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## **PEDAGOGICAL-THEORETICAL FOUNDATIONS OF THE USE OF MODERN INFORMATION TECHNOLOGIES IN THE CONDITIONS OF DIGITALIZATION OF THE EDUCATION SYSTEM**

Nurmetov Khushnud Safarbayevich  
Teacher of Chirchik State Pedagogical University  
E-mail: khushnud.nurmetov.85@mail.ru

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### **Abstract**

This article highlights the pedagogical and theoretical foundations of using modern information technologies in the process of digitalization of the education system. It analyzes the issues of developing a digital learning environment, the role of information technologies in the educational process, and the development of teachers' digital competencies. Furthermore, the article reveals the possibilities of improving the quality of education, enhancing the teaching process, and developing innovative pedagogical activities through the use of modern information technologies.

**Keywords:** Digital education, information technologies, digitalization, pedagogical process, digital competence, e-learning, innovative technologies.

### **TA'LIM TIZIMINI RAQAMLASHTIRISH SHAROITIDA ZAMONAVIY AXBOROT TEXNOLOGIYALARIDAN FOYDALANISHNING PEDAGOGIK-NAZARIY ASOSLARI**

Nurmetov Xushnud Safarbayevich  
Chirchiq davlat pedagogika universiteti o'qituvchisi  
E-mail: xushnud.nurmetov.85@mail.ru



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### ANNOTATSIYA

Ushbu maqolada ta'lim tizimini raqamlashtirish jarayonida zamonaviy axborot texnologiyalaridan foydalanishning pedagogik-nazariy asoslari yoritilgan. Raqamli ta'lim muhitini shakllantirish, axborot texnologiyalarining ta'lim jarayonidagi o'rni, pedagoglarning raqamli kompetensiyalarini rivojlantirish masalalari tahlil qilingan. Shuningdek, zamonaviy axborot texnologiyalaridan foydalanish orqali ta'lim sifatini oshirish, o'qitish jarayonini takomillashtirish va innovatsion pedagogik faoliyatni rivojlantirish imkoniyatlari ochib berilgan.

**Kalit so'zlar:** Raqamli ta'lim, axborot texnologiyalari, raqamlashtirish, pedagogik jarayon, raqamli kompetensiya, elektron ta'lim, innovatsion texnologiyalar.

### АННОТАЦИЯ

В данной статье освещены педагогико-теоретические основы использования современных информационных технологий в процессе цифровизации системы образования. Проанализированы вопросы формирования цифровой образовательной среды, роль информационных технологий в образовательном процессе, а также развитие цифровых компетенций педагогов. Кроме того, раскрыты возможности повышения качества образования, совершенствования процесса обучения и развития инновационной педагогической деятельности посредством использования современных информационных технологий.

**Ключевые слова:** Цифровое образование, информационные технологии, цифровизация, педагогический процесс, цифровая компетентность, электронное обучение, инновационные технологии.

### INTRODUCTION

The fundamental changes taking place in the world education system today require the development of new scientific and pedagogical approaches to organizing the educational process. As a result of the rapid development of information and



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communication technologies, digital transformation processes are intensifying in all spheres of society, including the education system. The digitization of the education system is one of the important factors that bring the modern pedagogical process to a new level. The digitization process means not only the use of electronic means, but also the renewal of educational content, methods, management systems and pedagogical relations [1].

One of the main tasks facing educational institutions in the current conditions is to train specialists who can think independently in the information society, effectively use digital means and constantly develop their knowledge.

The introduction of modern information technologies into the educational process is also changing the content of the teacher's activities. Now the teacher is not only a provider of knowledge, but also a person who directs the learner to independent research, organizes the use of information resources and manages the educational process.

### **LITERATURE REVIEW AND METHODOLOGY**

The concept of digitalization represents the process of improving the quality of education, expanding the capabilities of learners and creating new pedagogical conditions based on the use of modern information technologies in the educational process. The main goal of using digital technologies in education is to expand existing pedagogical opportunities, increase the efficiency of the educational process and form a person-oriented educational environment.

From a pedagogical point of view, the digital educational environment creates the following opportunities:

- rapid provision of educational materials in electronic form;
- individualization of the educational process;
- expansion of opportunities for independent learning;
- development of distance learning forms;
- analysis and monitoring of learning outcomes.

Information technologies should be considered not as a simple technical tool in the educational process, but as a pedagogical tool that ensures the achievement of



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educational goals [3]. Research in the field of pedagogical technologies has emphasized that the effectiveness of the educational process depends not on the use of technology, but on the methodological basis for its use [2].

Theoretical foundations of the use of modern information technologies

### **Information function.**

Provides access to a wide range of knowledge sources through electronic libraries, digital platforms, and Internet resources.

### **Developmental function.**

Develops creative thinking and independent decision-making skills of learners.

**Communicative function.** Provides rapid communication and cooperation between the teacher and the learner.

### **Control function**

Allows for the identification and monitoring of knowledge through electronic assessment tools.

Therefore, when introducing digital technologies into education, the main attention should be paid not to technical capabilities, but to their pedagogical relevance.

Development of digital competencies of a teacher in a digital educational environment

In the process of digitizing the education system, the requirements for the professional activities of a teacher are also being updated. A modern teacher must be not only a deeply knowledgeable specialist in his subject, but also a professional who can use information technologies for pedagogical purposes, select and apply digital educational tools.

Digital competence represents the ability of a teacher to use modern information technologies effectively, purposefully and safely. This competence is manifested in the processes of organizing the educational process, creating educational materials, using electronic resources, and managing the activities of learners[8].



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The digital competence of a teacher consists of the following components:

Information competence - the ability to search for, sort, analyze and apply the necessary information from various electronic sources.

Technological competence - the ability to use computer programs, electronic platforms and digital tools.

Methodological competence - the ability to select information technologies in accordance with educational goals and integrate them into the educational process.

Communicative competence - the ability to organize effective pedagogical communication in a digital environment.

Information security competence - adherence to security and ethical standards when using digital resources.

A teacher with digital competence increases the activity of learners in acquiring knowledge, using innovative approaches in the educational process. Therefore, the development of digital training of teachers is one of the main directions of modernization of the education system.

Methodological opportunities for using modern information technologies in the education system

Modern information technologies allow improving teaching methods, enriching the content of education and developing independent activity of learners in the educational process. Electronic learning platforms, multimedia tools, virtual laboratories, interactive programs and technologies based on artificial intelligence serve to increase the efficiency of the educational process.

The methodological opportunities of information technologies are manifested in the following[12]:

- presenting educational materials in an understandable and visual form;
- modeling of complex processes;
- interactive organization of practical exercises;
- taking into account the individual capabilities of learners;
- developing independent educational activity.

The use of electronic resources increases the activity of the learner. In this case, the learner becomes not a receiver of ready-made information, but an active participant



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in the process of independent search and analysis of knowledge[4]. Digital technologies also allow the teacher to monitor the educational process, analyze learning outcomes, and organize pedagogical activities based on an individual approach[13].

Pedagogical conditions for the formation of a digital educational environment  
For the effective use of information technologies in the education system, it is necessary to create certain pedagogical conditions.

First of all, a modern digital infrastructure must be formed in educational institutions. Computer equipment, the Internet, electronic learning platforms, and digital resources must become an integral part of the educational process.

Secondly, it is important to regularly improve the skills of teachers in the use of information technologies. Because the effectiveness of education is determined not by the presence of technology, but by its pedagogically correct use.

Thirdly, pedagogical and methodological requirements should be taken into account when developing electronic educational resources. Electronic material should not be a simple collection of information, but a scientific and methodological tool serving educational goals.

Fourthly, it is necessary to improve the assessment system in digital education. The use of electronic tests, monitoring systems and analytical tools allows you to improve the quality of education.

Thus, the effective formation of a digital educational environment requires the interaction of technological infrastructure, digital competence of teachers, high-quality electronic educational resources and modern assessment mechanisms. The comprehensive provision of these pedagogical conditions serves to increase the effectiveness of the educational process, develop independent learning skills of students and train qualified specialists in accordance with the requirements of the digital society [14].

### **CONCLUSION**

In the context of the digitalization of the education system, the use of modern information technologies is one of the important factors in the development of the



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educational process. Information technologies create a wide range of opportunities for updating the content of education, improving teaching methods, and forming modern competencies of learners.

According to the results of the study, for the effective introduction of digital technologies into the educational process, the professional training of teachers, digital competence, and readiness for innovative activities are of great importance. Therefore, in the process of digitalization of the education system, the main attention should be paid not only to the introduction of technologies, but also to the training of specialists who can effectively use them pedagogically.

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