychological characteristics are important in making creative issues understandable to students, as well as in forming and developing imaginative operations (analysis, comparison, juxtaposition, identification of general and specific aspects, abstraction, generalization, synthesis, etc.) [182].

Nowadays, there is a growing interest in the issues of creativity in educational activities. This is also due to the recognition by society of the importance of developing creative thinking in the development of the individual and his self-realization, the need to increase the ability to overcome problems in problematic situations and to act effectively, relying on educational potential. The issue of revealing creative opportunities has acquired a new look, which determines the conditions for the effective activity of a person. In other words, the modern socio-economic and cultural-historical situation requires the development of the creative potential of students, because creativity is the highest level of abilities for any type of activity. Abilities are understood as individual psychological characteristics of a person, which ensure the successful implementation of the activity and the dynamics of the process of mastering knowledge, skills and competencies. Abilities are divided into two groups that are closely related to each other. [182] For the development of abilities, activity alone is not enough; the process itself must also generate pleasant feelings and strong positive emotions. If this is not the case and the student engages in mental activity for some other motive, for

example, obedience or fear of punishment, he will receive knowledge, but the abilities will not be formed.

According to modern pedagogical science, additional education enriches the life experience of each child and takes into account his abilities in the process of various types of activities. This ensures that children can express themselves and realize themselves, that is, develop their creative abilities, which is an important component for the full development of children. General creative abilities are the individual characteristics and qualities of a person that determine the successful implementation of creative activity.[182]

In creative skills development lessons, reproductive tasks are used mainly to involve children in activity ( *razminka* ) and develop the psychic mechanisms underlying their creative abilities. Despite the existing negative aspects of reproductive tasks, they can be used in various ways to increase the coefficient of beneficial effects. The tasks have a limited time to complete. They are performed at a fairly high speed, with 2-3 seconds to respond. Questions from different fields of knowledge are constantly being asked. Such work develops the ability to concentrate and quickly switch from one type of activity to another. These skills are part of the structure of creative character and can be used in economics lessons, as well as in competitive and specialized courses.[190]

Their essence is that the conditions of the task direct the student towards a previously familiar solution, which ultimately leads to a mistake. In the initial stages of the lessons, many students feel psychological discomfort and ask to repeat the task again. Only later, after practice, do they get used to such tasks, learn to be constantly alert and focus their attention and memory in the right direction.

*Interactive tasks* . These tasks allow students to quickly identify their interests and identify ways to develop them. In the process of solving creative and non-standard problems, children will be happy to engage in the process of creative thinking and intuitively feel the beauty and grandeur of science. Depending on the specifics and goals of the implementation of various tasks, the basic model of the lesson aimed at developing creative abilities can be used in the system of various disciplines. Its structure includes four stages. Thus, a complex system of work with talented young people using various educational

technologies was formed in the scientific education center. This helps to develop the economic thinking of young people, which is reinforced by theoretical knowledge and practical application skills. The implementation of the proposed forms of work is aimed at increasing the creative abilities of young people, their opportunities for self-realization and self-development.

In conclusion, an individual approach allows teachers to demonstrate their unique abilities, make independent decisions, and introduce personal creative methods into the educational process. Thus, an individual approach to the development of creative abilities strengthens both the personal and professional skills of teachers, thereby helping to increase the effectiveness of the educational process. In the process of forming creative abilities, teachers should work in the following areas: involving students in creative activities, creating opportunities for them to master new types of activities, and organizing creative teams to develop creative qualities. At the same time, it is important to prepare future higher education teachers to increase their intellectual potential in various specialties, introduce them to innovative educational technologies, modern methods and tools, as well as to form professional competence and creative abilities in teachers.

is of great importance for the professional growth of a teacher and effective education of students. This process is an important part of preparing them for professional activity in society. Based on the above points, it can be said that in today's era of rapid changes and developments taking place around the world, every teacher must have modern knowledge in his field, continuously work on himself and prepare students for these changes.

#### **4. Principles of project-based approach and creativity development in the pedagogical education process**

The formation of creativity in the process of pedagogical education is one of the most important directions of the modern educational strategy. Because a teacher who does not have creative thinking cannot go beyond standard approaches in his work and cannot form independent thinking in students. Therefore, in order to develop creative abilities in future teachers, it is necessary to widely use innovative methods and pedagogical technologies, along with traditional educational methods.

The importance of innovative methods is that they allow students to put forward new ideas, find unusual solutions to existing problems, as well as develop independent and critical thinking skills. For example, the “problem situation” method, “brainstorming”, “cluster”, “concept map”, “role playing” and other interactive methods stimulate students' creative activity.

Pedagogical technologies help to organize the educational process systematically and effectively. Through multimedia tools, electronic textbooks, virtual laboratories, distance learning platforms, and programs based on artificial intelligence, the process of students' learning becomes more interesting and creative. This, in turn, creates new opportunities for their professional training.

In the process of developing creativity, especially methods such as project-based learning , case studies , gamification , critical thinking exercises , as well as STEAM education (the integration of science, technology, engineering, art, and mathematics) are effective. Such approaches serve to enhance not only professional knowledge, but also creative potential in students.

an individual approach to the use of innovative methods and technologies occupies a special place. A creative environment created taking into account the personal interests, psychological characteristics and professional motivation of each student will realize their inner potential. In general, the formation of creativity in pedagogical education is carried out not only by imparting theoretical knowledge, but also through the widespread application of modern innovative methods and pedagogical technologies. This is the most

important guarantee of training competitive, creative and enterprising teachers in the future.

An individual approach in the process of pedagogical education is one of the most effective methods for improving the creative potential of future teachers. Each student's creative abilities are formed differently: some have a strong artistic mindset, while others have a tendency to scientific research. Therefore, educational experiences organized on the basis of an individual approach are aimed at directing students to creative activities, taking into account their personal characteristics. Developing the creative abilities of future teachers is of great importance in the educational process. Creative abilities include the ability of students to express their thoughts, solve problems, and create innovations. Project-based learning is a teaching method that helps students solve real-world problems, providing them with experiential and practical approaches. This study analyzes the main principles of shaping the creative abilities of future teachers through project-based learning principles.[94]

Project-based learning is a learning model that allows students to actively participate, develop their ideas, and collaborate. This approach helps develop students' creative thinking skills as they are forced to innovate, make choices, and make decisions as they complete their projects.[184] This method also creates conditions for the development of creative abilities, as well as developing personal and teamwork skills.

*The principles of developing creative abilities are as follows :*

**Problem-based approach:** In the project-based learning process, students should be given tasks aimed at solving real-life problems. This helps develop students' creative thinking and problem-solving skills.

**Collaboration and Teamwork:** Having students work together on a project in groups improves their communication skills. Collaboration fosters creative thinking and allows for peer feedback.

**Practical experience:** In the project-based learning process, it is necessary to pay attention to increasing students' practical experience. Students can develop their creative abilities by testing their ideas in practice.

Reflective approach: Allowing students to analyze and evaluate their own activities is important in developing their creative abilities. A reflective approach helps students understand their successes and mistakes.

Innovative approach: The use of innovative technologies in project-based education helps to develop students' creative abilities. Digital resources and multimedia tools provide students with ample opportunities to realize their ideas.

Project-based educational principles play an important role in developing the creative abilities of future teachers. These principles, which include a problem-based approach, cooperation and teamwork, practical experience, a reflexive approach, and innovative approaches, are effective in increasing students' creative thinking abilities. The application of these principles in the educational process helps to shape the creative abilities of future teachers and lays the foundation for them to become successful specialists in the future.

Project-based learning is a useful method that allows students to apply all of the above advantages in a contextual and meaningful way. In a project-based learning environment, students work in small groups and actively participate in the learning process. In other words, students step out of their passive comfort zone and actively engage in a new learning process. For example, they interact with their classmates through brainstorming, negotiation, discussion, debate, and organization to develop their projects. [185] Peterson and Meyer describe this learning as a teaching method that allows students to be highly active and connects what they learn in the classroom to their real lives. Haines defines project-based learning as an approach to education that complements mainstream methods and can be used in an active way with students of almost all levels, ages, and abilities. While Wrigley wrote that project-based learning involves a group of students experiencing their own problems, developing a solution, and presenting the results to a wider audience, Thomas called project-based learning a model for organizing learning around projects.[69-128/142]

Boss and Krauss call project-based learning a strategy for transforming traditional classrooms using modern technologies. According to Davy and Kilpatrick, students perceive project work as

a practical exercise, in which students learn more independently and actively. [69-128/142] Stoller emphasizes that project technology is so multifaceted that it is difficult to give it a single definition. Summarizing all of the definitions given above, it can be said that all of these authors have come to the conclusion that project technology is an educational approach that allows students to experience the content of their courses.

Project-based learning is an educational approach built on authentic learning activities that engage and motivate students. These activities are designed to answer a question or solve a problem, and generally reflect the types of learning and work that students do in the real world outside the classroom. It is a dynamic approach to teaching that involves students working in small cooperative groups to solve real-world problems and issues while simultaneously developing their curricular skills. All of these definitions broadly reflect the ideas behind what project-based learning is and how it benefits students. Project technology is a means of increasing student motivation and interest, as it allows students to actively participate in the learning process and acts as a bridge between what is learned in the classroom and the real world, as well as developing social interactions. As the name suggests, projects are a key activity in a learning-based curriculum. This environment allows students to read a variety of sources, discuss with their peers the best strategies for presenting or implementing their projects, and work on their final product. It is also a good choice for teachers who want their students to be at the center of their learning.

In recent years, pedagogical research has shown that this type of education is a productive technology that enhances the most important life skills for students, and interest in its use in the educational process has begun to grow. Today, the transition to new educational standards poses new challenges for higher education institutions. They are setting the educational process the task of searching for and introducing new pedagogical technologies, mechanisms, and teaching methods that will ensure the formation of competitive specialists who meet the requirements of the modern labor market. Because the traditional education system is based on the transfer of ready-made knowledge, it is focused on solving

theoretical and practical tasks according to existing algorithms and schemes, and as a result, there is little focus on the development and improvement of students' knowledge.[150]

As a result, the problem of finding effective ways to solve the problems of preparing high-quality professionals at a new level is emerging. Dewey did not create a project-based educational consortium. He simply helped to return the concept of “ *learning by doing* ” to the educational system of teachers around the world. Now, more than a century later, it is being used in classrooms around the world. This will increase students' learning and cognitive motivation in the process of preparing for training sessions based on project technology for students studying in higher education institutions; develop students' cognitive activity; increase students' responsibility for lesson preparation and will be reflected in the quality of encouragement for further educational activities.

It also develops students' creative abilities, problem-solving skills through critical thinking, and collaborative working skills. Thus, the use of project technology is organized on the basis of the educational content, goals, and structural structure specified in the qualification requirements; forms a foundation for students in the fundamentals of the general pedagogy course, instilling scientific elements; increases their interest in the subject; It should be aimed at improving students' reading, writing, listening comprehension, and speaking skills; and laying the foundation for creative thinking skills and competencies.

Our research on the principles of developing students' creative abilities through project-based education has studied the specific features of project-based education and its importance in developing creative abilities. This approach helps to increase students' active participation, their ability to think independently, their ability to find creative solutions, and their skills in working effectively in a team.

Innovative teaching methods, in particular, effective forms, methods and means of organizing students' educational and cognitive activities, are of great importance in developing creativity in students in the interactive learning process. Therefore, in the course of research, measures that serve to develop creativity in students were

developed and implemented in the following areas, using the above-mentioned stages as an example (Table 2.1.1.).

It is known that interactive teaching methods are an important tool for organizing the interactive learning process. Interactive teaching methods (ITM) are a system of teaching methods based on the needs of the learner to activate his cognitive activity and based on the “subject-subject” relationships organized in the educational process through mutual cooperation.

**Table 2.1.1.**

<b>First direction</b>	students to familiarize themselves with the content of concepts such as "creativity", "creative activity", "pedagogical creativity", as well as the essence of innovative reforms in education, to assimilate theoretical knowledge that serves to shape their inclination to creativity.
<b>Second direction</b>	Practical measures that help develop creative, research and research activities among students, and form creative skills.
<b>Third direction</b>	A set of measures aimed at diagnosing the level of development of creativity in students based on the acquired theoretical knowledge and formed skills and qualifications (Table 2.1.1.)

Collaborative action is characterized by the exchange of knowledge, ideas, and tools in the learning process, with the availability of tools that allow each student to make a specific contribution to the work process. In this case, collaborative action is based on the activation of learners, group practice, and feedback (Table 2.1.2).

**Table 2.1.2.**

**An integrated pedagogical system for developing students' creative abilities in the process of interactive learning**

Interactive learning process						
<b>Stages of development of</b>	<b>Content of creative abilities</b>	<b>for Professors and teachers' activities</b>	<b>Student activities</b>	<b>Forms of activity</b>		

**creative abilities**

**Stage 1  
Reproductive-  
motivational**

Having a clear goal and motivation, awareness of the content of innovations in education, the birth of a new idea

Giving students independence, personal guidance, developing cognitive needs, and determining their inclinations

Understanding the essence of the activity, activating the acquired knowledge, forming a clear goal

improvement

Trainings, role-playing games, seminars, laboratory exercises

**Stage 2  
Creative search**

Research, creative activity, unconventional thinking, cognitive independence, improvisation, innovation

Providing guidance, encouragement, supervision, and information and data that need to be assimilated

Source analysis, problem formulation, understanding the essence of the educational problem, research, empirical verification of new ideas

Training, role-playing, modeling, small exercise workshops, seminars, laboratory exercises, creative projects, independent creative work, presentations

**Stage 3  
Innovation**

Implementing, evaluating, analyzing, popularizing, and widely implementing the created innovation

Study, analyze, evaluate, encourage, and form a final conclusion of the results of the activity.

Reflection, analysis of performance results, self-assessment, and development of strategic

Seminars, trainings, presentations, roundtable discussions, castings.

Interactive teaching methods differ from traditional teaching methods in that they not only consolidate previously acquired knowledge, but also enhance the process of acquiring new knowledge through collaborative activities. Interactive teaching methods include the following:

*problematic statement;*  
*case study;*  
*business games;*  
*role-playing games;*  
*POPS formula;*  
*carousel;*  
*a television talk show-style debate;*  
*decision tree;*  
*blitz poll;*  
*educational discussions;*  
*Socrates' dialogue;*  
*project planning;*  
*opinion scale;*  
*video method and others .[186]*

Below, we also consider a number of interactive teaching methods that can be effectively used in higher education institutions.

*Case study (CSA) or case study* is an effective interactive method that activates the learning activity of learners. The case method is widely used in teaching economics and business administration. Case study is an analysis of specific situations or a "detailed description of the situation". This method is considered one of the most effective methods in the German experience in the system of training and improving the skills of management personnel and is based on the development of decision-making and problem-solving skills.[186] The goal of this method is to develop in learners the skills of analyzing information, identifying problems, selecting alternative solutions, evaluating and finding a solution. The case method is not just a collection of cases, but is also enhanced by the teacher's methodological recommendations, questions for discussion,

assignments for students, and didactic materials. It is possible to outline 5 stages of creating a case that develops creativity for future teachers:

*finding the source of the case;*  
*collecting information for the case;*  
*modeling case content;*  
*presenting the case to the audience;*  
*shaping the case solution.*[168]

*Role-playing* is one of the interactive teaching methods based on imitation, and its main features are reflected in the following: Defining a problem or task and assigning roles among participants to solve it. [188] For example, this method can be used to organize the lesson process. Actions among participants: Each participant enters his role, freely expresses his thoughts with others; Teacher's conclusion about the exercise: the teacher complements various methods of solving the problem and creates a discussion between students; Evaluates the results of the discussion carried out between the teacher and students; The use of role-playing games in developing creativity in students allows them to form an active approach, sociability, assessment of non-standard situations, independence, creativity and improvisation skills.

One of the most effective methods for organizing an interactive learning process in higher education institutions is *the video method*. The video method allows for the delivery, control, and consolidation of information through the use of on-screen information delivery sources.[189] With the help of this method, students develop their ability to self-monitor and evaluate, and draw conclusions in solving problems based on visual representations. One of the important conditions for the effective organization of the interactive learning process is the selection of the right methods and the precise definition of interactive forms. On this basis, the recommended forms and means of interactive training for the development of creativity in students include the following:

*completing creative tasks;*  
*work in small groups;*  
*energizer exercises;*  
*trainings and video trainings;*

*presentations;*  
*quizzes;*  
*press releases;*  
*creative projects;*  
*interactive excursions;*  
*interactive presentations;*  
*seminars and trainings;*  
*video conferences[189] and others.*

Creative tasks are the basis of the interactive method, developing independent learning, research, and a creative approach in students.

Many researchers say that since this method has become a tradition, the process of re-applying the project method in the education system is taking place. However, practice and experience show that this method is becoming necessary due to the changing needs of society and the value of a knowledgeable person. Since today every school graduate has the problem of finding his place in a highly competitive society, it is necessary to develop such qualities as research, creativity, determination, agility and practical skills. These qualities can be formed in a person in the process of creating and implementing a project. Project activity is considered the most effective way to organize students' learning and professional orientation during a certain academic period (year or semester). The project method essentially helps students to arouse interest in learning through independent work, to acquire new knowledge and skills by setting clear goals and problems for them and solving them. The project method is a didactic method consisting of a comprehensive analysis of a problem with a specific solution. VVGuzeeva considers the project method to be one of the pedagogical technologies that prepares current school graduates for active participation in the social environment by improving their knowledge. From the point of view of pedagogical psychology, the definition of the project method is given by N.A. Barikova as follows: "The project method is an individualized method of education that helps students solve problems and come to practical conclusions through independent learning." [44-301] The issue of classifying educational projects has been consistently studied. The main and distinctive features of the project method are emphasized as follows: [127-277]

- Depending on the type of activity, projects based on research, analysis, creative approach, role-playing, and practical exercises can be distinguished;

- by content - monoprosjects (within one discipline), interdisciplinary projects;

- according to organizational characteristics - open or hidden;

- The connections are characterized by their nature - school, class, city, region, country, and international projects.

When using the project method, we pay attention to various types of activities. With the help of the project method, such forms of organizing work as lectures, seminars, laboratory and practical exercises, project defense, term paper are distinguished. In order to activate the educational system, the collective project method can be used in pedagogical practice. These issues were discussed in the scientific research of Ch. Myers and TV Jones. found the opposite. According to I. Bem and Y. Schneider [89-112], the goal is achieved if, in the process of achieving a result, the student has a “product” through independent activity and others can also benefit from the results of his labor. Here, the “product” refers to all the skills that the student acquires in the learning process. This includes knowledge, skills, ideas, practical conclusions, as well as spiritual values and human virtues. ANKHUDAIBERGANOV[139-146] emphasizes that a student's knowledge grows as a result of internal and external educational activities. Internal factors consist of the student's work on himself and his desire to acquire the necessary knowledge, while external factors include the knowledge acquired by the student through his participation in the project process. The table below lists the characteristics and skills developed as a result of a student's participation in the project process ( Table 2.1. 3 ).

### 2.1. 3 .-table

<b>Main features of project education</b>	
<b>Features</b>	Main features
<b>Learning</b>	Learning to draw conclusions from experience; Learning to find ways to solve a specific problem; Learn to generalize your knowledge; Self-education; Having personal methods and means of learning

<b>Search</b>	Using the database; To learn the opinions of those around you; Get advice from experts; Data collection;
<b>Thinking</b>	Learning to work with documents and classify them Critical approach to information; Connecting past and future events; Overcoming difficulties and self-doubt. Being able to express one's opinion in discussions; Assess the relevance of the political and economic environment; Being able to assess various diseases and habits related to human health and the environment
<b>Collaboration</b>	Ability to work in a team and communicate; Decision-making; Resolve disagreements and reach a compromise; Development and execution of contracts; Ability to protect intellectual property.
<b>Getting started</b>	Join the project; Take responsibility and assume leadership positions when necessary; Contribute to the team; Ability to demonstrate teamwork; Ability to organize work; Use of computing tools; Conducting product and technology presentations.
<b>Adaptation</b>	Take advantage of information and communication technologies; Ability to demonstrate adaptability in the face of rapid change; Being able to demonstrate strong will in the face of adversity; Finding new solutions.

Along with knowledge and thinking, abilities play an important role in the formation of such characteristics of project education in a student. In the harmony of these qualities, it is easier to achieve the

intended goal. IKA Abdirimov in her research showed that the school emphasizes that the main task is to reveal and help develop the abilities and knowledge of students. [21] In order for a student to be capable, he must be given thorough knowledge. The sum of knowledge, experience, values, and interests acquired through education is reflected in the formation of a student as a capable and modern person. Thus, ability is a set of knowledge that allows you to make effective decisions in a certain area and is considered an acceptable form of engaging in a certain activity. A gifted, talented student has the ability to think critically and choose the optimal one from among ideas.

So, analyzing the above ideas, we can see that, in our opinion, project learning is the main feature of shaping student abilities. At first glance, the goal of the project method seems to be only to achieve the final result, but there is another side to the issue: pedagogical efficiency is ensured by the student working on himself, developing the ability to independently apply his knowledge in practice. At a time when innovative approaches are being implemented in every sphere in our country, these ideas have a place in the development of the country. In recent years, the effectiveness of project activities in cooperation between educational institutions in many cities and countries in designing socially significant products and creating websites has become evident. Therefore, it is important to fully understand the project method in education and to use this method in secondary schools and higher education institutions in our country.

The results show that the main principles of project-based learning, such as communication, collaboration, creative inquiry, and problem-solving skills, play an important role in shaping students' creative abilities. Giving students the opportunity to solve real-life problems helps them express their thoughts freely and develop innovative ideas.

The study also emphasized the importance of projects to enhance students' social and emotional skills, which contribute to their personal development, self-assessment, and self-development skills. For this reason, the professional competencies, innovative approaches, and effective planning of the educational process of

future teachers are of great importance in organizing the formation of creative abilities through project-based education.

In general, project-based education serves as an effective tool for preparing students for creative thinking, developing creative abilities, and successfully functioning in modern society. The development of creative abilities in students within the framework of research, proceeding from the content, requires an integrative approach to the stages of reproductive-motivational, creative search, and innovative development.



## 5. Didactic possibilities of interactive methods and technologies in developing creativity in students

The use of interactive methods and technologies in the educational process not only increases the effectiveness of knowledge transfer, but also creates the opportunity to involve students more widely in creative activities. Because the essence of interactive methods is aimed at ensuring the active participation of students in the educational process, developing their personal thinking skills, and revealing their creative potential.

Regarding the role of interactive technologies in shaping creative abilities, for example, interactive learning platforms, online simulations, and multimedia materials create favorable conditions for students to assimilate new knowledge. Through such technologies, students actively participate in the process of testing their creative abilities, developing new ideas, and solving problems. [191] The following are methods for developing creative abilities in the educational process:

*Group work* : Divide students into small groups and encourage them to work together on a problem. In this process, students learn from each other and develop new ideas together.

*Project-based learning* : Students work on a project to complete an assigned task, which helps them learn creative thinking and project management.

*Role-playing games* : Using simulations and interactive games in the learning process increases students' interest and develops their creative approaches.[191]

Teachers can develop students' creative thinking and problem-solving skills through the use of interactive teaching methods. In general, interactive teaching methods and technologies are very effective tools for shaping students' creative abilities. They allow students to develop new ideas, develop creative thinking, and improve their problem-solving skills. The widespread use of such methods in the educational process helps students to actively participate in education, develop creative thinking and express themselves as individuals. At the same time, teachers can more

effectively develop students' creative abilities by using interactive methods to improve their knowledge and skills.

The formation of the creative abilities of future teachers is of great importance in the modern education system. Interactive teaching methods and technologies play an important role in this process, as they increase the activity of students and develop creative thinking. This study analyzes the didactic capabilities of interactive teaching methods and their role in the formation of creative abilities.

Interactive teaching methods, such as group work, discussions, role-playing games, and other active methods, help develop students' communication and creative thinking. These methods encourage students to solve problems, think creatively, and express their ideas freely.

*Didactic opportunities include the following :*

**Enlivening the learning process:** Interactive methods encourage students to actively participate and keep them interested in the lesson.

**Developing creative thinking:** Students try to find creative solutions in different situations, which increases their creative abilities.

**Encourage collaboration:** Through group work, students learn to collaborate, share ideas, and learn from each other.

*Creative abilities of teachers.* Creative abilities are the ability of teachers to develop new ideas and implement them in the educational process. Interactive teaching methods are considered very effective for developing these abilities.

*The influencing factors include the following:*

**Interactive learning environment:** In an interactive learning environment, students have the freedom to express their ideas freely and solve problems.

**Creative Problems:** Educators can develop students' creative abilities by giving them tasks that encourage them to solve creative problems.

**Reflection:** Students have the opportunity to analyze their experiences and creative processes, increasing their creative thinking.

Interactive teaching methods are of great importance in shaping the creative abilities of future teachers. They encourage students to be active, think creatively, and collaborate, and allow them to develop

the educational process in an effective manner. The application of these methods in practice helps teachers develop creative and innovative solutions, and also makes the educational process more effective and interesting.

The theoretical foundations of developing students' creative abilities through interactive teaching methods and technologies require studying the professional and social necessity of organizing interactive educational processes, the pedagogical and psychological aspects of developing students' creative abilities, and the requirements established for developing students' creative abilities based on a competency-based approach.[192] Interactive teaching methods are of great importance in the formation and development of creativity in students, allowing the application of interactive technologies in the educational process, group training, teamwork and collaborative activities. The professional and social necessity of organizing interactive educational processes allows us to analyze the need for creative activity, the improvement of professional training, the effective aspects of interactive education, as well as teaching models and classifications.

The analysis of existing concepts shows that the theory of person-centered learning includes the paradigms of the Competency-Based Approach and the Project-Oriented Problem-Based Learning, and also requires the organization of various areas of education. For this reason, the classification of teaching models prioritizes the acquisition of a large part of the knowledge that students need to acquire through the assimilation of pedagogical experiences.

The development of the individual and his orientation towards creative activity is a central issue of sources in the field of pedagogy, psychology and philosophy, which requires an analysis of research on various areas of shaping the professional training of future teachers. In interactive learning, students are actively involved as subjects of independent development, expressing their personal attitudes to new information, and enriching their professional experience, which requires studying the pedagogical and psychological aspects of developing creative abilities. In this regard, attention should be paid to the effectiveness of diagnostic methods

used to study students' creative abilities in interactive learning processes.[192]

Requirements for developing students' creative abilities should be developed based on a competency-based approach. Focus on developing professional creativity in students, approach students as individuals and future mature professionals, ensure their development as subjects of professional creativity and life activity, strengthen research and problem-solving areas, develop creative problem-solving and creative activities, take into account professional needs and the content of future professional activity, develop on the basis of modern methods and technologies, Such requirements as independent creative activity, independent knowledge, self-education, self-knowledge, self-determination, self-affirmation, and ensuring the active participation of students in cultural and educational processes serve to develop creative abilities. The following aspects can be included in the list of aspects that develop students' creative abilities:

*To direct the process of higher pedagogical education towards the development of professional creativity in students;*

*Approaching students as individuals and future professionals, developing them as subjects of the educational process, professional creativity, and life activity;*

*To shape the personal and professional development of students as subjects of creative activity;*

*Strengthening the areas of inquiry and problem-based research in the educational process;*

*Creating opportunities for students to creatively solve problems and develop their creative activities;*

*To achieve students' approaches to the experience of creative activity as a professional necessity and an integral part of the content of future professional activity;*

*Developing the professional skills and competencies of future teachers through work on modern methods and technologies, forming the ability to demonstrate independent creative activity, acquire independent knowledge, self-education, self-knowledge, take ownership of one's position, and self-affirmation;*

*Ensuring the active participation of students in cultural and educational processes;*

*In the process of independent professional development, to update personal perspectives, clarify personal experiences in the field of determining one's position, implement one's activities, demonstrate creativity, and educate oneself;*

*To demonstrate their creative abilities in pedagogical improvement and research activities;*

*To guide future teachers in acquiring socio-personal values in organizing their work outside the classroom;*

*To activate students' independent work skills, achieving creative thinking in the process;*

*Involving students in socially significant activities based on the principle of self-management;*

*Creating a favorable pedagogical environment for future teachers to demonstrate their creative abilities;*

*To develop creative activity in students using forms of work based on teamwork and cooperation;*

*To develop the skills of future educators to think independently and to direct themselves in an independent manner.*

The requirements for the development of professional creative abilities of future teachers are to ensure the active participation of students in cultural and educational processes, to update their personal point of view in the process of independent professional development, [193] to clarify their personal experiences in the field of determining their position, to apply their activities, to demonstrate their creativity, to educate themselves, to participate in pedagogical practice and research activities. Attention should be paid to the effectiveness of diagnostic methods for demonstrating one's creative abilities , organizing students' extracurricular activities, directing them to master social and personal values, involving them in socially significant activities, and using forms of work based on teamwork and cooperation.

In the future, a team based on the correct solution of problems of specialization aimed at developing creative abilities, using forms of work based on teamwork and cooperation, interactive pedagogical technologies, analysis and synthesis, developing research, supporting independent activity of students, conducting activities in accordance with the requirements of the world field in the educational process,

organizing education on the basis of modern concepts, and achieving effective and constructive results. Teaching methods, project work, shaping the collective experience of education, developing experimental games and interactive proposals, parents, veterans, organizations, assistance in engaging in independent activities, and developing creative and creative activities are offered.

We also tried to improve the model below, analyzing the diagnostic system for the formation of students' creative abilities ( Figure 2.2.1).

The formation of creative abilities in teachers is one of the most important areas of pedagogical activity, and this process is of great importance in improving the quality and efficiency of education. Below are the basic rules for the effective organization of this process:

1. *Person-centered approach* . To develop the creative abilities of a teacher, it is important to take into account personal needs and abilities in the educational process. It is necessary to create conditions aimed at developing the professional and creative abilities of each teacher. This is achieved through the use of personal motivation and initiative.

2. *Creating problem situations* . In the pedagogical process, it is necessary to encourage the teacher to adopt a creative approach through problem situations. In the process of solving problems, teachers learn to develop new ideas and adapt existing knowledge to new conditions. This method is one of the main tools for developing creative thinking and an innovative approach.

3. *Use of the project approach* . The role of the project approach in the formation of creative abilities is great. Providing teachers with the opportunity to develop and implement various projects within the framework of their professional activities encourages them to try new pedagogical technologies. This develops teachers' skills in the creative approach and the implementation of new ideas.

4. *Use of interactive methods* . Interactive teaching methods are an effective means of shaping the creative abilities of teachers. Through these methods, teachers enter into dialogue, exchange experiences and actively participate in creative activities. For example, brainstorming, role-playing games, debates and discussions

create favorable opportunities for the development of teachers' creativity.

5. *Integration of experience and practice* . In the formation of creative abilities of teachers, it is necessary to combine theoretical knowledge and practical experience. Through pedagogical situations, trainings and laboratory exercises, they should be taught to apply theoretical knowledge in real conditions. This will help develop creativity and innovative thinking skills based on experience.





## 2.1 . Model for the formation of creative competence of future teachers

6. *Encouraging motivation* . To develop creativity, it is important to constantly motivate teachers. A system of incentives should be developed to encourage them to use new pedagogical technologies and methods, to implement innovative ideas. This motivation will serve to increase creative activity.

7. Use of *information and digital technologies* . Digital technologies are considered one of the important factors in the development of creative abilities. It is necessary to create opportunities for teachers to master various learning platforms, multimedia tools and innovative technologies, and to train them to work with modern technologies.

8. *Evaluation and analysis of creativity* . The process of evaluation and analysis is important in developing the creative abilities of teachers. It identifies the achievements and shortcomings of teachers and guides them in the development of their professional activities.

The formation of creative abilities in teachers is an important factor in the modernization and improvement of the quality of the educational process. The development of creative abilities of teachers is achieved through the use of individualized education, a problem-based approach, interactive methods and modern technologies. The organization of the educational process on the basis of these principles serves to establish pedagogical activity based on creativity.

The formation of students' creative abilities is one of the important tasks of the pedagogical process, and this process contributes to the professional and personal development of students. To effectively organize this process, the following The main tasks are defined:

1. *Creating a creative environment*

Creating a favorable environment that encourages creativity in the learning process;

Creating opportunities for students to freely express their thoughts and try out new ideas.

2. *Taking into account personal needs and abilities*

The creative abilities inherent in every student identify and apply a targeted approach to their development;

To organize an individual approach to students, taking into account their interests.

### *3. Applying problem-solving tasks and assignments*

Developing challenging tasks and assignments that encourage students to think creatively;

Creating new ideas and implementing them Assigning tasks for practical application.

### *4. Use of interactive teaching methods*

Use interactive methods such as brainstorming, role-playing, projects, debates, and discussions;

Encouraging students' creativity through group work and collaborative learning.

### *5. Combining theoretical and practical knowledge*

Students' theoretical knowledge connection with practical activities;

Organize training sessions that help you apply your knowledge in practice.

### *6. Encourage an innovative approach*

Involving students in the mastery of modern technologies;

Technological tools and developing creative skills through teaching the use of information systems.

### *7. Increase motivation*

Establish an incentive system to encourage students to generate new ideas;

Evaluate the results of their creative approaches and recognize their achievements.

### *8. Diagnostics of creative activity*

Developing methods for assessing students' creative abilities;

Regularly monitor progress and provide guidance based on results.

### *9. Organization of project activities*

Development of creative projects by students and creating conditions for implementation;

Teaching students to think independently and work in teams through projects.

### *10. Conducting experiments and analyzing*

Conducting experiments and research to develop students' creative abilities;

Applying new pedagogical approaches through practical activities and evaluating their effectiveness.

The formation of students' creative abilities is considered one of the urgent issues of the modern education system. The role of modern technologies in this process is invaluable, they serve as an effective tool for developing creative thinking and shaping innovative activity. The content of the process of using modern technologies in the development of students' creative abilities is presented below:

1. *Integrate digital technologies* . Modern digital technologies, such as multimedia, virtual reality (VR ) , artificial intelligence, and interactive learning platforms, expand the creative possibilities of students. These technologies can increase the visibility of the learning process, facilitate the understanding of complex topics, and stimulate creativity.

2. *Create an interactive learning environment* . Interactive technologies, such as smart boards, mobile applications, and online platforms, encourage students to learn independently and develop their critical and creative thinking skills. Students actively participate in the learning process and develop new ideas by applying their knowledge in practice.

3. *Project-based educational technologies* . Project-based educational technologies are an effective method for developing students' creative abilities, shaping their research, problem-solving, and innovative approaches. Students learn to find creative solutions through independent or group projects.

4. *Gamification, i.e. the use of game elements* . Game technologies and gamification create an opportunity to increase interest in the educational process and encourage students to think creatively. For example, challenging game scenarios, gamified tasks, and online tests help stimulate creative abilities.

5. *Promote collaboration through online tools* . Using online tools like *Google Docs, Trello, or Slack*, students learn to work together, share ideas, and complete creative projects. This not only develops creativity, but also teamwork skills.

6. *Using modern technologies in problem situations* . In problem-based learning approaches, students' independent research and creative approaches are encouraged through the use of modern technologies. For example, guiding students to solve certain problems with the help of modern technologies will be an innovative experience for them.

7. *Use technologies to assess and analyze creative thinking* . To assess the creative abilities of students, it is necessary to use modern diagnostic tools. For example, special programs for analyzing creative projects, artificial intelligence Based on this, assessment systems and online platforms increase the efficiency of the process.

Modern technologies are today considered an effective tool for improving the educational process and developing the creativity of students. The following tools are used to shape the creative abilities of students: separately It is important:

1. **Multimedia technologies.** Video, Using animation, audio, and interactive materials can make it easier to explain complex topics and encourage students to be creative. For example, educational videos make the learning process more interesting for students and encourage creativity.

2. **Virtual Reality ( VR) – *Virtual Reality*** technologies provide students with experiences close to real environments. For example, visiting virtual museums, 3D modeling, and the ability to recreate experiences can expand students' creative imaginations.

3. **Interactive learning platforms.** Platforms like *Coursera, Edmodo, and Google Classroom* allow students to work independently, complete creative tasks, and collaborate. Through these tools, students learn to discover and apply new knowledge in practice.

4. **Digital tools for project work.** Tools like *Trello, Miro, or Canva* allow students to work on projects, visualize ideas, and organize creative work. These tools help students create innovative projects.

5. **Game elements.** Incorporating game elements into the learning process, such as puzzle games or quizzes, can engage students and encourage creative thinking. Tools like *Kahoot and Quizizz* are effective in this regard.

6. Cloud technologies. Cloud services, such as *Google Drive* or *OneDrive* , allow students to collaborate, store data, and access it from anywhere. These tools help students work on collaborative creative projects.

7. Artificial Intelligence Technologies. Tools based on artificial intelligence, such as *ChatGPT*, *Jasper*, or *Grammarly* , support students in creative writing, text analysis, and the development of new ideas. With the help of these technologies, students will have the opportunity to improve their work.

8. Coding and programming tools. Programming tools, such as *Python* or *Scratch* , for students It allows students to develop algorithmic and creative thinking. Through these technologies, students develop new applications, programs, and systems.

9. Interactive visualization tools. Tools for creating diagrams and maps, such as *MindMeister* or *Lucidchart* , encourage students to organize their thoughts and develop creative approaches.

The effectiveness of the process of forming creative competence of future teachers based on the model developed within the framework of the research implementation criteria, indicators, and diagnostic tools The level of effectiveness of the formation of students' creative abilities The formation of students' creative abilities is a complex and gradual process, which includes various levels. These levels are classified as follows (Table 2.2.1) :

## 2. Table 2.1

<b>1.</b> <i>Reproductive level</i>	At this level, students carry out activities based on the repetition and reworking of acquired knowledge. Students rely on available materials and instructions, and the creative approach is less expressed. Characteristics of this level: Assimilation and application of existing knowledge; Full implementation of received instructions; Finding solutions based on templates.
<b>2.</b> <i>Search and analytical level</i>	Students' abilities are advanced to the next level, and they begin to think independently and analyze problems in their activities. At this level, the first signs of the creative process become apparent: Analysis of problem situations; Adapting existing knowledge to new conditions; Consider several solutions and choose the most suitable option from among them.
<b>3.</b> <i>Creative level</i>	This level reflects the highest stage of formation of the student's creative abilities. Students develop new ideas based on their knowledge and experience and independently carry out activities based on a creative approach: Developing unique and innovative solutions; Solving problems in your own unique way; Implementing new pedagogical approaches.
<b>4.</b> <i>Innovation level</i>	This level reflects the highest level of creativity. Students independently create new methods and technologies, and apply them in practice. The following characteristics are observed at this level: Creation and testing of new pedagogical technologies; Lead collective activities and encourage others to take a creative approach; Implementing original ideas and projects.

Levels of formation of students' creative abilities is divided into reproductive, exploratory-analytical, creative and innovative stages. Each level has its own requires a unique pedagogical approach.

Encouraging each student to be creative in the educational process and creating conditions for further developing their abilities is one of the important tasks of the pedagogical process. In addition, scientific and theoretical knowledge The following methods have proven to be effective in obtaining information: telling, telling a story, explaining, animated presentations, role-playing games, multimedia tools, preparation of special handouts for students, information collection, discussions, work on sources, work on questions and assignments. The use of interactive methods such as "*Cluster*", "*Brainstorm*", "*Museums*", "*Role-Poly*", "*Perception Map*", "*Chain*", "*Boomerang*", *group games, and group work* can be effective in the educational process.

The formation of students' creative abilities is an integral part of the pedagogical process. The main tasks are to increase the efficiency of education serves. Through the use of interactive methods, problem tasks and project activities, it is possible to achieve the creative development of students. These tasks A person-centered approach and the use of modern technologies in implementation separately is important. The use of interactive teaching methods and technologies in the formation of students' creative abilities plays an important role in the educational process. In order to further enhance didactic opportunities, interactive teaching methods stimulate students' activity, develop their critical and creative thinking skills, and improve their ability to work in collaboration. The use of interactive methods helps to strengthen relationships between students and make the learning process interesting and effective.

First of all, the problem-based learning method is considered effective in developing creative abilities. In this method, students are presented with A specific problem is posed and its solution requires independent thinking and creative approaches. Through the problem-based learning method, students learn to express their personal approaches and innovative ideas. This method also develops logical and critical thinking in students, and teaches them to be creative in solving complex problems.

The second effective method is *the project-based learning method* . With the help of projects, students have the opportunity to apply their knowledge and skills in practice. In the project-based

learning method, students have the opportunity to try themselves as independent researchers and implement creative ideas within the framework of a project. This method is an important tool in developing creative abilities, teaching students to seek out new knowledge and independently manage their own projects.

*The dialogical teaching method* also helps in the formation of creative abilities. is important. In this method, there is a constant interaction between the teacher and the students. Connections are established, various topics are discussed, and students learn to express their thoughts openly. Dialogic education helps develop students' communication skills and form independent and creative thinking skills.

In addition, research results show that interactive educational methods and technologies It creates ample opportunities for developing creative abilities, actively involving students in the learning process, and encouraging them to think independently and creatively. These methods play an important role in increasing the activity and creative potential of students, as well as in increasing the efficiency of the educational process.

Therefore, the use of modern technologies in the formation of students' creative abilities serves to increase the efficiency of the educational process. This process, along with making the learning process interactive, innovative and interesting, also helps students develop creative thinking and helps to develop practical skills. Through the correct and effective use of modern technologies, students' creative approaches to the learning process are formed and developed. Modern technologies create ample opportunities for students to be creative in the educational process. Together with making education interactive and innovative, they are considered an important tool in developing students' creative abilities.

The effective use of these tools not only increases the effectiveness of the educational process, but also develops students' creative thinking and independent work skills.

## 6. Effective educational technologies in developing students' creative activity

The development of creative activity in the educational process is one of the most important issues of pedagogical theory and practice today. In order to reveal the creative potential of the student, it is necessary to move the educational process away from the traditional form of lectures and the assimilation of ready-made knowledge and base it on new pedagogical technologies. The main task of effective educational technologies is to actively involve the student in the process of independent research, analysis, creation of new ideas, and problem solving. This, in turn, serves to develop the student's personal initiative, creative thinking, and innovative potential.

According to current pedagogical science, additional education helps to enrich children's life experiences in a way that is in line with their abilities. This allows children to fully express themselves and develop themselves. leads to the development of creative abilities, which is an important component of the full development of the child. General creative abilities are the ability of a person to successfully carry out creative activities are individual characteristics and qualities that are important in the implementation. According to the pedagogical encyclopedia, the method of education is a system of interconnected and consistent activities between the teacher and the student, aimed at mastering the content of education. Our first President I.A. Karimov said: “To be an educator and a mentor, to be able to develop the intellect of others, to share the light of enlightenment with them and to form them as true citizens, the educator himself must meet high requirements .” [194] If a teacher constantly works on himself and keeps up with the times, he will be able to encourage students to learn. The future teacher should not forget that modern students are different. Today's youth live in the world of the Internet and lack the culture of the older generation. Today, a modern teacher who wants to be useful and get satisfaction from the results of his work must have the following qualities:

*Respect for children.*

*Tolerance.*

*Understanding the meaning of one's service.*

*Knowing the boundaries.*

*Fully understand their duties.*

*The ability to self-criticize.*

According to President Sh. Mirziyoyev, if teaching methods in schools do not change, the quality, content and environment of education will remain unchanged. Every teacher must have pedagogical skills to work successfully. The main principle of pedagogical skills is to achieve great results with little effort. In this, creativity should be a constant companion of the teacher. Pedagogical skills develop only in a capable and talented person who is interested in pedagogical activity. Pedagogical activity is inherently creative, and the teacher forms the personality of the student, makes independent decisions in unexpected situations, solves pedagogical problems and manages the educational process. All these processes are inextricably linked with the essence of creativity and the goals of activity. Only a teacher who has pedagogical skills can achieve great success in his professional activity. The famous Russian educator A.S. Makarenko highly valued the teaching profession and described it as follows: “ *The educator must know how to organize, to walk, to joke, to be cheerful or serious. He must behave in such a way that his every movement, demeanor, and even his manner of dressing serve the upbringing of children .* ” [195]

Creativity is an important component of the educational process. Through creative activity, the student develops a positive attitude towards learning, as a result of which the educational process becomes interesting and effective. With the help of creativity, the student turns passive knowledge into a practical product and becomes more actively involved. Creative abilities developed from a young age help people to solve life's problems more easily, and also create the basis for effective and independent activity when they grow up. This is one of the important goals of education: to prepare students for future life and educate them as useful individuals for society. Therefore, today much attention is paid to the development of students' creative abilities, and the importance of the methods and tools used in this process is highly appreciated. The first signs of active learning methods were noticeable in the 14th-16th centuries. The great humanist scholars F. Rabelais, M. Montaigne, and F. Bacon

advocated independent acquisition of knowledge not on the basis of ready-made information, but through practical experience and discussions. These methods were later improved by Y. A. Comenius, I. G. Pestalozzi, F. A. Disterverg, D. Dewey, K. D. Shinsky, and P. F. Kayarov, and the idea of independent learning was scientifically substantiated.[54]

Studies show that oral teaching methods (lectures, stories, explanations) help to remember only 5% of the information. Reading retains 10% of the information, while the use of visual aids and video materials allows you to master 20% of the information. One of the most effective methods is business games, in which students retain 75% of the information. Educational and practical exercises are considered the most effective, through which 90% of the information is mastered. P. Torrens defines creativity as a natural process associated with the need of a person to overcome tension in incomplete or ambiguous situations. He identifies three main factors of creativity: creative skills, creative motivation and individual characteristics of the person. A creative teacher can have a significant positive impact on the future of society by discovering the abilities of each student and directing them in the right direction. Raising students as independent decision-makers, creative individuals is one of the main goals of today's education.

Our state has also set the following goals for the development of the intellectual potential of young people: to develop and protect the intellectual potential of young people; to preserve and expand intellectual resources through the modernization of the education system in cooperation with science and public administration; to form regulatory mechanisms for the development of intellectual potential; as well as to create psychological, pedagogical and organizational and methodological foundations that serve to develop the intellectual potential of young people. To achieve these goals, the following tasks have been set: to identify talented young people and create psychological, pedagogical and organizational and methodological foundations aimed at them, to study the characteristics of the educational process to increase intellectual potential, to develop independent activities of young people and develop methods for forming their creative abilities. Tasks have also been set to study the

intellectual potential of young people theoretically and practically and to introduce innovative proposals for educational management into the education system.

Today, the work being carried out to develop the intellectual potential of young people is not up to the required level. Taking into account the requirements of society and the state, it is necessary to apply modern psychological and pedagogical technologies to the educational process in order to successfully carry out work on developing the intellectual potential of students. This process, which requires an individual approach to each student, is important in increasing the intellectual potential of young people. In the process of education aimed at students, the need to create a creative environment for developing their intellectual abilities is urgent. Because in the process of intellectual creative work, students have the possibility of achieving success or failure. Also, due to the limitations of their worldview and imagination, students may not be able to associate their thoughts with positive or negative situations.

Students who have average performance in the educational process can later achieve high results or succeed in other areas. Therefore, it is important to correctly understand the differences between abilities and knowledge, skills and qualifications and to use them effectively in the educational process. Abilities are the unrealized potential of a person, which is reflected in the educational process. The words of Alisher Navoi “ *It is a pity to educate an incompetent person, but a sin not to educate a capable person* ” show how important it is to develop the abilities of young people and create opportunities for them today. At the same time, the theoretical and methodological knowledge, practical skills of the teacher, as well as the ability to establish effective communication with students, play a key role in the effectiveness of pedagogical activity. [137] We analyze the sources of formation of intellectual creative abilities of young people as follows:

<b>Sources of formation of intellectual creative abilities of young people</b>	
<b>Science</b>	Developing creativity
<b>Literature</b>	Developing culture

<b>Education</b>	Development of education
<b>Religion</b>	Developing faith
<b>Spiritual values</b>	Developing a well-rounded personality

A goal-oriented approach is important in the educational process. It is impossible to develop the intellectual and creative abilities of young people creatively without forming them. The essence and tasks of the educational process aimed at developing the intellectual capabilities of students are planned in advance by the educator and the methods of their gradual implementation are determined: Identifying aspects that serve to form the intellectual abilities of students and planning their development. Developing methods that serve to develop these abilities or finding sources that contribute to increasing intellectual capabilities. Planning where and how to use the theoretical and practical resources necessary to achieve the set goal. Activities carried out in this way on the basis of a plan not only develop the intellectual abilities of young people, but also increase the level of intellectual and physical activity of society and people.

So, creativity is a new and unique, social phenomenon of personality. Creativity is an activity that creates a situation that has meaning. Creativity is the result of the activity of the imagination, aimed at recreating and transforming past experience, by introducing new characters, continuing the development of events, and adding other innovations. is implemented. The student's creative abilities, independence, initiative, self-realization and self-confidence are developed. The development of the desire to identify is not only at school, but also in additional educational institutions. are implemented because they have extensive experience in our country and serve to meet the child's ever-changing individual, socio-cultural and educational needs. Additional education is a motivating tool for personality development and is implemented through various types of activities in the fields of knowledge and creativity.

**Figure 2.3.1.**

**Classification of abilities**

<b>Abilities</b>	
<b>General</b>	<b>Specific (specific)</b>

Individual personalization that ensures efficiency characteristics	A system of personal qualities that helps to achieve high results in the assimilation of knowledge and the implementation of various types of activities in any field of activity
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The development of students' abilities and creative potential can be implemented in an educational environment that meets certain conditions (Figure 2.3.2).

**Figure 2.3.2.**

**Requirements for the educational process that help develop students' creative abilities**

<b>Necessary conditions for developing students' creative abilities</b>	A free environment in an educational institution, the ability to choose the type of activity - for students, teaching methods - for teachers
	Trust and respect for students on the part of the teacher: giving students independence in their ongoing approach to learning.
	A high level of cognitive interest among students, the teacher's attention to learning motivation, game techniques, and subjective and creative problem-solving when considering various thematic blocks.
	Attention to the interests of each student, their inclinations, health, and multifaceted development (physical, emotional, aesthetic, intellectual).
	A general cultural atmosphere in the educational institution, a high level of spiritual development of teachers and students

To implement these conditions, the pedagogical structure of the scientific and educational center should be formed, paying great attention not only to the mastery of a certain set of skills by students, but also to the development of their creative abilities. To achieve this goal, teachers use various forms and methods of education. Activities aimed at developing non-standard thinking methods are organized for each class (Table 2.3.3).

**2.3.3.- table**

## Features of activities aimed at developing students' creative abilities

No.	Event name	Goal	Forms of organizing student activities
1	Scientific article and essay competition	To involve students in scientific research and help them effectively acquire knowledge in the discipline of pedagogy	group work; individual consultations for students; participation in the conference
2	"Young Talents" Discussion Club	To develop students' communication skills to conduct debates, develop logical thinking, and expand students' knowledge.	round table; brainstorming; conversation; intellectual tournament
3	Excursion	To stimulate students' cognitive activity, as well as to develop analytical skills	organizing meetings with city organizations and schools
4	Profile training changes	Strengthening students' health, deepening knowledge and skills, as well as developing creative abilities	business game; intellectual tournament; psychological preparation; watching movies and TV shows
5	Thematic week	Educating students in the social and cultural spheres of life	quiz; business game; presentation; interview and others
6	Creative workshops	Stimulating students' creative thinking	group work; defense of creative projects [74]

Most of these activities are taught in general pedagogy. within the framework of traditional lessons These lessons are organized in a

variety of ways. stands out and includes elements such as presentation, practical work, economic issues and solving situations. Scientists emphasize that all that falls under the concept of creative abilities It is impossible to develop these qualities all at once. This is a long and purposeful process, and creative exercises do not give the expected results. Knowledge-based tasks should be systematic and serve to develop all aspects of students' intellectual and creative activity, as well as to ensure the transition from reproductive and formal-logical actions to creative thinking.

It should also be remembered that creative abilities are considered not only as a form of understanding that does not depend on knowledge, skills, and qualifications, but also on their rapid assimilation, consolidation, and explains its practical application. For this reason, the level of development of psychological mechanisms - memory, attention, imagination and other qualities - is important for the development of creative abilities. It is these qualities that form the basis for the development of effective thinking and creative abilities.

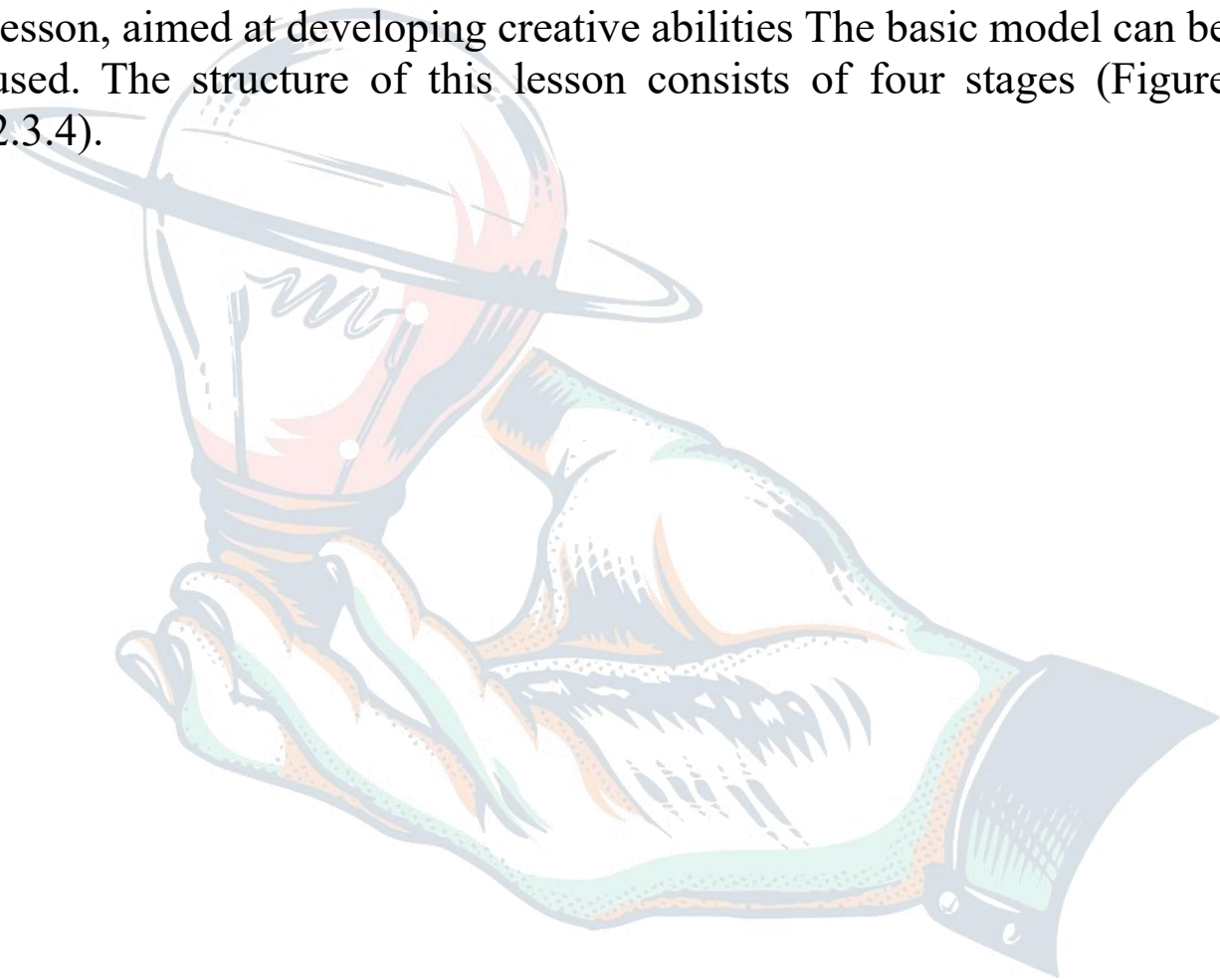
Reproductive tasks in exercises to develop creative abilities, mainly used to quickly involve children in activity (a kind of "warming up") and develop the mental mechanisms that underlie creative abilities. Despite the shortcomings of reproductive tasks, their effectiveness can be increased in various ways: in some cases, by limiting the time for completing the task in order to develop reaction and thinking speed; in other cases, by integrating different levels of knowledge in one question. [36-11/17] For example:

*Time-limited tasks (physical and mental preparation)* . These exercises are carried out at a high pace and 2-3 seconds are given for the answer. The questions are constantly changing from one area to another. Such activities increase the ability of students to concentrate and learn to quickly switch from one type of activity to another. These skills are part of the creative nature and can be used both in economics lessons and in special courses.

*Delayed response tasks* . The essence of these exercises is that the task conditions direct students to a familiar, familiar solution, but this solution turns out to be incorrect. In the first lessons, many students feel psychological discomfort and ask for a re-explanation of the task. Only through practice do they learn to adapt to such tasks

and focus attention and memory in the right direction. As a result, resilience to various challenges increases significantly and the ability to perform complex tasks develops.

*Interactive tasks* . These exercises capture students' interests in a short period of time. allows you to identify and determine the directions of their development. When solving creative and non-standard problems, students enjoy the process of creative thinking, intuitively feel the beauty and greatness of the subjects. The use of various tasks in accordance with the characteristics and goals of the lesson, aimed at developing creative abilities The basic model can be used. The structure of this lesson consists of four stages (Figure 2.3.4).



### A lesson model aimed at developing students' creative abilities

- 1. To warm up ; to enter (a competition)** Reproductive functions predominate.
- 2. Memory development** At this stage, work should be done to develop and improve memorization and retention techniques.
- 3. Various degrees partial search problems to decide** Creative tasks related to one or another educational activity, requiring more or less complete independence and aimed at exploratory activity, unconventional, non-traditional approaches and creativity
- 4. Creative problem solving** Integrative Tasks with a high level of complexity are characterized by the fact that the same task requires the application of different knowledge at the same time.

Thus, a comprehensive system has been formed at the scientific and educational center, aimed at talented young people, through the use of various educational technologies. This not only forms the economic thinking of young people based on theoretical knowledge and practical skills, but also serves to develop their creative abilities, create opportunities for self-expression and self-development. As a result of effective management of the educational process, students actively participate in olympiads, competitions, and conferences.

The formation of creative abilities is considered one of the priority tasks in the modern education system. The development of creative skills and abilities in students ensures their success not only in the educational process, but also in life. In this regard, the choice of effective methods and approaches is very important.

#### *Theoretical foundations of the development of creative abilities*

. Various approaches to the formation of creative abilities in psychological and pedagogical research is explained on the basis of. The importance of motivation, a positive emotional environment, and satisfaction from the activity process is emphasized for the development of creative abilities. In order to develop creative

abilities, the most First of all, it is necessary to have an individual approach to students and take into account their personal characteristics. Natural abilities are the basis of creative abilities. are the basis, and special pedagogical conditions are required for their development. We can include the following effective methods for shaping creative abilities:

*Use of interactive methods* . Interactive methods are aimed at activating students' thinking processes and directing them to independent problem solving. For example:

*Brainstorming* . Through this method, students freely generate different ideas and then analyze them.

*Case study (situational analysis)* . Students are required to take a creative approach to solving various life situations.

*Project method* . The project method encourages students to engage in independent research and creative work. In the process of working on a project, students search for new ideas, test their knowledge and skills in practice. In this way, teamwork skills are also developed.

*Methods for developing critical thinking*. The formation of critical thinking is an important component of creative abilities. In this regard, it is important to teach students to analyze points of view from different points of view and to seek alternative approaches to them.

*Imagination and creative games* . Imagination Exercises based on the concept of the subject play an important role in developing creativity. Students are encouraged to use their imagination They increase their creative abilities by creating well-founded scenarios and writing descriptive stories.

*Use of modern technologies* . In the process of developing digital technologies, the use of modern technologies is considered an important tool in the development of creative abilities. Multimedia, virtual laboratories, interactive platforms and online projects encourage students to engage in creative research.

***Difficulties encountered in the development of creative abilities in the pedagogical process*** . A number of difficulties are also encountered in the process of developing creative abilities:

*Low motivation among students;*

*Low use of creative approaches by teachers;*  
*Lack of resources and modern technologies .*

To overcome these difficulties, teachers need to improve their pedagogical skills, develop an individual approach in working with students, and expand the use of modern educational technologies.

At this point, we will focus on the analysis and discussion process of applying effective technologies to the pedagogical process in shaping students' creative abilities.

Today, the education system is focused on developing students' creative abilities. special attention is paid to it. Because creative thinking and creativity are considered one of the important factors for achieving success in the modern world. In order to effectively integrate this process into pedagogical activity, it is necessary to use innovative technologies. Below are considered the possibilities of using these technologies and analytical approaches to them.

1. *Interactive educational technologies* . Interactive methods, such as exercises such as " *Fish Skeleton* " or " *Clustering* ", develop students' abilities to think independently and put forward new ideas. Such technologies activate students' thinking abilities, form in them the ability to find creative solutions to problem situations. In an interactive environment, students have the opportunity to freely express their ideas and test them in practice.

2. *Project Project-based learning* . Project technology activates the independent activity of students. In the process of this approach, students set a clear goal and achieve it They use a creative approach to implement their projects. For example, students can develop projects on environmental, artistic, or social issues. not only theoretical knowledge through implementation are tested in practice, but rather the skills of developing creative solutions are developed.

3. *Digital technologies* . Digital learning tools, including interactive programs and visualization platforms, create vast opportunities for developing creativity. For example, the use of technologies such as graphic design or video editing enriches students' imagination and helps them express their ideas in innovative ways. Also, working in groups through online platforms encourages students to think creatively as a team.

4. *Game technologies* . Gamification helps to make the learning process interesting and effective. Game-like tasks motivate students, ensure their active participation, and develop creative thinking. For example, educational quests, role-playing games, or games aimed at solving problem situations involve students in the creative process.

5. *Problem-based learning technologies* . Problem-based learning encourages students to explore and find new solutions. In this approach, students think independently during the lesson to solve real-life problems. This process develops their analytical thinking and creative approach.

6. *Analytical approach* . When creative development technologies are adapted to the educational process, they have a significant impact on the personal development of students. The use of these technologies not only encourages students to actively participate in the educational process, but also forms in them initiative, responsibility and teamwork skills.

Therefore, in our opinion, the formation of students' creative abilities requires the use of innovative technologies in the pedagogical process. Interactive, project Methods such as interactive learning, digital and gaming technologies play an important role in developing creative thinking. These approaches guide students to develop and apply their abilities in practice, which will help them achieve future personal and professional success.

Effective results can be achieved only when the issue of developing students' creative abilities in the process of pedagogical education is solved on the basis of modern methods, technologies and an individual approach. The use of interactive methods, a design-oriented approach and information and communication technologies in the formation of creative potential in future teachers increases their personal activity, strengthens their initiative and desire to create innovations.

The orientation of the pedagogical process towards creative activity opens up new ways of acquiring knowledge for students: they independently solve problem situations, generate creative ideas, test their knowledge and skills in practical activities. Interactive methods also create great opportunities for the development of a culture of teamwork, free thinking, and communication. The didactic value of

educational technologies that serve to enhance creative abilities is that they combine theory and practice, stimulate independent research, innovative thinking and a creative approach in students. Such an approach not only increases the effectiveness of the educational process, but also creates the basis for training enterprising, creative and competitive educators for the future education system.



## **7. Directions for organizing pedagogical experimental work on the development of creative abilities in students**

The formation of creativity in the process of pedagogical education requires not only the development of theoretical foundations, but also the determination of their effectiveness by testing them in practice. Effective organization of mechanisms for the development of creative potential in future teachers plays an important role in preparing them for future professional activities.

The importance of studying the effectiveness of mechanisms for the formation of creativity is that they show the real results of the methods and technologies used in the educational process. This process is also confirmed by pedagogical experimental work. Such mechanisms serve to increase the activity of students, develop independent thinking, innovative ideas, and the skills of finding the right solution to problem situations.

The issue of forming creativity in the educational process is one of the most important priority areas of modern pedagogy. Because in the conditions of the 21st century, a teacher is required not only to impart ready-made knowledge, but also to develop students' thinking, teach them to think in new ways, engage in creative research and find innovative solutions in practical activities. Therefore, it is an urgent task to study the effectiveness of the mechanisms for forming creativity in the pedagogical education system on a scientific basis, test it in practice and evaluate it.

The mechanisms for the formation of creativity are a set of methods, techniques, technologies and tools used in the educational process. Their effectiveness directly depends on how the educational activity is organized, the level of mastery and activity of students, as well as the individual approach and professional skills of the teacher.

The mechanisms that ensure effectiveness in pedagogical education are determined by several key factors:

1. Methodological factors include the use of interactive methods, project-based learning, problem-based learning, and modern pedagogical technologies.

2. Psychological factors take into account the interests, needs, individual abilities, and personal characteristics of students.

3. Didactic factors are the orientation of educational content towards the development of creativity, the integration of theory and practice, and the creation of conditions for independent research.

4. Practical factors include the organization of creative assignments, project work, research activities, and experimental training.

Pedagogical experiments are important for determining the effectiveness of creativity-building mechanisms. Through experimental work, the results of the methods used in the educational process are monitored and their role in increasing educational effectiveness is assessed. This process is carried out in two stages:

- at the diagnostic stage, students' creative potential, interests, and independent thinking skills are determined;
- at the experimental stage, new methods, technologies, and approaches are introduced and their practical effectiveness is analyzed.

Experimental studies show that mechanisms aimed at developing creativity in the educational process give higher results than traditional forms of teaching. In particular, students are more active in independently completing creative tasks, put forward new ideas and proposals, and strive to creatively solve problems encountered in professional activities.

Another important factor that increases efficiency is an individual approach. Taking into account the personal abilities of each student and choosing appropriate methods for him serves to further develop creativity. As a result, students acquire not only theoretical knowledge in their professional training, but also the skills of creative thinking and innovation.

Based on the above, it can be said that the effectiveness of mechanisms for the formation of creativity in pedagogical education directly depends on the proper organization of the educational process, the appropriate use of modern methods and technologies, as well as the professional skills of the teacher and an individual approach to students. Such an approach creates the basis for the formation of future teachers as creative, enterprising and competitive specialists.

Pedagogical experiments are important in determining the effectiveness of developing students' creative abilities. Through such experiments, theoretically based ideas are applied in practice, their effectiveness and efficiency are determined.

In particular, in the process of conducting research, using interactive teaching methods and technologies, as well as interactive training forms, small training sessions, problem lectures, seminars, practical and laboratory exercises were organized for undergraduate students on various topics in such subjects as "General Pedagogy", "Pedagogical Technologies", "Pedagogical Skills", "Methodology of Teaching Specialized Subjects ". For example, during a non-traditional seminar held with 3rd-year students of the Faculty of Primary Education on the subjects of "Pedagogical Skills" and "Pedagogical Technologies", they conducted a comparative analysis of the specific aspects of "Traditional and Interactive Teaching" in the formation of individual creativity based on the " *T-scheme* " method (see Table 3.1.1). A comparative analysis of the opinions expressed using the "T-chart" method is expressed in the following table:

**Table 3.1.1.**

**Interests in the organization of the educational process**

The process of naval training	Interactive learning process
Authoritarian rule	Democratic relations, person-centered approach
Formation of knowledge, skills and competencies	Independence , free thinking , determination of cognitive tendencies
Information accuracy and specificity	Informal discussions
Too many lectures, too few seminars	A large number of workshops, exercises aimed at independent learning, a lack of lectures
Compulsory attendance, strict discipline	Free access
Execution	Initiative
Individual work	Community collaboration
Teacher's control over the final result	Constant self-control

Lack of creative work

Abundance of creative work

The interactive learning process is an important tool for shaping individual creativity.

So, that's it. Confirmation necessary, yes training theoretical knowledge but for a higher level to be based on opportunity given education picture. It was calculated. It students understood a good picture. Knowledgeable to see possibility created by. Training only a rational logical think and creativity skills development, and also, the child's teacher adjective self supervision to do and in other countries some kind of and he shared his success. Training, beginning, more effective, then a rational knowledge and skills and a job usually visible to do, as well as to gain experience can. In various fields, a job usually a fact "fall and study, etc experiment abilities evaluation and compare possibility. Understanding the adjective. It's a good thing.

During the research, training sessions were supplemented with pedagogical issues, situational tasks, and role-playing games. Attention was paid to the organization of the project on the basis of. This not only helped to develop students' creativity, but also to form their skills for targeted application in the educational process. A special "case study" was developed based on pedagogically relevant tasks that help students develop their creative abilities, taking into account their personal development characteristics. Through these cases, students will have the opportunity to develop their creative abilities in different situations. During the research, the following cases were brought to the attention of the students:

Students' creativity abilities to form a habit and their habits ("Pedagogical matter" for example, in the case of

Case 1: "Not and a matter is complicated." process "

Status description :

Pedagogical skill described at a laboratory he is a bottom top hat was given : " My child 's interest in reading has decreased . k e t g a n o t a - o n a g a p e d a g o g i k m a t t e r b e i n g . " T a l a b a l a r d a n The answer is simple . issues bil a n c h e k l a m a s d a n , n o s t a n d a r t a p p r o a c h p r o p o s a l w h a t t o d o h e a s k e d .

Analysis :

This holds a laboratory creative think and life for experiments based on in the past profit . B member Interesting learning for students and children all materials repair , other services society It is necessary to increase activity . recommendations This top hat their critical think and creative yes top job skills sh a k l l a n t i r d i . N a t i j a d a , t a l a b a l a r p e d a g o g i k s . a . s . a . l . a a p p r o a c h w i t h s o l u t i o n T h e y l e a r n t o d o i t .

Case 2 : " Learning through role playing "

Description of the situation :

During the lesson , students were divided into small groups and played the roles of parent , teacher , and student . For example , one group organized a role - play to solve the problem of " a student who has difficulty communicating with classmates . "

Analysis :

In this case , the creativity of the students , understanding their role and finding a solution to the problem , is developing . Students have the ability to analyze the emotional state of students and solve problems . This idea helped to develop the scientific knowledge , but also the general knowledge .

Case 3 : " Interactive activities "

Description of the situation :

The pedagogic teacher asked the students : " Do you encourage students to think creatively ? " Students presented their innovative solutions to answer this question .

Analysis :

This has become an important method of developing side creativity . Students presented creative methods , for example , clustering , brainstorming , and project - based teaching methods . This course gave students the opportunity to develop and use creative

methods . At the same time , they learn to work on their own plans to develop the creative abilities of future children .

Case 4 : " Creative project development "

Description of the situation :

The students were asked to prepare a project for the " Character of a Creative Teacher " course . Each group had to highlight the creative methods of the teacher , the ways of establishing a relationship with the students , and the innovations of the teacher .

Analysis :

This project has become a useful tool for developing the creative activity of students . The students expressed their pedagogical ideas and innovative ideas in the project . This has developed the creative thinking abilities of the students , but also increased their social work skills .

General summary :

Case studies : Role - playing games , interactive activities and projects play an important role in shaping students ' creative abilities .

Description : By using various teaching methods , students will acquire general knowledge , and will have the opportunity to develop their creative abilities . At the same time , he helped them to become creative teachers in the future .

Designing training activities in the directions mentioned above gave the expected results in the development of creativity of students . The results of research and the dynamics of changes confirm this opinion .

Modern pedagogical processes require expanding the possibilities of individualizing education and involving students in an active creative process. Interactive online platforms are important in achieving this goal . is gaining importance . In particular, in the field of pedagogical skills, these platforms help develop the professional and creative abilities of students.

1. Interactive online learning platforms advantages

Individualization of student activities: Allows for an individual approach to each student and the identification of their creative abilities.

Flexible learning: Platforms allow students to manage their time and learn at their own pace.

Interactive communication: Creates lively dialogue between students and teachers, which helps to solve problems together and develop creative thinking.

## 2. Examples

Below are effective platforms for shaping creativity in the subject of pedagogical skills:

a) Google Classroom: Provides easy access to course materials; Submits and grades written assignments, tests, and creative projects Encourages students to actively participate in group work and discussions.

b) Kahoot! and Quizizz: Encourages creative thinking by providing students with fun, interactive quizzes and tests; Develops time management skills in problem-solving and increases knowledge in a playful way.

c) Miro and Padlet: Serves as a virtual whiteboard for collaboration; helps plan projects and present creative ideas in a visual way.

**Table 3.1.2.**

<b>Coursera</b> <b>Website:</b> <b><u><a href="https://www.coursera.org">https://www.coursera.org</a></u></b>	<b>Description: The Coursera platform includes courses offered by leading universities around the world. This platform offers many courses aimed at developing creative abilities in pedagogical processes.</b>
<b>EdX</b> <b>Website:</b> <b><u><a href="https://www.edx.org">https://www.edx.org</a></u></b>	Description: The EdX platform offers programs aimed at developing creativity through free and paid courses. In particular, there are courses aimed at learning innovative methods for teachers.
<b>TED-Ed</b> <b>Website:</b> <b><u><a href="https://ed.ted.com">https://ed.ted.com</a></u></b>	Description: The TED-Ed platform offers short video lessons that encourage creative approaches in pedagogical processes. This platform helps to organize lessons interactively and creatively.

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**Khanacademy****Website:****<https://www.khanacademy.org>**

Description: Khanacademy offers interactive lessons and resources that encourage creative thinking. This platform helps students develop their skills in various fields of study.

**Skillshare****Website:****<https://www.skillshare.com>**

Description: Skillshare offers a variety of courses in creative subjects, design, and pedagogy. The platform also has a wealth of materials for teachers on how to organize creative lessons.

**FutureLearn****Website:****<https://www.futurelearn.com>**

Description: FutureLearn offers a variety of courses aimed at developing the creativity and pedagogical skills of teachers. This platform teaches an innovative approach to pedagogical processes.

**CreativeLive****Website:****<https://www.creativelive.com>**

Description: CreativeLive offers specialized courses in creativity and design. The platform conducts specialized classes on developing creative skills.

**Google Arts & Culture****Website:****<https://artsandculture.google.com>**

Description: This platform offers a variety of tools that foster creativity in the arts and culture. Teachers can use this platform to create inspiring lessons for students.

**Teachers Pay Teachers****Website:****<https://www.teacherspayteachers.com>**

Description: This platform sells creative lesson materials and resources created by educators. Teachers can get ideas here to make their lessons more creative.

**Prezi****Website:****<https://prezi.com>**

Description: Prezi is a convenient platform for creating presentations and organizing creative educational resources. This platform makes the pedagogical process interesting and effective.

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Project method: With the help of platforms, students develop their creativity by analyzing pedagogical situations and proposing solutions to them, either in groups or individually.

Problem-based learning: Guiding students towards independent and creative thinking through online discussion of questions related to problem situations.

Gamification (Role Playing): Incorporating game elements into the learning process to engage students in active participation.

Online learning platforms that can be used to develop students' creative abilities (Table 3.1.2):

With the help of these platforms, teachers can use modern methods and tools to effectively develop students' creative abilities. Developing creativity in students is a key to shaping the professional and pedagogical skills of future teachers. one of the main factors. Increasing the level of creativity of students and young people, first of all, their personal cognitive skills is based on. This includes the acquisition of knowledge and skills in the areas of creativity, initiative and research, as well as the desire for creative activity. Students of higher educational institutions of pedagogy are considered future teachers. They must not only master creative tasks, but also arouse interest in creativity, research and creativity in their students. For this reason, it is urgent for future teachers to analyze knowledge, understanding, and attitudes about creativity and develop methodological recommendations aimed at developing creative abilities.

From this point of view, the main goal of the experimental work carried out within the framework of the research is to study the practical situation, identify shortcomings in this area and their causes the same is true The main objective of the study is to develop the necessary scientific and methodological recommendations. According to the research objectives and conclusions, the current state of development of students' creative abilities in higher education institutions identification and interactive teaching methods and technologies having developed pedagogical conditions, forms and methods for the development of creative abilities, It is required to apply it in practice. Basically, the development of creative abilities in students in the interactive educational process practical aspects

Experimental and test work was carried out to determine. In this regard, a comprehensive methodology was used among the respondent students. The level of formation of creative abilities and the possibilities of the interactive educational system for developing these abilities were studied. During the research, observation, Methods such as questionnaires, interviews, self-assessment and analysis, evaluation of activity results, and pedagogical assignments were used.

As a result of studying the current state of development of creative abilities in students in the process of interactive teaching, it is appropriate to emphasize the following: Insufficient interactive environment and pedagogical conditions aimed at developing creative abilities of students in higher educational institutions; Theoretical and practical aspects of developing creative abilities in students practical issues, especially creativity, professional creativity, pedagogical creativity, knowledge in interactive learning environments, Insufficient formation of the information and skills system; Insufficient coverage of topics aimed at shaping creative activity in the content of teaching subjects in the field of pedagogy and psychology in higher educational institutions; Insufficient training of professors and teachers in higher educational institutions on the interactive teaching process and its organization There are cases where practical work experience is not at the required level.

The highlighted cases are aimed at developing effective forms, methods and tools for developing students' creative abilities in the interactive learning process, demonstrated the need to increase the efficiency of activities by implementing and disseminating the results obtained.

## **8. Experimental results and levels of effectiveness of the creative skills development process**

Pedagogical experimental work carried out in the process of forming creative abilities served to determine the effectiveness of the methods and technologies used in the educational process. At this stage, attention was paid to changes in students' creative activity, level of independent thinking, and professional competencies.

The experimental work was carried out in three stages:

1. At the diagnostic stage , determine the initial state of students' creative potential, assess their interests, tendency to a creative approach, and independent thinking skills.

2. At the practical-experimental stage , students are trained in interactive methods, project-based learning, problem-solving, creative tasks, and the use of innovative technologies aimed at developing creative abilities.

3. The final stage is to analyze the changes achieved during the experiment, determine the level of effectiveness, and compare them with the control group.

The observations and analyses showed that the creative abilities of students in the experimental group were formed at a much higher level than those in the control group. In particular, the following results were observed:

- increased independent thinking skills;
- increased level of creative approach to problems;
- increased desire to put forward new ideas and put them into practice;
- improving the level of independent and effective performance of professional tasks.

Three main criteria were identified when assessing effectiveness:

1. Level of knowledge: the ability to acquire theoretical knowledge about creativity and apply it in practical activities.

2. Skills and competencies: independence in completing creative tasks, ability to create innovation, and initiative.

3. Personal qualities: innovative thinking, creativity, tendency to make innovative decisions, and communication skills.

The results obtained showed that the individual approach, interactive methods and innovative technologies used in the experimental work allowed to effectively form creative abilities in students. Based on this experience, it can be concluded that the targeted use of educational methods and mechanisms aimed at developing creativity significantly increases the quality of pedagogical education. This, in turn, raises the professional training of future teachers to a higher level and serves to form them as competitive specialists based on modern educational requirements.

As part of the research, an interactive learning environment was created that enhances communication and cooperation between students and revitalizes the activity of the audience, as well as an experimental methodology based on the principles of reflection. In this process, the principles of individualization of the educational process and orientation to the student's personality were used. In the course of experimental work from this approach:

a) creating an environment of active collaboration with teachers and classmates, allowing the student to take an active professional position;

b) The goal was to create opportunities for students to develop a tendency towards the development of creative abilities.

Also, the process of developing creative abilities among students is associated not only with the acquisition of pedagogical and psychological knowledge, but also with the determination of their individual professional direction on this basis and the development of a creative approach to future professional activity. In this regard, in the process of organizing research work, special methodologies were selected and effectively used to determine the level of theoretical knowledge and practical preparation of future teachers in creativity, the formation of a creative attitude and inclination to future professional activity.

Basically, the goal of organizing experimental work is to determine the degree of effective use of pedagogical conditions that allow students to develop their creative abilities. It was clear.

In accordance with this goal, it was planned to successfully solve the following tasks during the pilot work:

- Study of documents covering the activities of higher educational institutions of pedagogy to analyze the level of existing opportunities for developing students' creative abilities based on the educational process;

- to study ways to fully utilize the capabilities of the interactive learning process in developing students' creative abilities and to identify effective factors;

- students with theoretical information about creativity as an important component of pedagogical activity ;

- ways to develop students' creative abilities in the interactive

learning process to determine.

In order to successfully implement these tasks, it was appropriate to organize research work aimed at developing students' creative abilities in the interactive learning process in the following areas:

- The level of development of creative abilities in students was studied;
- The level of awareness of the content of creative activities of the respondent students involved in the experimental work, and their skills in correctly assessing the possibilities of interactive teaching in this process was determined;
- Trainings were organized among respondent students on subjects such as “General Pedagogy”, “Pedagogical Technology”, “Pedagogical Skills”, and “Methodology of Teaching Specialized Subjects”;
- Circle classes were organized to provide an effective mechanism for developing creative abilities in students;
- of the research were studied, comparatively analyzed, integrated, and compared with the scientific hypothesis of the research work.

Conducting experimental and test work in accordance with the above research directions The following experimental methods were used for implementation:

*First direction* : observation, study of existing normative and methodological support in higher education institutions, questionnaires, interviews was held on the basis of.

*Second direction* : through questionnaires, interviews, pedagogical tasks, creative essays implemented.

*The third direction* : was organized on the basis of problem-based lectures, binary lectures, trainings, auto-trainings, pedagogical situational tasks, small exercises, and seminar-presentations.

*Fourth direction* : The "Young Talents" circle was organized.

*The fifth direction*: analytical, mathematical-statistical, was established through qualitative analysis;

Experimental work aimed at developing students' creative abilities in the interactive learning process was carried out in the following stages.

*Organizational and preparatory stage* : to organize experimental work within the framework of the research, agreements were concluded with Tashkent State Pedagogical University, Nukus State Pedagogical Institute, Kokand State Pedagogical Institute, Jizzakh State Pedagogical Institute, and experimental sites were determined. 1st-3rd year students and professors of the faculties of "History", "Primary Education and Pedagogy", "Pedagogy-Psychology" of educational institutions were given the opportunity to participate in formal research. Experimental and control groups were formed.

*The main stage* : planned, systematic, and with clear goals, experimental work was organized. The results were analyzed, and the theoretical and practical foundations of developing students' creative abilities were considered.

*Final stage* : generalizing experimental and test work is carried out to verify the effectiveness of the experimental methodology. The level of development of students' creative abilities was determined.

Interactive teaching methods and technologies. The current state of developing creativity in students is based on the fact that students develop creative abilities in the interactive learning process. During the experimental work aimed at highlighting the practical aspects of the complex methodology among the respondent students based on the level of formation of their creative abilities and the possibilities of the interactive learning system to develop these abilities. An attempt was made to determine. The study also included observation, The methods of questionnaire, questionnaire, conversation, interview, self-assessment, self-analysis, evaluation of the results of activities and giving pedagogical tasks were also used. Observations and Practical experiences: Due to the insufficient development of creative activity experience and creative abilities among students, respondents involved in experimental work in three areas were drawn to the attention of questionnaires and pedagogical tasks were presented.

*The first direction* - the questionnaire survey will assess the perceptions and current level of theoretical knowledge of respondent students and professors about "creativity", "creative abilities", "creative activity", "interactive teaching process", "interactive methods and technologies". was determined.

of the second direction - experimental work, the degree of formation of creative abilities in the respondent students was checked through pedagogical problem situations and tasks.

The third direction is to assess the level of awareness of the respondents about the essence of the interactive learning process, as well as the possibilities of interactive learning methods and technologies in developing the creative activities of future teachers, as well as the knowledge, skills and competencies about effective forms and methods of interactive learning in the educational process. It was shown that the interactive learning process has its own advantages in developing creative abilities in students, and it is possible to achieve success in this process through the effective use of a creative environment and methods aimed at developing creative abilities. Also, since a creative environment and advanced pedagogical practices play a special role in the development of students' creative abilities, the level of development of students' creative abilities in the process of being identified Clear criteria were required.

112 students from Gulistan State University, 182 from Samarkand State Institute of Foreign Languages, and 144 from Nukus State Pedagogical Institute, a total of 438 respondent students, were involved in the experimental work carried out within the framework of the research. Pedagogical cooperation with professors and teachers was established to record and summarize the results of experimental work, analyze them, provide the necessary methodological instructions to experimenters in this area, and objectively evaluate the results. The results obtained were monitored and evaluated by professors and teachers involved in the capacity of "independent experts".

### 3.2. Table 1

**Experience The initial levels of assimilation of respondents in the control and experimental groups**

ATM	number	total respondents / (T- N)	In experimental groups			In control groups		
			high	middle	low	high	middle	low

<b>Gulistan State University</b>	112	54-58	20	18	16	21	19	18
<b>Samarkand State Institute of Foreign Languages</b>	182	90-92	34	30	26	34	31	27
<b>Nukus State Pedagogical Institute</b>	144	72-72	25	21	26	25	22	25
<b>Total</b>	<b>438</b>	<b>216-222</b>	79	69	68	80	72	70

**Table 3. 2. 2**

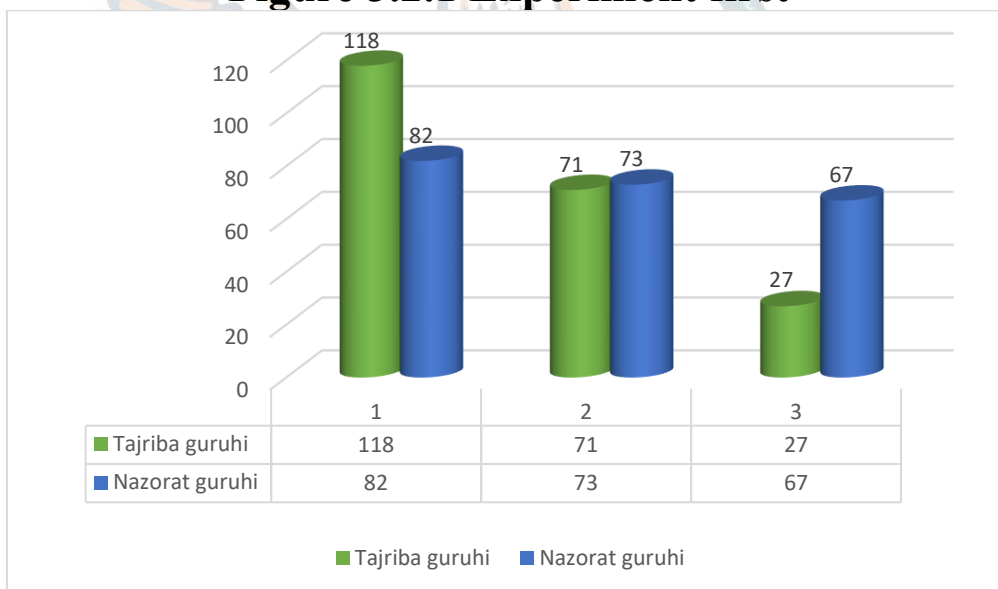
**At the end of the experiment, the levels of assimilation of respondents in the control and experimental groups**

ATM	number	total respondents / (T-N)	In experimental groups			In control groups		
			High	middle	low	High	middle	Low
<b>Gulistan State University</b>	112	54-58	33	19	2	22	19	17
<b>Samarkand State Institute of Foreign Languages</b>	182	90-92	48	31	11	34	32	26

<b>Nukus State Pedagogical Institute</b>	144	72-72	37	21	14	26	22	24
<b>Total</b>	<b>438</b>	<b>216-222</b>	<b>118</b>	<b>71</b>	<b>27</b>	<b>82</b>	<b>73</b>	<b>67</b>



**Figure 3.2.1 Experiment first**



**Figure 3.2.2 At the end of the experiment**

To calculate these indicators in percentages, we use the following formula. The mastery coefficient of each student in percentages

$U = \frac{J}{Q} * 100\%$  is found by the formula. Here Y is the number of correct answers given in the survey. Q is the total number of respondents.

**Table 3. 2. 3**

No.	Group Price	Experimental group	Control group
<b>Experience first</b>			
1	High	$U = \frac{79}{216} * 100\% = 37\%$	$U_2 = \frac{80}{222} * 100\% = 36\%$
2	Average	$U_1 = \frac{69}{216} * 100\% = 32\%$	$U_2 = \frac{72}{222} * 100\% = 32\%$
3	Low	$U_1 = \frac{68}{216} * 100\% = 31\%$	$U_2 = \frac{70}{222} * 100\% = 32\%$
<b>At the end of the experiment</b>			
1	High	$U_1 = \frac{118}{216} * 100\% = 55\%$	$U_2 = \frac{82}{222} * 100\% = 37\%$
2	Average	$U_1 = \frac{71}{216} * 100\% = 33\%$	$U_2 = \frac{73}{222} * 100\% = 33\%$
3	Low	$U_1 = \frac{27}{216} * 100\% = 12\%$	$U_2 = \frac{67}{222} * 100\% = 30\%$

Values obtained from experimental results We will conduct a mathematical and statistical analysis based on.

By matching the self - reported scores and the number of respondents in the experimental group , we obtain the following statistically grouped variation series, with the highest score being 3 points, the middle score being 2 points, and the lowest score being 1 point .

**Table 3. 2. 4**

<b>Adaptation indicators in the experimental group:</b>	
Experience first	At the end of the experiment
$x_i \{ 3, 2, 1$ $n_i \{ 79, 69, 68 (n= 216)$	$x_i \{ 3, 2, 1$ $n_i \{ 118, 71, 27 (n= 216)$
<b>Self - examination in the control group :</b>	
Experience first	At the end of the experiment
$Y_j \{ 3, 2, 1$ $m \{ 80, 72, 70 (m= 222)$	$Y_j \{ 3, 2, 1$ $m_j \{ 82, 73, 67 (m= 222)$

In order to facilitate statistical analysis, the above variation coefficients are converted into the corresponding statistical probability of the frequency (frequency)  $P_i = \frac{n}{n_i}$  and

$$Q_j = \frac{m}{m_j};$$

**Table 3. 2. 5**

Experience first		At the end of the experiment
$\begin{cases} X_i & 3, 2, 1 \\ P_i & 0,37; 0,32; 0,31 \end{cases}$	and	$\begin{cases} X_i & 3, 2, 1 \\ P_i & 0,55; 0,33; 0,12 \end{cases}$
$\begin{cases} Y_i & 3, 2, 1 \\ q_i & 0,36; 0,32; 0,32 \end{cases}$		$\begin{cases} Y_i & 3, 2, 1 \\ q_i & 0,37; 0,33; 0,30 \end{cases}$

We begin the statistical analysis by calculating and comparing the average adaptations for both groups. The average adaptation indicators gave the following results:

### First of all, experience

$$\bar{X} = \sum_{i=1}^{n=3} P_i x_i = 0,37 * 3 + 0,32 * 2 + 0,31 * 1 = 1,11 + 0,64 + 0,31 = 2,06$$

$$\bar{Y} = \sum_{i=1}^{n=3} q_j y_j = 0,36 * 3 + 0,32 * 2 + 0,32 * 1 = 1,08 + 0,64 + 0,32 = 2,04$$

This in turn will be expressed as a percentage:

$$\bar{X}\% = \frac{2,06}{3} * 100\% = 69\% \text{ and } \bar{Y}\% = \frac{2,11}{3} * 100\% = 68\%$$

### At the end of the experiment

$$\bar{X} = \sum_{i=1}^{n=3} P_i x_i = 0,55 * 3 + 0,33 * 2 + 0,12 * 1 = 1,65 + 0,66 + 0,12 = 2,43$$

$$\bar{Y} = \sum_{i=1}^{n=3} q_j y_j = 0,37 * 3 + 0,33 * 2 + 0,30 * 1 = 1,11 + 0,66 + 0,30 = 2,07$$

This in turn will be expressed as a percentage:

$$\bar{X}\% = \frac{2,43}{3} * 100\% = 81\% \text{ and } \bar{Y}\% = \frac{2,07}{3} * 100\% = 69\%$$

So, the average adoption in the experimental group is (81-69)% = 12% higher. This, in turn, means:  $\frac{81\%}{69\%} = 1,17$  equal excess.

In order to identify possible errors in the process of determining the accuracy, we first determine the mean square and standard errors.

Average square errors:

$$\begin{aligned} S_x^2 &= \sum_{i=1}^{n=3} P_i x_i^2 - (\bar{x})^2 = 0,55 * 3^2 + 0,33 * 2^2 + 0,12 * 1^2 - 2,43^2 \\ &= 0,55 * 9 + 0,33 * 4 + 0,12 * 1 - 5,9049 \\ &= 4,95 + 1,32 + 0,12 - 5,9049 = 6,39 - 5,9049 = 0,4851 \end{aligned}$$

$$\begin{aligned} S_y^2 &= \sum_{j=1}^{n=3} q_j y_j^2 - (\bar{y})^2 = 0,37 * 3^2 + 0,33 * 2^2 + 0,30 * 1^2 - 2,07^2 \\ &= 0,37 * 9 + 0,33 * 4 + 0,30 * 1 - 4,2849 \\ &= 3,33 + 1,32 + 0,30 - 4,2849 = 4,95 - 4,2849 = 0,6651 \end{aligned}$$

Standard The errors are:

$$S_x = \sqrt{0,4851} = 0,70; \text{ Ba } S_y = \sqrt{0,6651} = 0,82$$

Based on these, the variation indicators for both groups were calculated. Let's define:

$$3 \text{ and } \delta_y = \frac{S_y}{Y} = \frac{0,82}{2,07} \approx 0,4$$

If we take the significance level of the statistical condition as  $\alpha=0.5$ , then from the table of the Laplace function we can find the critical point for the statistic  $t_{kr}$

$$F(t_{kr}) = \frac{1 - 2\alpha}{2} = \frac{1 - 2 * 0,05}{2} = \frac{0,9}{2} = 0,45$$

Let 's compare the equation :  $t_{kp} = 1.67$  . Bund a n of the assessment work on the job top s a k :

$$\Delta_m = t_x * \frac{S_x^2}{\sqrt{n}} = 1,67 * \frac{0,4851}{\sqrt{216}} = 1,67 * \frac{0,4851}{14,7} = \frac{0,8101}{14,7} \approx 0,06$$

equal to, in the control group:

$$\Delta_k = t_y * \frac{S_y^2}{\sqrt{n}} = 1,67 * \frac{0,6651}{\sqrt{222}} = 1,67 * \frac{0,6651}{14,9} = \frac{1,1107}{14,9} \approx 0,07$$

is equal to. From the results obtained, we find the confidence interval for the experimental group:

$$\bar{X} - t_{kp} * \frac{S_x^2}{\sqrt{n}} \leq a_x \leq \bar{X} + t_{kp} * \frac{S_x^2}{\sqrt{n}}$$

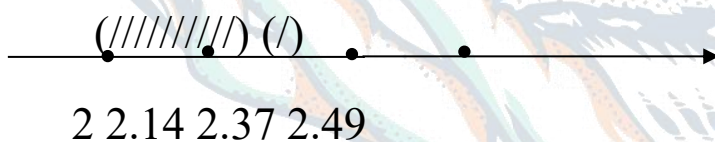
$$2,43 - 0,06 \leq a_x \leq 2,43 + 0,06 \qquad 2,37 \leq a_x \leq 2,49$$

Confidence interval for the control group:

$$\bar{Y} - t_{kp} * \frac{S_y^2}{\sqrt{n}} \leq a_y \leq \bar{Y} + t_{kp} * \frac{S_y^2}{\sqrt{n}}$$

$$2,07 - 0,07 \leq a_y \leq 2,07 + 0,07 \qquad 2 \leq a_y \leq 2,14$$

Let's describe this geometrically:



With a significance level of 0.05 It can be said that the average score in the experimental group will be higher than the average score in the control group. From this, mathematical and statistical analysis It turned out that a mostly positive result was achieved.

To the above results Based on this, we calculate the quality indicators of experimental work.

We know

$$\bar{X} = 2,43; \bar{Y} = 2,07; \Delta_m = 0,06; \Delta_n = 0,07; \text{ to equal}$$

Here are some adjectives:

$$K_{yc6} = \frac{\bar{X} - \Delta_m}{\bar{Y} + \Delta_n} = \frac{2,43 - 0,06}{2,07 + 0,07} = \frac{2,37}{2,14} = 1,11 > 1;$$

$$K_{b\delta b} = (\bar{X} - \Delta_m) - (\bar{Y} - \Delta_n) = (2,43 - 0,06) - (2,07 - 0,07) = 2,37 - 2 = 0,37 > 0;$$

Online teaching in the classroom efficiency evaluation measure online Major League  $K_{usb} = 1,11 > 1$  and to know degree evaluation measure online from zero big

$K_{b\delta b} = 0,37 > 0$  to see possible. Bundan It is known that self-examination of the experimental group is controlled. from the group's self-esteem It is higher.

Now, taking into account the similarity of the two sets of unknown means, we can test the null hypothesis using the Student Fisher selection criterion. Let's define:

$$H_0: \mu = \mu_y$$

So as a bottom count We will do :

$$T_{x,y} = \frac{\bar{x} - \bar{y}}{\sqrt{\frac{S_x^2}{n} + \frac{S_y^2}{m}}} = \frac{2,43 - 2,07}{\sqrt{\frac{0,4851}{216} + \frac{0,6651}{222}}} = \frac{0,36}{\sqrt{0,0023 + 0,003}} = \frac{0,36}{\sqrt{0,0053}} = \frac{0,36}{0,073} = 4,93$$

Student criterion We calculate the degrees of freedom using the following formula:

$$K_{x,y} = \frac{\left(\frac{S_x^2}{n} + \frac{S_y^2}{m}\right)^2}{\frac{\left(\frac{S_x^2}{n}\right)^2}{n-1} + \frac{\left(\frac{S_y^2}{m}\right)^2}{m-1}} = \frac{\left(\frac{0,4851}{216} + \frac{0,6651}{222}\right)^2}{\frac{\left(\frac{0,4851}{216}\right)^2}{216} + \frac{\left(\frac{0,6651}{222}\right)^2}{222}} = \frac{(0,0023 + 0,003)^2}{\frac{(0,0023)^2}{216} + \frac{(0,003)^2}{222}} = \frac{(0,0036)^2}{\frac{0,00000529}{216} + \frac{0,000009}{222}} = \frac{0,00001429}{0,000000245 + 0,000000406} = \frac{0,00001429}{0,000000651} = 220$$

The statistic for this probability is If we take the significance level of the sign as  $\alpha=0.05$ , then  $r=1-\alpha=0.95$  and the degree of freedom is  $k=220.7$ . The critical point of the two-sided criterion from the distribution table of the student function St ' is:

$$t_{1-\frac{(1-p)}{2}}(k) = t_{1-\frac{(1-0,95)}{2}}(220) = t_{0,975}(220) = 1,96$$

It is clear from this that the selection value of the statistic is greater than the critical point. Therefore, the Student's selection criterion is:  $T_{(x,y)}=5>1.96$ .

$H_0$  about the equality of the mean values is rejected. This can be explained with 95% confidence by the fact that the mean self-efficacy indicators in the experimental groups were always higher than the mean self-efficacy indicators in the control groups and they never overlapped.

During the experimental work, attention was paid to solving the following tasks: checking the correctness of the working hypothesis; checking the effectiveness of recommendations for the formation of students' creative and professional competence; checking the suitability and reliability of the model for improving students' creative competence developed within the framework of the study; identifying possible shortcomings and finding ways to eliminate them in a timely manner; To check the effectiveness of the criteria describing the level of professional competence of students. The following indicators were determined for the assessment of students' mastery of knowledge, skills and qualifications in experimental and control groups (Table 3.2.6):

### 3.2. Table 6

#### **Systematic classification stages of the formation of creative abilities in future teachers based on an individual approach**

- 1. Diagnostic stage** Based on pedagogical principles, it is necessary to systematically classify, collect information, conduct interviews, and determine the levels of students' creative abilities. identification, generalization, and evaluation.

- 
2. Software- support stage.  
( 2020-2021 ) Methods for developing students' creativity, professional and personal qualities based on an individual approach content of theoretical information on detection is determined, the software product has been prepared.
  3. Educational stage  
(202 1 -202 2 ) Prepared methodological applications, plans, programs Basically, students are tested on their practical skills.
  4. Final generalization stage  
(202 2 -202 3 years) - Individual approach The results of the assessment and generalization of the dynamics of pedagogical mechanisms for developing the technology of forming students' creative, professional and individual qualities are summarized. Directions of future educational work is determined.
- 

this study The experimental work carried out involved 112 students from Gulistan State University; 182 students from Samarkand State Institute of Foreign Languages; 144 students from Nukus State Pedagogical Institute, a total of 438 respondent students. During this study, the experimental work of third-year students was carried out in three stages in accordance with the academic semesters. At the first stage, we introduced students to creativity, vocational and professional activities, set tasks, and suggested ways to solve them. This was the search and orientation stage. At the second stage, in terms of the level of development of acmeological skills, The main focus was on differentiating students, developing their professional and indicative skills. We are moving to the third stage, the training of future physical education teachers. We have linked the methodology of developing acmeological competence with the development, improvement of professional activity, orientation of students to professional values, and the formation of professional competence of the individual.

## CONCLUSION

of pedagogical education, the preparation of future teachers for professional activity requires not only the acquisition of theoretical knowledge, but also the development of their creative abilities. Because in the current conditions, when the educational process is becoming increasingly complex, the teacher is required not only to convey existing knowledge, but also to develop the thinking of students, to direct them to innovation, independent thinking and creative activity. From this point of view, the scientific and theoretical views and practical recommendations put forward in the monograph are of particular importance as a relevant scientific source for the pedagogical education system.

an individual approach in the process of forming creative abilities in future teachers . It has been proven that educational activities organized taking into account the personal abilities, interests, needs and psychological characteristics of students are more effective. It has been scientifically proven that this approach can realize the internal potential of each student, develop creative thinking and strengthen professional competencies.

The following important aspects were identified during the research process:

1. Through the pedagogical and psychological factors of creativity, the direct impact of a person's thinking, interest, motivation, and intellectual potential on the effectiveness of the pedagogical process was studied.

2. The role of an individual approach in organizing the educational process in accordance with the needs and capabilities of each student, as well as aspects considered an important condition for unlocking creative potential, were revealed.

3. Due to the possibilities of innovative technologies and interactive methods, modern educational tools and methods have emerged as an effective mechanism for developing creativity.

4. The results of pedagogical pilot studies and practical experience have shown that educational activities organized on the basis of an individual approach activate creative thinking in future

teachers, encourage them to take initiative, and encourage the use of innovative solutions in the educational process.

The results of this study show that the formation of creative abilities is one of the central tasks of pedagogical education. The effective use of methods based on an individual approach in the process of training pedagogical personnel not only improves the professional readiness of students, but also allows the education system to produce innovative, enterprising and competitive teachers.

Also, the methodological recommendations developed in the monograph can be applied in practice, and they are :

- enrich pedagogical training programs;
- to develop creative potential in future teachers;
- serves to create an innovative environment in educational institutions.

As a final result, it can be said that methods based on an individual approach aimed at developing creative abilities provide a qualitatively new stage in the pedagogical education system. This, in turn, enriches the content of the educational process, increases the effectiveness of pedagogical activities, and in the future serves to educate innovative, creative, enterprising, and competent specialists in the field of education.



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**JULMATOVA SAODAT JURATCHAN'S DAUGHTER**

**TEACHER TRAINING  
DEVELOPING CREATIVE SKILLS  
METHODS BASED ON AN INDIVIDUAL APPROACH**

Monograph





## **JULMATOVA SAODAT JURATJON KIZI**

- Doctor of Philosophy (PhD) in Pedagogical Sciences;
- Associate Professor at the Department of Pedagogy, Psychology and Physical Education, Faculty of English, Samarkand State Institute of Foreign Languages;
- Author of 5 educational publications and nearly 50 scientific articles;
- Currently supervises 4 master's dissertations;
- Official opponent and reviewer for methodological seminars and defenses conducted for the PhD degree.