

## **PEDAGOGICAL OPPORTUNITIES FOR IMPROVING CREATIVE ACTIVITY OF STUDENTS THROUGH INFORMATION AND EDUCATIONAL RESOURCES**

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**Annotation;** the structural and functional content of the preparation of students of pedagogical universities for professional activity depends on the improvement of their creative activity, which requires an inovasion approach in the process. In particular, in the preparation of a future biology teacher for professional activities, it is important for them to find solutions to such tasks as accessibility to a motivational environment, development of skills such as professional skills, active abilities, reflexivity, Vitagen, sanogenic thinking, creativity and improvement of skills working with information resource tools, which are the basis for improving activity. According to the research of pedagogical scientists, future teachers have revealed the functionality of Information Communication Technologies in the content of training-concept and disciplines that ensure the effectiveness of education in the application of innovative technologies in the structure of professional competence. In the development of our research, the achievement of a positive result of improving the kraetive activity of future biology teachers by means of Information Resources is characterized as a type of activity.

**Keywords;**Methodological training of future teachers, creativity, information and resources, capacity, creativity, educational concept, integrative knowledge, innovative educational technologies, professional cognitive activity of students.

Great demand and attention is paid to the use of information and educational resources in the development of the system of continuing education on a global scale. The use of the means of information and educational resources in the globalized period determines the level of professional competence and culture of the person receiving education. This led to the adoption of strategic concepts for the development of an effective educational system. In the world education system, effective mechanisms for the development of competence of educators to work with the means of information educational resources have been applied to the educational process. At the International Educational Forum in South Korea "Incheon declare"adopted until 2030, special attention was paid to "improving the process and means of assessing the quality of education , introducing into practice mechanisms that allow determining the results achieved", instilling science and educational achievements in the content of educational materials and applying trends in improving their quality. The analysis showed that the "National Education Technology Development Plan" developed by the Department of education is being implemented in the United States in 2000, in addition to establishing national programs adopted and successfully implemented in Europe, the EU Commission approved a number of interethnic projects related to educational prospects. And in Russia, targeted plans were adopted to "create a general information environment of the educational system."

In the content of the state program "strategy of action for 2017-2021" in the Republic on raising the educational system to the level of world standards, including the support of innovations in this area, the rapid introduction of information technologies and information and educational resources a number of decisions have been made on the implementation of which notable activities are being carried out.

The focus on the issues of the formation of creativity based on the improvement of the quality and effectiveness of students ' knowledge, the improvement of a positive approach to existing professional activities on the basis of the means of information and educational resources to the higher education system is the current tasks, and the scientific research work carried out within the framework of these

Analysis of literature on the subject (Literature analysis). The application of information and resource tools to the educational system is intended to provide students with educational resources, expand their database, develop a scientific worldview in them by working with electronic resources based on the development of creative activity.

The use of Information Communication Technologies in continuing education in the Republic and the introduction of information technologies into the educational process, ways to improve the creative activity of future personnel on the basis of information and educational resource tools M.M.Aripov [1], creativity the peculiarities of the professional activity of pedagogical personnel in the organizational aspect of the pedagogical potential of the teacher are the following motivational, problematic emotional, informational, self-confidence, communicative, altruistic, analytical, constructive; innovation components A.R. Aripdzhanova [2], the scientific and theoretical foundations of the introduction of modern information technologies in pedagogical education are covered in the content of scientific research works of such scientists as U. S. Begimkulov [3]. Pedagogical knowledge and technologies in education, their scientific foundations he.Yuldashev, N.I.Tylagovs [4], N.A.The problems of improving the educational process and professional training of the future teacher in the scientific work of Muslimov [5], the technology of creating and applying modern didactic means of teaching in the training of future teachers of vocational education D the pedagogical design of professional educational processes in the electronic information educational environment.N.Scientific

research was carried out by the mamatovs, which served as a methodological source for the coverage of our research work [6]. Today, the purpose of informatization of education, in its essence, remains long-term and therefore relevant. The introduction of modern information technologies into the educational process, which provides a kind of pedagogical opportunity to organize the educational process in the information environment. The peculiarity of the organization of the educational process in the information environment is that interaction between the subjects of the educational process is carried out indirectly, through computer communication channels. One of the conditions for its modernization is the application of an information resource tool to education, the provision of modern technical means of teaching educational institutions-MEDIATEKA, high – tech educational equipment, literate textbooks and interactive teaching aids. (Ergasheva G.S. *Konseptualnie Osnovi ispolzovaniya interaktivnix programnix sredstv pri obuchenii biologii // Nauka 21 veka: Voprosi, hypothesis, otveti. Nauchny magazine. – № 2 (17), 2016. - S. 68-71.*). With an increase in the volume and complexity of information that determines the content of education in higher educational institutions, it becomes important to focus on improving the creative activity of information and educational resources in the creation of limited training time and intellectual opportunities. Such opportunities require the creation of a high-quality and high-tech environment as the basis of the modern educational system. Its creation and development has its own technical complexity, which implies the introduction of specific information communication technologies into education. Teaching through information and educational resources is a didactic tool designed to partially or completely automate the learning process using computer technology [Robert I.V. *Theoria I methodology informatizatsii obrazovaniya (psichologogo–pedagogicheskies I Technologicheskies aspekt).* – M.: IIO RAO, 2015. - s. ]. Analysis shows that, although many research works have been carried out on the problem of improving the teaching system in higher educational institutions by means of information and educational resources, but the study of the problems of expanding the scientific methodological capabilities of the development of creative activities of biology teachers based on the use of the means of information and educational resources is

Research Methodology (Research Methodology). On the basis of the creative approach of students, a scientific study was carried out based on the implementation of teaching concepts, laws, Information Communication Technologies on the mechanisms of preparation of students for pedagogical activity. At present, higher educational institutions have information resource tools in various forms of training, namely in electronic form for lectures, laboratory and practical classes, the use of which requires special attention. In the development of the study, it was found that in the development of the creative activities of future biology teachers, it is important to develop methodological recommendations on the diversification of information and educational resources, improvement and implementation of the methodological system of their effective use in all forms of teaching. It should be noted that the creative activity of future biology teachers is also formed through the search for effective methods of information educational technology, the awareness of the need to improve the activity of creativity on them.

As a result of our research on improving the process of preparing creative activities of future teachers of biological sciences through information and educational resources, the following have shown significant importance:

development of theoretical foundations for the use of programmed educational tools in the preparation of creative activities of future biology teachers through information and educational resources;

development of a methodology for using the means of information and educational resources in the development of professional competencies of future biology teachers;

development of a programmed complex of Biological Sciences with the ability to present existing laboratory classes through information and educational resources.

Audio and video tutorials on biology provide students with knowledge Control and information exchange conditions with other students in the programmed complex. Access to the complexes is free for all participants in the educational process and allows you to control the use of the complex by teachers and students. The use of an information resource tool facilitates ways to use various teaching tools and materials.

In the development of the research, information resources and information about their practical significance were perfectly familiarized, theoretical concepts related to biology and tasks that determine the level of their assimilation were developed, tasks for Independent Education on science were developed, virtual laboratory classes were organized and widely used in experimental objects. Based on the above points, the didactic basis for the development of creative activity of students with the help of Information Resources became the basis for methodology in lectures, laboratory classes and independent education in biology. It consists in organizing and supporting the educational activity of students. This function is manifested in the formation of practical skills in working with electronic objects of creative activity of students in an information resource medium. The processes of improving the creative activity of students provide for the development of creative abilities in them, such as perception, imagination, thinking, memory, speech.

On the basis of the tasks for which it is necessary to solve the improvement of creative activity of future biology teachers by means of information and educational resources, it was determined that there is the following pedagogical opportunity (Table 1).

**Table 1. Pedagogical opportunities for improving creative activity through information and educational resources**

Information and educational resources tool			
	Didactic goal	Function	Results
	Educational purpose	Types of information and resource	Students thoroughly master

		tools in the future biology teacher-visual materials through the Internet, educational and methodological materials in electronic form, web - quest technology, virtual laboratory, programmed complex, etc.k. development of creative activity based on the formation of concepts	theoretical concepts on biology;
	Educational goal	Formation in the future biology teacher of general intelligence of general abilities based on personal characteristics and abilities inherent in productive thinking, the correct use of resource tools, the formation of skills, skills to provide hygienic, environmental, physical, moral education in the content of Biological Sciences	understands the essence of the problem on the topic,
	Developing goal	Biological, which is the basis for ensuring creative activity on the basis of information and resource tools in the future biology teacher development of a base of tasks for strengthening education and effective use in types of control, ensuring the development of skills for independent education in them	creative activity based on information resource tools theoretically and practically can express its own destructive, destructive, ideological immunity to alien information

Didactic goals of improving creative activity through information and educational resources provide such a pedagogical opportunity as acquiring the skills of being able to work with information resource hosts, mastering the necessary knowledge that allows you to develop creative activities, and teaching them to creative use.

The availability of the opportunity to present existing biological educational materials in an figurative form through information resources, the organization in the system of information technologies in the expression of laboratory and practical training is required. Future biology allowed teachers to develop biological knowledge from various visual means of objects, phenomena and processes, the presence of a database in the form of an electorate in lectures, laboratory and practical classes, to use them at any time of the lesson to teachers.

Conclusions and suggestions (Conclusion/Recommendations). Through information educational resources, the didactic possibilities of improving the creative activity of future biology teachers (systemic, reflexive, creative, personal activity) are determined, requiring systematic use in the form of teaching pedagogical higher educational institutions. In this process, it was envisaged to improve the mechanisms of preparation of information educational resources of future biology teachers for creative activity through the introduction of components (electronic educational and methodological materials on science, web-quest technology, indicators of professional activity).

In place of the proposal, it is followed to use the information educational resources tool developed on the basis of lecture lesson, laboratory classes and independent education of future biology teachers (multimedia products, interactive resources, virtual laboratories, animation design). Also, the professional and pedagogical competence of biology teachers has a didactic basis for development on the basis of innovative technologies (systemic, reflexive, creative, personal activity), which creates the basis for increasing their pedagogical potential.

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