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# CURRENT STATUS OF THE SCIENCE OF INFORMATICS AND INFORMATION TECHNOLOGIES IN THE PROFESSIONAL EDUCATION SYSTEM, EXISTING PROBLEMS AND SOLUTIONS, PRINCIPLES AND CONTENT OF THE SCIENCE ORGANIZATION

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## ANATATSION

In this article, the improvement of the professional education system based on advanced foreign experiences, the issues of training qualified and competitive personnel for the labor market through the introduction of primary, secondary and secondary special professional education stages, as well as the current state of informatics and information technologies in the professional education system, existing problems and solutions, The principles and content of the science are discussed.

**Keywords:** Professional education, Informatics, methodological support, principles, basic competence, project work, case, research.

On a global scale, the processes of training qualified personnel in the field of vocational education are developed on the basis of modern pedagogical technologies, modern educational projects, and it is important to fundamentally improve the quality of training competitive specialists based on the adaptation of national professional qualification requirements of countries to international standards. In particular, in prestigious educational institutions engaged in advanced pedagogical research in foreign countries, such as the University of the West of England (England), Curtin University (Australia), Emily Carr University of Art and Design (Canada), Art Center College of Design (USA) Based on the modernization of the content of vocational education, scientific research is being carried out on the fundamental reform and development of the principles, content, forms and methods of the educational process of the educational process at the level of the requirements of new educational technologies. The training of highly qualified specialists according to world standards is largely related to the sustainable development of vocational education and the training of pedagogical personnel who provide it. In turn, this requires that the educational process be organized based on the requirements of advanced pedagogical technologies. This creates the need to organize the educational process taking into account the requirements of the market economy, introduce relevant teaching technologies, and improve methodological support aimed at constantly updating the educational content. In the training of future specialists, it is relevant because it aims to develop the aesthetic outlook, which is considered an important component of the education of a well-rounded personality, and to research it from a pedagogical point of view, and to bring it to a new level of quality. In 2017-2021, the action strategy for the five priority areas of further development of the Republic of Uzbekistan, "Further improvement of the continuing education system, increasing the possibilities of quality education services, continuing the policy of training highly qualified personnel in line with the modern needs of

the labor market" was set as a priority task. This will pave the way for our country to find further progress in the future and become a "roadmap" for reform in the next five years. In the implementation of these tasks, it is important to fundamentally reform the principles, content, forms and methods of the educational process in vocational education institutions in accordance with the requirements of new educational technologies.

Education in the country by implementing the tasks defined in the Action Strategy on the five priority directions of the development of the Republic of Uzbekistan in 2017-2021, training highly qualified personnel in line with the requirements of the labor market, introducing international standards for evaluating the quality of education, and creating effective mechanisms for the implementation of innovative scientific achievements. consistent work is being done to reform the system.

At the same time, professional education programs are not aligned with the levels of the International Standard Classification of Education (ISCE) accepted by UNESCO, and the National Qualification System of Uzbekistan has not been fully introduced into the educational process, preventing the trained personnel from taking a decent place in the labor market.

The main goal is to improve the professional education system on the basis of advanced foreign experiences, to train qualified and competitive personnel for the labor market by introducing primary, secondary and secondary special professional education stages, and to involve employers in this process.

In the system of professional education - the principles, content, forms and methods of the organization of the science of informatics and information technologies require radical reformation at the level of the requirements of new educational technologies. According to the analysis of the current state of computer science education and the accumulated experiences, it became clear that there are a number of problems. In particular, the problems of teaching informatics and information technologies in professional educational institutions:

- The role of informatics and IT science in society is not sufficiently evaluated;
- Inadequate qualification requirements for science and excessive curriculum load;
- "dryness" of science content in textbooks, separation from life and becoming obsolete;
- Weakness of students' interest in learning science;
- Lack of qualified Informatics teachers;
- Outdated methods of teaching informatics and IT science;
- Absence of a unified assessment system for computer science and IT
- Failure of the used criteria to meet modern requirements;

We offer the following as a solution to the problems of teaching computer science and information technology in professional educational institutions:

In order to strengthen students' interest in learning general education subjects through the formation of basic competences, it is necessary to include practical exercises and application and project work in science curricula. This situation not only improves the quality of mastering of a particular academic subject, but also opens opportunities for inter-discipline and connection of science with everyday life and increases the effectiveness of education.

It is recommended to set aside separate hours for students to carry out project activities, so that students can do only one project work in the subject or field of study they are interested in per academic year. Project work topics are selected by teachers as a problem situation or

case within one or more academic subjects. In the hours allocated for the project work, the teacher: at the beginning distributes the topics of the project work among the students, gives instructions and tips for their implementation. Then he gives examples of finished project work, answers the questions of students during the implementation of the project work, and at the end conducts the defense of the project work.

Students can work individually or in groups of 3-4 people depending on their interests. It is better to put more emphasis on group work. Project work ends with a defense held at the end of the academic year. The defense can be held in the form of a conference within the framework of one or several academic subjects. Individual or group work of students on the topic of project work may include the following educational activities: planning their own research activities, dividing tasks among themselves, setting learning goals for them, searching for necessary information, searching for solutions to problematic situations related to the topic, choosing the most appropriate one and using it. substantiating, conducting surveys or experiments if necessary, preparing a report on the results of the project work, analyzing and evaluating their own activities, preparing a presentation for the defense of the project work and defending it. These activities are carried out at the expense of hours allocated within the relevant discipline. Students usually conduct their research on the problem of project work in independent activities outside the classroom. And in the sessions allocated as lesson hours from various subjects, they receive advice from the relevant subject teachers, perform calculations in Informatics classes, presentation slides in Informatics classes.

In the organization of computer science classes, it is necessary to pay more attention to practice than to theory, and to some extent to abandon the approach based on providing students with ready-made educational materials. It is recommended to use more interactive methods such as cases, research, projects, small learning discoveries in computer science classes. It is necessary to use scientific research methods such as observation, experiment, measurements, analysis and synthesis, induction and deduction, comparison and analogy in the formation of small research skills in students. It is important not only to form knowledge and skills in students, but also to acquire competencies to apply them in life situations.

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