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Innovative Approaches in Computer Science and Information Technology Education

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Abstract: In the article, innovative modern information communication in the educational processthat the use of technologies has become one of the urgent tasks of today, the innovative approach of the pedagogue in the educational system and its effect on the effectiveness of the lesson, the general and specific aspects of innovative development, the ways of using modern innovative methods in the educational process held.

Keywords: Innovative approach, information - communication competence, process, distance education, informatics, active.

Introduction: The purpose of all the reforms carried out in our republic is to build a solid foundation for the future of our country. This foundation is created as a result of raising healthy, mature and well-rounded individuals. That is why the "National Personnel Training Program" and the Law "On Education" were adopted. These reforms in the field of education are bearing fruit today. The future of every society is determined by the level of development of the education system, which is an integral part of it and a vital necessity. Today, reforming and improving the continuous education system of our country, which is on the path of independent development, raising it to a new level of quality, introducing advanced pedagogical and innovative technologies into it, and increasing the effectiveness of education have risen to the level of state policy.

Currently, the concept of "innovation" is widely used. Innovation is an important part of practice and theory, it is a system of actions of social subjects aimed at improving the qualities of social and cultural objects. Innovations are relevant, important, new approaches formed in one system. It also has a positive effect on the development of the education system as a whole. Innovation is the final result of the use of technology, forms and methods, a new approach to solving a problem or a new technological process in a certain field of activity or production, which is known to lead to greater success than before. "Today's stage of development of society has such a unique feature that it is not military power, but intellectual potential, common sense, creative thinking, and new innovative technologies that are of decisive importance."

Material and Methods: As a result of the adoption of the "Law on Education" and the "National Personnel Training Program" in our country, the introduction of modern information and pedagogical technologies into the educational process and the use of computer capabilities to increase the quality of education, modern education related to the educational process - the need to carry out scientific-research works aimed at the development of control programs has increased.

M. Aripov on the creation of theoretical and practical foundations of the use of informatics and information technologies and pedagogical technologies in the educational system of our republic in the process of improving the quality of education, the use of innovative methods, the theoretical foundations of the use of non-traditional methods, group and individual methods in the educational process, A.A.Abdukadirov, M.Lutfullaev, N.I.Tailakov, U.Sh. Begimkulov, R.Kh.Djuraev, S.Gulomov, A.Sattarov, H.T.Omonov, N.Azizkho'jaeva, Z.Mamajonova, M.G.Voinova, N.Kh.Khojaev, S.A.Madyarov, E.U.Eshchonov, O'.Q.Tolipov, M.Usmonboeva , M.B. Khattabov's works can be mentioned.

Results: The decisions of the Republic of Uzbekistan on the improvement of the education system, along with the rapid implementation of reforms, put before the teachers of general education schools urgent problems such as the effective use of modern information and pedagogical technologies in organizing the educational activities of students.

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Wide introduction of modern information and communication technologies in the educational process of general education schools:
- providing information in the fields of education and training;
- intellectualization of students' educational activities;
- to deepen the processes of integration of the school education system;
- leads to the improvement of the infrastructure of the educational system and its management mechanisms.

Effective organization of the educational process of general education schools based on modern information technologies:
- unification of pedagogues, computer programmers, relevant specialists in the educational institution organizing the educational process;
- distribution of tasks among pedagogues;
- requires improvement of the organization of the educational process and monitoring of the effectiveness of pedagogical activities.

It is also important to evaluate the effectiveness of the use of pedagogical technologies in the educational process. Based on the possibility of pedagogical technologies, the efficiency of their implementation can be determined by a number of criteria. The effective use of pedagogical technologies in the teaching system also depends on the professional competence of the pedagogue. Therefore, the effectiveness of pedagogical technologies can be evaluated according to their use by the pedagogue.

• a consistent method of creation, implementation and determination of all processes of teaching and other mastery aimed at the improvement of educational forms in technical and human factors, through their joint actions (UNESCO) Pedagogical technology They are:
• able to fully reflect the tasks of education, training and personal development;
• able to express modern science and technology levels;
• ideological compatibility with the age and psychological characteristics of students;
• that the educational material is fully provided with the necessary information;
• provided the opportunity to use various methods and tools in the teaching process;
• possessing the principle of ensuring that education is demonstrative and open to all;
• availability of multifunctional educational tools and their easy operation;
• the level of the pedagogue's ability to help students organize independent work effectively.

Today, the main task of education is to teach students to be able to work independently in the conditions of the information-educational environment that is increasing day by day, to effectively use modern information technologies in various fields, and to use the flow of information wisely. For this purpose, it is necessary to create opportunities and conditions for students to work independently and to teach them to think creatively and make independent decisions. The solution to this problem naturally depends on the skills of the main organizer of this process - pedagogues. The future of every society is determined by the level of development of the education system, which is an integral part of it and a vital necessity.

Interactive method - by increasing the activity between students and the teacher in the educational process, it serves to activate the learning of students and develop their personal qualities. The use of interactive methods helps to increase the effectiveness of the lesson. The main criteria of interactive education: conducting informal debates, the opportunity to freely describe and express the educational material, the number of lectures is small, but the number of seminars is large, the creation of opportunities for students to take initiative, small group, large group, class team assignment, written work and other methods, which are of special importance in increasing the effectiveness of educational work.

Currently, one of the main directions in the field of improving educational methods is the introduction of interactive education and training methods.

As a result of the use of interactive methods, the students' skills of independent thinking, analysis, drawing conclusions, expressing their opinion, being able to defend it based on reasons, healthy communication, discussion, debate are formed and developed. The introduction of integrated education using interactive methods into the educational system is one of the important factors of modern personnel training. Every teacher knows well that the lesson is the main form of the educational process. Therefore, the

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teacher, first of all, thinks about teaching and improving the lesson. In order to achieve high efficiency in education, it is advisable to use non-traditional methods of teaching, that is, various methods of modern pedagogical technology in accordance with the subject of the lesson. This is a complex and long-lasting process, which involves the teacher's hard work gradually gaining skill levels and raising him to a high pedagogical level. A teacher who aims to achieve a high score must first of all have a creative approach to each lesson and have the professional skills to freely implement all the stages envisaged in the course of the lesson. Professional skills are the natural abilities of the teacher, pedagogical-psychological talent, taking responsibility for one's work, noticing the changes in the student in time, the child's personality, the right attitude to the student team. is a practical manifestation of the ability to hide. Organization of classes based on modern pedagogical technologies is the demand of the times.

The content and essence of the types of modern pedagogical technology used in teaching depends on the age characteristics of the students. The use of modern methods of education, pedagogical and information and communication technologies in the process of teaching mother tongue provides an effective educational process.

The interactive method of education is widely used in pedagogical literature at the end of the 20th century and the beginning of the 21st century and is used in the field of education. Its main goal is single, to interest students in independent learning, to work more on themselves, to read additional literature, to education and training in line with the times, to bring up a perfect person who can think independently. serves.

The brainstorming method is a lesson in creative cooperation, thinking together, and solidarity among students, and it is a lesson in freedom that they can and need to express their opinion. The more and better the students prepare for the lesson, the more they want to speak and listen to their friends, the lesson is considered to bring mutual activity.

In reality, the educational results are determined by the student's successful passing of pedagogical processes. The essence of the pedagogical process is reflected in the content of the joint activity of the teacher and the student, in this process the pedagogue helps the student to overcome the difficulties that have arisen.

The main essence of pedagogical support was expressed by the description of the pedagogical process, its orientation towards a certain goal, as well as the tasks to be solved in the field of personality formation and education. Educator provides information, shows, reminds, gives insight or advice, directs, validates, advises, eliminates, sympathizes, inspires, expresses interest and respect, supports demand. will help. In this place, determination of educational goals (for whom and why?), selection and development of content (what?), organization of educational processes (how?), determination of educational methods and tools (using what?) , as well as the level of qualifications of teachers (who?), the method of evaluating the achieved results (how?) should be taken into account.

The collective application of the mentioned criteria determines the nature and technology of the educational process. In the process of designing educational technology, it is necessary to set a pedagogical task and pay special attention to its solution: Modern teaching technologies are a complex integrated (whole, integral) system, which is defined on the basis of educational goals skills and competencies are reflected as a certain organized set of elements of pedagogical activity aimed at the acquisition of theoretical knowledge by students, training of certain spiritual and moral qualities in them.

When defining the pedagogical task, it is appropriate to take into account the following: The content of the teacher's activity aimed at designing teaching technology that ensures the solution of pedagogical tasks is formed on the basis of methods, forms and tools.

Teaching of the pedagogical task. Development of the didactic process. Design of the teaching technology. Designing the teaching technology. development of the information structure of the educational subject and its expression in the form of a system of educational elements; determining in advance the levels of students' mastery of educational elements; determining the initial level of knowledge of students (this indicator comes from the level of mastering the educational material on which the content of the educational subject is based); defining the limits of the material base and organizational forms of education. The main factors determining the content of the teacher's activity: type of management; type of information exchange process; types of means of information transfer and management of cognitive activity.

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Based on the concept of an activity-based approach to the teaching process, it is possible to justify the following logical sequence of its organization: initially, the description of the content of the educational material, the purpose of learning it (levels of mastery), as well as the implementation of the pedagogical task the conditions of contraction are analyzed. Then, appropriate methods of teaching and a system of managing students' cognitive activities will be developed.

Based on this, a list of teaching tools will be compiled. The integrated system of methods and educational tools created by this method is harmonized with organizational forms, that is, a specific technology is developed. Generalized pedagogical technologies are considered as a "synthetic theory" built on certain psycho-pedagogical foundations.

Educational pedagogical technologies are directed to methodically solving the problem of designing a professional training process aimed at achieving a pre-planned result. Today, there is a need to develop pedagogical technologies related to personal activity approach, critical-creative thinking, problem solving, decision-making and team cooperation.

At the same time, the following pedagogical technologies are effectively used in the practice of educational institutions: Pedagogical technology types Pedagogical technology type Purpose Essence Mechanism Problem-based teaching Increasing students' cognitive activity and creative independence.

Providing students with questions that serve to create activity in acquiring knowledge in a timely manner, sequentially. Research methods, solving problems focused on cognitive activity. Embodied education. To achieve deep mastery of subjects, to create a structure of educational methods that take into account the dynamics of students' work ability. individual method of implementation of the approach. Developmental education.Development of the person and his abilities.Directing the educational process to the internal capabilities of the person and their realization.and creating favorable conditions for determining their abilities. Mastering the program material in the amount of not less than the mandatory norm (standard) according to different mastery levels.Individual educational methods.modeling of the subject and social content of professional activity, active teaching methods, game technologies, ensuring that the acquisition of knowledge, skills and abilities is in the description of personal activity, processing and assimilation of educational information directed independent cognitive activity, game methods of engaging students in creative activities.

Discussion: The introduction of modern information technologies into the field of education allows to qualitatively facilitate and change the methods of education and the forms of organization of the teaching process based on a new approach. Information and communication technologies are becoming the most important part of the process of modernization of the educational system. The use of information media, radio, television, press publications, telephone, video, audio, computer, Internet is of great importance in forming and strengthening ideological immunity among students.

Currently, the activity of information and communication technologies in the educational system opens up great opportunities in the development of the system.

Currently, educational institutions are being equipped on the basis of modern computer and information communication technologies.

Therefore, the use of information and communication technologies in elementary grades allows students to learn how to select the necessary information, save it and use it in their further work in the development and implementation of various projects. They are constantly deepening their theoretical knowledge and improving their practical skills. The use of ICT is important not only for students, but also for teachers to improve their professional skills, computer-based teaching, and to improve the level of knowledge in their subject.

Conclusion: Thus, the pedagogical technology of the previously designed educational process embodies a system of methods, educational methods, goals, tools, opportunities for the teacher and students to work together, and a set of results.

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methods helps to strengthen the previous lesson, to provide new knowledge, to find solutions to problems, situations, assignments and tasks when used in mixed lesson types.

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