

# Improving the teaching of "Computer Science and Information Technology"

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**Abstract:** *One of the important tasks of the education system is to form an information culture of young people in the period of extensive reforms to build an information society in our country since the early days of independence. The formation of students' information culture takes place during the teaching of "Computer Science and Information Technology" in educational institutions. Therefore, it is important to teach the subject of "Computer Science and Information Technology" in educational institutions on the basis of modern pedagogical and information technologies. This subject is, firstly, one of the subjects of general education, and secondly, students should be able to apply the knowledge, skills and abilities acquired in the subject in their future careers. Therefore, in order to increase the effectiveness of teaching the subject of "Computer Science and Information Technology", based on the characteristics of any general education subject in the education system, in the future we need to clearly define our educational goals in our professional activities. We need to define the observed outcome of the unit and introduce innovative learning technologies in the learning process. From the first days of independence of the Republic of Uzbekistan, special attention was paid to the education system. This is evidenced by the adoption of the Law of the Republic of Uzbekistan on Education and the National Training Program, radical renewal and reconstruction of the material and technical base of educational institutions, the implementation of national programs, new information technologies in the educational process. We can cite the laws and decisions adopted in the field of implementation. One of the main concepts of education today is to ensure that the student can think independently, have creative skills, be aware of innovations in their field, in turn, qualified personnel for innovative activities. preparation. The use of interactive teaching methods, which are common today, is important in carrying out this task. It is appropriate to talk about the role of interactive teaching of subjects taught in educational institutions, in particular, the subject of "Computer Science and Information Technology".*

**Keywords:** computer, science, information technology.

**Introduction.** It is known that the science of "Computer Science and Information Technology" is a complex scientific discipline of interdisciplinary nature and plays an important role in the development of other disciplines. Therefore, it is recognized as a science that performs an integrative function in science and technology and education systems. Since the years of independence of the Republic of Uzbekistan, our government has been paying special attention to the problems of informatization and the use of information and communication technologies in education. In particular, the Decree of the First President of the Republic of Uzbekistan I. Karimov dated May 30, 2002 "On further development of computerization and introduction of information and communication technologies", the Decree of the Cabinet of Ministers of the Republic of Uzbekistan dated June 6, 2002 "On further development of computerization and Resolution "On measures for the introduction of information and communication technologies", "State Program for the Development of Computerization and Information and Communication Technologies for 2002-2010" attached to the Resolution. Within the framework of these programs, the organization of educational institutions of the Republic with the help of new methods and tools for the use of information technology in education, distance learning and computerized conferences, the creation of electronic textbooks and their use in the educational process. Activities aimed at education, prestigious projects on education reform, scientific research are being carried out. The future of any society is determined by the level of development of its education system, which is an integral part of it and a vital necessity. Today, the reform and improvement of the system of continuing education in our country, which is on the path of independent development, has risen to the level of public policy, raising it to a new level of quality, the introduction of advanced pedagogical and information technologies and improving the efficiency of education. The adoption of the Law on Education and the National Training Program laid the foundation for modern training through the system of continuing education. The task of education today is to teach young people to work independently in a growing information-learning environment, to use information flow wisely. At a time when the Republic of Uzbekistan is on the path of building a democratic, legal and civil society, the main goal and driving force of the reforms in the field of education is to bring up a well-rounded person. The National Program of Personnel Training is important for the education system, such as the development of new pedagogical and information technologies and their application in the educational process, as well as the provision of information technology in the educational process at the stage of continuing education. problem-solving tasks. Radical improvement of the quality of teaching in schools and universities of the country through the widespread introduction of new information and communication and pedagogical technologies, electronic textbooks, multimedia tools in the educational process, modernization of the educational and laboratory base of educational institutions. further development of an effective system of teaching and laboratory equipment, strengthening with computer technology, as well as material and moral incentives for the work of teachers and coaches remains a requirement of today. In the book "There is no

future without historical memory," the head of our state said: Therefore, in order to improve the knowledge, skills and abilities of students, to ensure that they act on the basis of independent research in the field of science and to create new pedagogical technologies, textbooks, e-textbooks, e-libraries, methods of their use. training is important.

A number of laws and forms have been developed to address these issues:

- Informatization (2003)
- About digital signature (2003)
- Electronic Document Management (2004)
- About e-commerce (2004)
- Laws on Electronic Payments (2005) as well as Presidential Decrees and Resolutions
- Measures to improve governance in the field of telecommunications (2000)
- Further development of computerization and introduction of information and communication technologies (2002)
- Additional measures for further development of information and communication technologies (2005)
- On the establishment of a public education information network in the Republic of Uzbekistan (2005)
- Decrees and Resolutions on the Organization of Information and Library Provision of the Population of the Republic (2006) and Government Resolutions
- Measures for further development of computerization and introduction of information and communication technologies (2002)
- On improving the regulatory framework in the field of informatization (2005) 11
- Measures to further improve the interaction of public and economic administration, local government with legal entities and individuals using information and communication technologies (2007)
- On measures to further develop the Government Portal of the Republic of Uzbekistan on the Internet (2007)
- Information on the procedure for providing and posting information on the Government Portal of the Republic of Uzbekistan on the Internet (2009). That's why high school graduates are now learning computer science and information technology. The number of hours devoted to this subject has also increased in recent years. It is important to achieve a unified approach to teaching the subject of "Computer Science and Information Technology" in educational institutions of the country. In this regard, I think we need to focus on equipping the material and technical base of the educational institution with modern computers, raising the system to a qualitatively new level, as well as the formation of their information and educational environment.

**Methodology.** Development of a single concept of teaching the subject "Informatics and Information Technology";

- Defining clear goals, objectives and boundaries in the teaching of "Computer Science and Information Technology" in general secondary schools, academic lyceums and universities. This includes defining the category of knowledge according to Blum's taxonomy for both levels of education;
- model programs in science, taking into account the professional orientation of future professionals in the work programs created on their basis, and, of course, leaving the key sections of science;
- Creating opportunities for each student to work 8-10 hours a week on an independent computer and network resources by expanding the material and technical base of the educational institution;
- Review of pedagogical technologies, methods of teaching science, the principle of full mastery, independent learning, person-centered collaboration and creative pedagogy;
- Solve the problem of efficient use of global network resources, connection to the fiber-optic communication line to increase the speed of information exchange;
- full satisfaction of students' rights and needs for information;
- Establishment of a special research institute to deal with the creation of educational and methodological support for students of educational institutions;
- organization of providing educational institutions with licensed software products;
- Forming them as a separate discipline, taking into account the current trends in computer science;
- Introduction of collaborative pedagogy in general secondary education, secondary special vocational education and creative pedagogy in higher education;
- Achieving coordination in the provision of standards and programs for educational institutions that train personnel in the field of "Computer Science and Information Technology";
- increase the focus on the training of system and application software specialists and provide in-depth training of specialists in the basics of programming;

- to create a new generation of intellectual education system that encourages students to develop creative abilities. It is also necessary to broaden the horizons of students in the teaching of "Computer Science and Information Technology", to give them the right to choose special courses and departments and to study them more widely in order to deepen their understanding of certain sections of the subject. The most important of the above-mentioned issues is to create all the conditions for students to effectively use the global information infrastructure market and to compete through the use of advanced pedagogical technologies in teaching science and the full formation of students' information culture. is to set up training. Of particular importance is the

issue of meaningful teaching of "Computer Science and Information Technology", the further enrichment of the material and technical base of educational institutions in order to effectively use global information resources. He recommended that such processes be carried out in two stages.

**The first stage.** Collection, development, promotion and effective use of information technology resources. At this stage, it is advisable to set the following priorities for the use of information technology in educational institutions:

- Improving the quality of training of future professionals through the introduction of modern information technologies in the educational process;
- Introduction of active teaching methods, increase of creative and intellectual activity in education; - to coordinate the relationship between the student's personal abilities and computer-based learning technologies;
- Development of new information technology teaching aids and motivation of students for the effective use of information technology methods and tools in educational activities;
- ensuring continuity in education;
- Improving the software of the educational process;
- Establish access to e-learning resources;
- to create appropriate conditions for independent learning of each student.

At this stage, the introduction of the following components of information technology is required:

- Establish widespread use of the Internet.
- Ensuring the efficient use of educational resources.
- To determine the gradual introduction of elements of distance education.

**The second stage.** Planning and coordination of a new qualitative stage in the use of information and educational technologies. At this stage, it is necessary to develop a comprehensive program for the further development of information technology in vocational education institutions and address the issues of justifying it with regulations. In particular, addressing the issue of full informatization of the educational institution should be a priority at this stage. It should be noted that the informatization of educational institutions is a complex process, which requires a number of organizational and methodological issues for teachers.

**CONCLUSION.** Today, the fields of modern information technology can be found everywhere, at every step. Multimedia technologies (projectors), electronic whiteboards and so on have entered our daily lives. From this point of view, it is important to teach students to use modern information technologies and modern pedagogical technologies, to develop in them the skills and abilities to use new information technologies and interactive methods in their field of activity. The use of modern pedagogical technologies and interactive methods in the organization of theoretical and practical classes in computer science and information technology leads to a broader understanding of the subject, the strengthening of knowledge, skills and abilities. Interactive methods of teaching computer science and information technology in educational institutions were used. The analysis of the activation of the educational process and on this basis the tools of interactive educational technologies were systematized, the theoretical and practical analysis of the activities of the teacher and the student in computer education. Interactive methods in teaching computer science and information technology were organized, statistical analysis of pedagogical experiments and experimental work in a professional college to determine its effectiveness. During the lesson, various puzzles, crossword puzzles, tests and programs were activated using instructional videos. In conclusion, the use of modern pedagogical technologies and interactive methods in the field of Informatics and Information Technology in educational institutions helps to organize lessons in a meaningful way and increase students' mastery and gain solid knowledge.

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