Volume 1, Issue 7, October 2023 **ISSN (E):** 2938-3757

Reflection of Advanced Technologies in The Content of Modern Technological Education in an Educational Institution

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Abstract
The content of technological education is updated in accordance with the development of science and technology, the emergence of new technologies. But due to the inertia of the educational system, such an update is almost always too late. New technologies and their use in all spheres of human activity are rapidly changing modern production, world markets, economy and social sphere.

Keywords: advances technologies, content, modern technological education, educational institution, inertia, educational system.

Introduction

The development of techniques and technologies creates completely new innovative markets that provide users and consumers with modern services and technological solutions. Currently, a global industrial technological revolution is taking place, which is connected with rapid development and great achievements in the field of digital technologies, artificial intelligence, robotics and biotechnology.

All industrial revolutions significantly changed people's life and environment, industry, society, economy and, of course, affected education not only in its content, but also in the educational tools and forms used in education.

The program of the "Technology" subject is aimed at forming the technological thinking of students and created opportunities for practical application of the science principles. The curriculum of the "Technology" subject was supplemented with new modules: modern material, information and humanitarian technologies and their development prospects; formation of students' technological culture and design-technological thinking; building educational trajectories and plans in the field of professional self-determination. An important innovation of technological education was the introduction of project activities that allow the formation of project thinking not only in the field of engineering and technology, but also in other fields of science. One of the determined results of mastering the subject is the formation of the concept of integration of material and information technologies, which determines the technological trends of modern production [4].

Changes in technology education have led to changes in the training of future technology teachers. Subjects related to information technology, automation, and the ways in which these technologies are used in technology education have appeared in curricula and syllabi. Specializations introduced by universities for in-depth training of students in the field of new technologies played an important role in the modernization of professional technological education [5].

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President Shavkat Mirziyoyev defined a strategic plan to include Uzbekistan in the ranks of 20 developed countries in the world. In order to achieve this huge and universal goal, it will be necessary to fundamentally change the economy and industry of Uzbekistan and widely implement the principles of "Industry 4.0".

"Industry 4.0" is defined by advanced innovative technologies: big data, robotics, modeling, horizontal and vertical industrial system integration, industrial Internet of things, cyber security, cloud computing, additional technologies, augmented reality.

Internet of Things technologies are not only the Industrial Internet, but these technologies have already been introduced into the educational system, allowing to significantly expand the possibilities of electronic and distance learning. The Internet of Things in the form of educational tools, sensors, individual laboratory devices, functional scientific laboratory systems allows for remote laboratory and practical training using not only virtual, but also real educational equipment.

n education, 3D printers have been actively used by teachers in the system of additional technical education, in the field of "Technology" to introduce students to advanced industrial technologies. Learning the basics of additional technologies is included in the approximate basic curriculum of general education. In the subject of "Informatics", students get acquainted with these technologies and the device of 3D printers.

In "Technology" you can get acquainted with additional technologies in the department of product development based on three-dimensional modeling and its creation with the help of computer-controlled educational equipment. In additional technical education, 3D printers are used to place various technical devices, products and models.

Paragraph 71 of the Presidential Decree "On the State Program for the Implementation of the Development Strategy of New Uzbekistan for 2022-2026 in the Year of Attention to Humanity and Quality Education" states "Artificial intelligence technologies attention is paid to the issue of creating more facilities for development and supporting them. For this purpose, the purposeful implementation and further support of research and development in the field of digital technologies and artificial intelligence, the holding of an international scientific and practical conference dedicated to the development of the field of artificial intelligence, digital technologies and artificial intelligence Tasks such as strengthening the material and technical base of the laboratories of the Institute of Technology Development are defined [1].

Artificial intelligence technologies began to enter education. We can talk about the emergence of a new direction in pedagogy - robo-pedagogy. The subject of robo-pedagogy is a pedagogical process in which some of the teacher's pedagogical functions are performed by robots, bots or artificial intelligence algorithms. Based on this, a hypothesis is put forward about the existence of the laws of human upbringing and education using robots and artificial intelligence technologies. The tasks of robo-pedagogy are to study the laws of successfully transferring the social experience of the older generation to young people with the help of artificial intelligence, the easiest ways to achieve pedagogical goals and tasks, the implementation of educational laws and teaching methods using artificial intelligence. is to find ways to improve.

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Big data (Big Data) is the designation of structured and unstructured data of a very large volume and variety that can be processed efficiently and quickly by software tools. With the emergence of technological possibilities for analyzing large volumes of data, it became possible to talk about big data.

Analysis of big data allows to accelerate the solution of scientific, research and pedagogical problems. By studying statistics, you can work with individual trajectories and global education systems. Big data can help improve pedagogical design based on the analysis of learning outcomes and student behavior.

Virtual and augmented reality. Virtual reality (virtual reality, VR) is a technology whose control object is a computer model of reality. Objects and subjects of models of real objects created by technical means are transmitted to a person through his senses: sight, hearing, smell, touch, etc. Computer synthesis of the features and reactions of virtual reality is performed in real time to create a reliable set of real sensations.

Augmented reality (AR) is a technology that allows experiments to be carried out through the perception of mixed reality, that is, in addition to real objects, the tester also perceives data created using computer-generated "augmented" elements. is enough.

Virtual and augmented reality are technologies that are effectively used in distance education, allowing to expand the possibilities of modern education. Based on these technologies, simulation laboratory stands and laboratory devices with elements of augmented reality are being created. Such technologies require serious changes in the training of professors and teachers.

All industrial revolutions led to structural changes in the labor market. The introduction of production automation has deprived many workers of manual and heavy physical labor. At present, we can say that intellectual professions are also in danger.

According to various estimates, between one-third and one-half of all jobs in industrialized countries will be replaced by robots, computer programs, and other automated solutions in the next two decades [3]. According to the results of the mentioned research, the "atlas of new professions" will be published, which will present professions that will be in demand in the near and far future.

New specialists are emerging in the educational system who have not only modern information and communication skills, but also advanced psychological and pedagogical technologies - teachers who create educational programs based on game techniques, teaching state of mind developers of tools, designing equipment and software to teach users effective states of mind, mental fitness trainers who develop programs for the development of individual cognitive skills, etc. [2].

Currently, attention is paid to improving the well-being and quality of life of citizens of our country by creating conditions for the development of digital technologies, increasing the availability and quality of goods and services produced in the digital economy using modern digital technologies, and increasing awareness and digital literacy. Currently, the most important digital technologies are: artificial intelligence technologies, big data and blockchain technologies, industrial internet, robotics and robosensor, virtual and augmented reality technologies, new industrial technologies, wireless communication technologies, etc.

Currently, the leading role in the development of modern digital technologies in our country is assigned to the Research Institute for the Development of Digital Technologies and Artificial Intelligence. The institute conducts fundamental and practical researches on the development of digital technologies and artificial intelligence, develops software products, and forms a scientific ecosystem for the development of digital technologies.

The directions of modern industrial digital technologies that we have considered are already reflected in individual educational programs of technological education. Taking into account the changes taking place in modern industrial production, new educational modules, subjects, master's programs are being developed and implemented.

The analysis of the subject "Technology" in the current basic general education curriculum shows that although modern technologies are expressed in the content of the subject, it is very similar to the situation 10-20 years ago. And the trends of "Industry 4.0" are not sufficiently represented in the subject area.

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