

IMPACT OF DIGITAL EDUCATION TECHNOLOGIES ON THE METHODOLOGICAL COMPETENCE OF FUTURE TEACHERS

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Annotation: *This scientific article analyzes the role of digital educational technologies in the formation and development of methodological competence of future teachers. In the modern educational system, digital technologies are considered as an important tool in the effective organization of the pedagogical process, improvement of teaching methods and optimization of the learning process of students. In the course of the study, the impact of digital pedagogy, e-learning platforms, multimedia tools and artificial intelligence-based educational systems on methodological competence was studied scientifically and theoretically. The article used scientific literature analysis, comparison, systematic approach and pedagogical observation techniques. The results of the study show that the effective use of digital educational technologies increases the methodological training of future teachers, expands the possibilities of applying innovative teaching methods and increases the effectiveness of the educational process. The article also developed practical recommendations for the development of digital competence of teachers.*

Keywords: *digital education technologies, methodological competence, digital pedagogy, innovative education, pedagogical technologies, e-learning, tpack model.*

INTRODUCTION

As one of the main factors in the development of society in the 21st century, the rapid development of information and Communication Technologies is gaining special importance. Digital technologies have expanded into all spheres of life, including the educational system, radically changing the content, form and methods of the educational process. One of the most important tasks facing the educational system today is the training of qualified pedagogical personnel with modern knowledge and skills, innovative thinking, able to effectively apply digital technologies. Therefore, the development of their methodological competence in the process of training future teachers is one of the important pedagogical tasks.

In a modern educational environment, the professional activity of a teacher is associated not only with the supply of educational material, but also with the training of students in independent thinking, the use of innovative techniques and the effective organization of the educational process. Especially in the context of digital technologies, it is necessary for the teacher to use various electronic platforms, multimedia tools, virtual laboratories, distance learning systems and interactive learning materials when organizing





the educational process. This requires a high level of methodological competence from teachers.

Methodological competence refers to a complex of professional qualities aimed at the effective organization of the pedagogical activity of the teacher, planning the educational process, the application of modern teaching methods and the development of knowledge and skills of students. In the process of forming methodological competence, digital educational technologies occupy an important place. Because digital technologies make it possible to organize the teaching process interactive, interesting and effective.

In recent years, the process of digital transformation of the educational system on a global scale has been gaining momentum. The development of digital educational technologies serves to modernize the educational process, improve the quality and efficiency of education and develop the professional potential of teachers. Research shows that the effective use of digital technologies improves the pedagogical activity of teachers, develops their ability to think innovatively and expands the possibilities of applying new techniques in the educational process [8].


Digital technologies also provide the flexibility of the educational process, making it possible to educate students based on an individual approach. For example, it is possible to effectively organize the educational process using e-learning platforms, distance learning systems and multimedia resources. This is an important factor in the development of methodological competence of prospective teachers. Because the use of digital educational tools will enrich the pedagogical activities of teachers and help to organize the educational process more efficiently [3].

In addition, in modern pedagogical science, the issue of integrating digital technologies into the educational process is one of the areas of special attention. In particular, the tpack (technical Pedagogical Content Knowledge) model serves to develop their methodological competence based on the integration of teachers' knowledge of technological, pedagogical and science content. This model allows teachers to effectively apply technology in the educational process as well as optimize the learning process of students [2].

Much attention is paid to the implementation of digital technologies in the educational system of Uzbekistan. In recent years, large-scale reforms have been implemented to digitize the educational system, introduce e-learning platforms, develop distance education and increase the digital competence of teachers. This process in turn also requires the development of methodological competence of future teachers.

In this context, the scientific study of the impact of digital educational technologies on the methodological competence of future teachers is one of the pressing issues. The purpose of this article is to analyze the role and importance of digital educational





technologies in the formation and development of methodological competence of future teachers. Within the framework of the study, the impact of digital pedagogy, e-learning systems, multimedia tools and innovative pedagogical technologies on methodological competence is studied.

Review of thematic literature

In recent years, the issue of introducing digital technologies in the educational system and studying their impact on the pedagogical process has become one of the most important areas of scientific research. The influence of digital educational technologies on the professional training, pedagogical activity and methodological competence of teachers has been studied by many domestic and foreign scientists.

Foreign researchers evaluate digital competence as an important professional quality of a modern teacher. For Example, X. In his research, Ye cites teacher numerical competence as an important factor that directly affects the effectiveness of pedagogical activity. According to the results of the study, the effective use of digital technologies by teachers increases the interest of students in the educational process and significantly improves the effectiveness of Education [8].


Other researchers argue that integrating digital technologies into the educational process serves to improve the pedagogical activities of teachers. In Particular, Z. Alptekin and A. In research conducted by Taneri, it was noted that the mutual integration of knowledge regarding the content of technology, pedagogy and science is important in the development of methodological competence of teachers. The authors note that the effective application of technology in the educational process serves to develop innovative pedagogical activity of teachers [2].

M. In his research, Bond studies the impact of digital pedagogy on the professional development of teachers, arguing that the digital educational environment plays an important role in improving the effectiveness of the pedagogical process. According to the author, digital educational technologies allow teachers to apply new pedagogical techniques and increase the flexibility of the educational process [3].

Local researchers are also widely studying the role and importance of digital technology in the educational system. For Example, A. Abdullayev notes that the introduction of digital technologies into the educational process in his scientific work is an important factor in improving the effectiveness of teaching, modernizing the educational process and improving pedagogical activity [1].

R. Tursunov, on the other hand, notes that the use of digital technologies in the educational system serves to develop the methodological activities of teachers. According to the author, digital educational tools allow teachers to organize the course process in an





interactive form, effectively provide educational materials, and develop independent learning activities of students [5].

B. Rasulov and F. The use of innovative pedagogical technologies in the educational process in the research of Sattarova is assessed as an important factor in the development of professional competence of teachers. In their opinion, digital technologies serve to improve the pedagogical activity of teachers and increase the effectiveness of the educational process [4].

It has also been noted in some studies that the use of artificial intelligence and digital platforms in the educational process is important in the development of teacher methodological competence. For Example, N. In his research, Najmetdinova argues that the introduction of artificial intelligence technologies into the educational process serves to promote the innovative activities of teachers [6].

At the same time, in modern pedagogical research, the role of digital educational technologies in the process of training future teachers is highlighted. According to the results of the study, the use of digital technologies in higher education institutions helps to develop methodological competence of future teachers, increase their professional training and prepare them for modern pedagogical activity [7].


The analysis of the above scientific studies shows that digital educational technologies are an important factor in the formation and development of methodological competence of teachers. At the same time, in existing studies, the influence of digital technologies on the methodological competence of future teachers has not been sufficiently complexly studied. Therefore, the scientific in-depth study of this issue and the analysis of its pedagogical aspects are of urgent importance.

Research methodology

In this study, the impact of digital educational technologies on the formation and development of methodological competence of future teachers was studied in a scientific-theoretical and practical way. In the process of research, scientific sources related to pedagogy, educational technologies and information and communication technologies were analyzed and the existing theoretical views were summarized. The research methodology was organized on the basis of a systematic approach, a competency approach and an integrative approach.

The theoretical basis of the study is scientific views in the field of pedagogy, educational technologies and digital pedagogy. In modern pedagogical science, it is emphasized that digital technologies occupy an important place in the process of developing professional training of teachers. The research notes that the introduction of digital technologies into the educational process expands the possibilities of improving the





pedagogical activity of teachers, improving the effectiveness of the educational process and applying innovative teaching methods [1].

Within the framework of this study, a number of scientific methods were used in order to determine the impact of digital educational technologies on the methodological competence of future teachers.

The method of systematic approach was also important in the research process. With this method, the correlation between digital educational technologies, pedagogical process and methodological competence was systematically analyzed. A systematic approach makes it possible to study digital technologies as an important component of pedagogical activity. On this basis, the impact of the digital education environment on the methodological competence of future teachers was studied in a complex way.

The comparative (comparative) method was also used in the research process. With this method, traditional teaching methods and teaching methods based on digital educational technologies were compared. The results of the comparison showed that lesson processes organized on the basis of digital technologies activate the educational activities of students and increase the effectiveness of Education [5].

The study also used the method of pedagogical observation. With the help of this method, the process of applying digital technologies of future teachers in higher education institutions in the educational process was observed. The results of pedagogical observation showed that the use of digital technologies helps to increase the methodological training of teachers. In particular, the use of multimedia tools, e-learning platforms and interactive learning materials has been found to serve to improve the effectiveness of the learning process.

In addition, analysis and generalization techniques were also used in the research process. With the help of these methods, the theoretical views presented in scientific sources were summarized and the role of digital educational technologies in the development of methodological competence was clarified. The results of the study showed that the effective use of digital educational technologies serves to improve the pedagogical activity of future teachers and develop their innovative pedagogical competence [4].

Special attention was also paid to the competency approach in the research process. In the modern educational system, a competency approach is an important methodological basis in the development of professional training of teachers. This approach aims to develop the practical skills and competencies of teachers in addition to their theoretical knowledge. Therefore, the use of digital technologies in the process of training future teachers is considered as an important factor in the development of their methodological competence [7].





The results of the study show that the effective integration of digital educational technologies into the educational process serves to develop methodological competence of future teachers. With the help of digital technologies, teachers will be able to provide educational materials in an interactive form, individualize the educational process and develop independent learning activities of students.

Conclusions and recommendations

In this study, the impact of digital educational technologies on the formation and development of methodological competence of future teachers was scientifically-theoretically analyzed. Based on the results of research, analysis of scientific sources and pedagogical observations, it was found that digital technologies are an important pedagogical tool in the modern educational system.

The results of the study showed that the use of digital educational technologies serves to increase the methodological training of future teachers. With the help of digital technologies, teachers will be able to provide educational materials in an interactive and visual form, activate the learning process of students, and effectively organize the educational process. This in turn serves to improve the effectiveness of the educational process.

Also, in the research process, it is determined that the use of digital educational technologies helps to develop innovative pedagogical activities of teachers. It is necessary that the modern teacher not only knows his subject perfectly, but also has the skills to effectively use digital tools, create e-learning resources and organize the educational process on the basis of innovative methods. Therefore, it is important to widely introduce elements of digital pedagogy in the process of training future teachers.

The results of the study show that the creation of a digital educational environment is an important factor in the development of methodological competence of teachers. In the digital learning environment, teachers will have access to a variety of electronic platforms, multimedia tools, distance learning systems, and interactive learning materials. This serves to more effectively organize the educational process as well as to activate the learning process of students.

In addition, digital technologies also have a positive effect on the professional development of teachers, as revealed in the research process. With the help of digital technologies, teachers will have the opportunity to master modern pedagogical techniques, acquire new knowledge and skills, and improve their professional activities. This helps to improve the pedagogical skills of teachers.

Based on the results of the study, the following main conclusions were drawn:

First, digital educational technologies are an important pedagogical tool in the development of methodological competence of future teachers. Digital technologies allow





teachers to effectively organize the educational process, apply innovative teaching methods and activate the educational activities of students.

Secondly, the use of digital technologies in the educational process serves to improve the pedagogical activity of teachers. The use of digital tools makes it possible to provide educational materials in an interactive form, individualize the educational process and develop independent learning activities of students.

Thirdly, the use of digital technologies in the process of training future teachers will help to increase their professional training and prepare them for modern pedagogical activities.

Based on the results of the study, the following recommendations were developed:

First of all, in the process of training future teachers in higher educational institutions, it is advisable to widely introduce disciplines related to digital pedagogy and educational technologies. It serves to promote teacher digital competence.

Secondly, it is necessary for teachers to organize advanced training courses in the application of digital technologies. Through this, teachers can develop skills in the effective use of modern digital tools.

Fourth, it is important to develop innovative pedagogical methods and technologies aimed at developing the methodological competence of future teachers, as well as their introduction into the educational process.


Fifth, it is necessary to create a modern digital educational environment in educational institutions, organize the educational process on the basis of digital platforms, and expand scientific research aimed at developing digital competence of teachers.

In general, the effective use of digital educational technologies is important in developing methodological competence of future teachers, improving their professional training and ensuring the effectiveness of the educational process.

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