

## INTEGRATING MODERN EDUCATIONAL TECHNOLOGIES TO SIMPLIFY AND IMPROVE TEACHING AND LEARNING

**Nigmatova Khilola Abrorovna**

Department of foreign languages Associate Professor, Tashkent  
University of Information Technology Tashkent city, Uzbekistan

### ANNOTATION

Modern humanity has joined the general historical process called informatization. In contrast to the industrial society, in which the main was the production of wealth, in the current post-industrial society, basic activity is the production of information (below information will to understand the knowledge of how information about persons, objects, facts, events, phenomena and processes regardless of the form of their presentation, which can be written on this material

Media), and this process is called Informatization (hence the term — the information society).

#### **Key words:**

### INTRODUCTION

Such a shift of emphasis is caused, firstly, by the fact that humanity is aware of the limited natural (natural) resources of its habitat, and, secondly, by the emergence of global problems (for example, energy, environmental), the solution of which is impossible by the previous means. Information becomes the main resource for the development of the world community and significantly affects the development of other industries and spheres of life: science, technology, social spheres (cultural communication between people, education).

The main values of the information society are:

- \* Knowledge;
- \* Qualification;
- \* Independent thinking;
- \* The ability to work with information and make a reasoned decision on this basis;
- \* Awareness not only in a narrow professional field, but also in related areas

A special role in the informatization of society belongs to the education system, since education acts, on the one hand, as a consumer of information, on the other, as a creator of new information technologies (through the highly qualified personnel produced). Since the ability to work with information is becoming one of the priorities for a modern person, the education system is designed to form a student's ability to think critically, starting from school (for critical thinking is characterized by knowledge, comprehension, application, analysis, synthesis, evaluation).

Education, flexibility of thinking, the ability to navigate in a huge flow of information becomes significant values for a person throughout his life. These same values are also significant for society, since the rapid development of technologies in all fields of science, culture, and production implies the use of the creative potential of educated people not only in the field of management, but also for service technologies. Therefore, the informatization of education is considered as one of the priority directions of the informatization of society.

Informatization of education is understood as the process of providing the field of education with the methodology, technology and practice of developing and optimal use of modern IR technologies focused on the implementation of psychological and pedagogical goals of teaching and upbringing, and used in comfortable and health - saving conditions.

Stages of informatization of education:

The first stage of informatization of education (electronics) was characterized by the widespread introduction of electronic tools and computer technology into the process of preparing students first of technical specialties (late 50s-early 60s), and then humanities (late

60s-early 70s) and assumed training in the basics of algorithmization and programming, elements of logic algebra, mathematical modeling on a computer.

Such an approach provided for the formation of an algorithmic style of thinking, mastering some programming languages, mastering the skills of working on a computer using computational and logical algorithms. The relatively low performance of computers of that time, the lack of user-friendly, intuitive software tools for an ordinary user (not a programmer) and having a friendly interface did not contribute to the widespread use of computer technology in the field of humanities education.

The second stage of informatization of education (computerization) (since the mid-70s years to the 90s) is associated with the emergence of more powerful computers, software that has a friendly interface, and is characterized primarily by the use of dialog interaction between a person and a computer. Students as for the first time, the subjects of the educational process had the opportunity, working on a computer, to interact with models - "substitutes" of real objects and, most importantly, to manage the objects of study. Computer educational technologies made it possible to study various (chemical, physical, social, pedagogical, etc.) processes and phenomena. Computer technology began to act as a powerful learning tool as part of automated systems of varying degrees of intelligence. In the field of education, automated systems of training, knowledge control and management of the educational process have become increasingly used.

The third, modern, stage of informatization of education is characterized by using powerful personal computers, high-speed high-capacity storage devices, new information and telecommunications technologies, multimedia technologies and virtual reality, as well as philosophical understanding the ongoing process of informatization and its social consequences.

#### MATERIALS AND METHODS

Informatization of education involves the use of a certain conceptual apparatus, which, basically, can be considered well-established. Since in the process of informatization, information becomes the main product of consumption, knowledge, then technologies aimed at processing, transmitting and transforming information, began to be called information and communication technologies (ICT).

Under the means of ICT understand software, hardware and hardware and technical means and devices operating on the basis of a microprocessor computer technology, as well as modern means of broadcasting information and information exchange, providing operations for the collection, storage, accumulation, processing, production, transmission and use of information, as well as the ability to access information resources of computer networks.

Since informatization (including education) is impossible in practice without the use of these software, hardware and technical means and devices, they are also

referred to as means of informatization of education (or means of new informatization technologies).

But using only the means of informatization of education is not enough for the full use of information and communication technologies in education. In practice, such means must necessarily be supplemented by the ideological basis of informatization of education, as well as the activities of specialists in various fields of knowledge, whose participation is necessary to achieve the goals of informatization.

Therefore, the concepts of educational informatization tools and ICT tools are closely related. In many cases, these two concepts mean the same thing. But the concept of means of informatization of education is broader and includes ICT tools,

supplemented by the components mentioned above. Information processes are the processes of collecting, processing, accumulating, storing, searching and distributing information.



**Figure 1. 7 principles for education**

other participants; participants have the opportunity to think carefully before sending messages;

\*The possibility of organizing a discussion of the proposed topic, consultations and other forms of educational activities;

video conferences;

\*The ability to demonstrate educational information in a multimedia, graphic form;

\*Conducting experiments, setting up experiments;

\*The possibility of organizing group participation in the discussion and interpretation of information;

\*Synchronous information exchange.

It is the didactic properties that allow ICT to perform didactic functions, aimed at the implementation of certain aspects of the educational process (explanations, explanations, discussions, conducting control sections, tests, creative works, and so on).

Didactic properties and functions of information and communication technologies For the effective use of IR technologies in education, it is necessary to know their properties and functions in order to clearly determine which didactic tasks it is advisable (from the point of view of pedagogy and psychology) to use one or another of them. The choice of a particular method or means of teaching is determined, on the one hand, by the specifics of the educational subject, a specific didactic task to be solved, on the other - by the didactic properties of specific means of teaching. IR technologies are being considered it is as a means of organizing the cognitive activity of students. As you know, didactics is a theory of learning that shows the patterns, principles of learning, tasks, content of education, forms and methods of teaching and learning, stimulation and control in the educational process, characteristic of all academic subjects, at all age stages of learning. Under the didactic properties of a particular teaching tool, including IR technologies, understand the natural, technical, technological qualities of the object, those its aspects, aspects that can be used for didactic purposes in the educational process.

There are three groups of didactic properties.

1) Didactic properties of educational information presentation technologies:

\*displaying and transmitting information in text, graphic, audio, video and animation format through electronic educational resources;

- \* the ability to search for information of interest;
- \* the ability to consolidate knowledge and process the acquired skills;
- \* the ability to evaluate knowledge, skills, skills;
- \* organization of communication with the teacher.

2) Didactic properties of educational information transfer technologies:

preparation, editing and processing of educational, educational-methodical, scientific information;

storing and reserving information; systematization of information;

dissemination of information in various forms; providing access to information using electronic banks and databases to obtain the necessary information.

3) Didactic properties of technologies for organizing the educational process:

a) e-mail:

sending messages to a large number of students at the same time;

asynchronous exchange of information (text, graphic, audio) between the teacher and students;

the possibility of organizing consultations, monitoring, and the like;

b) teleconferences:

provision of synchronous and asynchronous communication, which allows

conference participants to send their information at any convenient time ,as well as receive

it

#### CONCLUSION

The presence of educational technology is growing in the classroom. The new generation of kids come ready to work with these new technologies, which play an important role in children's learning and acquiring various cognitive knowledge so that educational technology must be incorporated into future curriculum. The application of educational technology enhances skills and cognitive characteristics.

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With the help of new technology comes an explosion of learning and receiving new information, especially on mobile devices.

**Educational technology** (commonly abbreviated as **EduTech**, or **EdTech**) is the combined use of computer hardware, software, and educational theory and practice to facilitate learning. When referred to with its abbreviation, EdTech, it is often referring to the industry of companies that create educational technology.

In addition to practical educational experience, educational technology is based on theoretical knowledge from various disciplines such as communication, education, psychology, sociology, artificial intelligence, and computer science. It encompasses several domains including learning theory, computer-based training, online learning, and m-learning, where mobile technologies are used.

Since technology is not the end goal of education, but rather a means by which it can be accomplished, educators must have a good grasp of the technology and its advantages and disadvantages. Teacher training aims for effective integration of classroom technology.

The evolving nature of technology may unsettle teachers, who may experience themselves as perpetual novices. Finding quality materials to support classroom objectives is often difficult. Random professional development days are inadequate.

According to Jenkins, "Rather than dealing with each technology in isolation, we would do better to take an ecological approach, thinking about the interrelationship among different

communication technologies, the cultural communities that grow up around them, and the activities they support."Jenkins also suggested that the traditional school curriculum guided teachers to train students to be autonomous problem solvers.However, today's workers are increasingly asked to work in teams, drawing on different sets of expertise, and collaborating to solve problems.Learning styles and the methods of collecting information have evolved, and "students often feel locked out of the worlds described in their textbooks through the depersonalized and abstract prose used to describe them".These twenty-first century skills can be attained through the incorporation and engagement with technology.Changes in instruction and use of technology can also promote a higher level of learning among students with different types of intelligence.

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