

Scientific Herald of Uzhhorod University

Series "Physics"

Journal homepage: <https://physics.uz.ua/en>

Issue 56, 1628–1636

Received: 23.02.2024. Revised: 18.05.2024. Accepted: 24.06.2024



DOI: 10.54919/physics/56.2024.162pb8

Development of the network communication culture in the future teacher

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Abstract

Relevance. The field of education in the 21st century is, as before, one of the key aspects of the development of society, however, modern conditions are changing the context of the training and functioning of future teachers. Due to the development of digital culture and the active use of online platforms and courses in the education system, it is important to investigate the development of a network communication culture among students of teacher's institutes.

Purpose. The purpose of the study is to investigate and highlight the issues of the development of digital education in future teachers of secondary schools in the Republic of Kazakhstan.

Methodology. The following methods of scientific research were used: comparison, analysis, generalisation, typological approach.

Results. As a result of studying aspects of the development of a network communication culture among young pedagogical specialists, it was possible to develop a vocabulary of the leading terms, such as "network culture", and also to clarify the significance of the introduction of the digital form of the educational process. In addition, the main areas of modern education were clarified: the use of social networks and the use of ETDSML-type projects.

Conclusions. This scientific research examines and analyses the main areas of application of one of the most promising areas in digital education – MOOCs, and robotics, as important educational tools in the learning process with further digital progress. This study can be used by teachers of higher educational institutions for the development of network communication of teachers and applicants, as well as for the further investigation of the network communication culture of students in teacher's institutes.

Keywords: distance learning; Internet; information environment; education; digital literacy.

Suggested Citation:

Kastayev S, Shektibayev N, Niyazova G, Koshanova G. Development of the network communication culture in the future teacher. *Sci Herald Uzhhorod Univ Ser Phys.* 2024;(56):1628-1636. DOI: 10.54919/physics/56.2024.162pb8

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Introduction

Modernisation of professional education of students of teacher's institutes involves a qualitative increase in the theoretical level of knowledge of young specialists and the development of a communicative culture among future teachers. In this case, the integrative form of communication skills needs appropriate scientific and methodological support for the education of a qualified and effective specialist. The problem of this study is the preparation and development of the communicative culture of the future teacher within the framework of the use of modern technologies.

According to C. Romero-Garcia et al. [1], active and interactive models of university education ensure the development of digital competence of future specialists and form a common culture of a globalised, digitised, intercultural, and changing society. According to researchers, digital competence is one of the key skills of professional activity, due to which a young specialist gets the opportunity to quickly adapt to the new conditions of modern society. It is necessary to investigate the aspects and nuances of the development of a digital, in particular, a network communication culture within the framework of university training of future teachers.

The study by M.T. Mahmutkyzy and N.K. Sultanova [2] emphasises the fact that the labour market in the territory of the Republic of Kazakhstan directly depends on the quality of the educational system in the country. Training a highly professional workforce to meet the demands of the times necessitates a reform of the education system. The correct use of the knowledge, skills, and abilities acquired at a higher educational institution, the professional qualities of future teachers ensure a high level of competence of a specialist, which includes new methodological foundations for conducting the educational process and, as a result, forms a network communication culture of a future specialist. It is necessary to carefully study the issue of the competence of the future teacher within the framework of modern Internet education.

P. Pardede [3] pays great attention to the basic skills of 4C (communication, collaboration, critical thinking, creativity), which include communication skills, the ability of a future teacher to cooperate, as well as the presence of creative and critical thinking. According to the researcher, the use of the above-mentioned skills by a young specialist allows the integration of knowledge acquired in a higher educational institution into future pedagogical skills and practice. It is necessary to study the aspect of the future teacher's communicative skills more deeply through the framework of a network communication culture.

According to a study by S. Kramsch and H. Zhu [4], the concepts of global social networks, global sources of information and culture are important aspects of modern times. The new culture, according to researchers, determines the mobility and distribution of "online" and "offline" contact zones, and discursive communities that are used by different groups of people can have a common social space. It is important to investigate not only the issue of globalisation of the digital society, but also the communicative culture in the modern world.

In the study by G.Z. Niyazova et al. [5] special attention is paid to the digital training of teachers of secondary schools. According to researchers, the motivation of teachers and the stimulation of the introduction of

specialised multimedia content into school curricula is of great importance for improving the digital competence of teachers in the Republic of Kazakhstan. It is necessary to thoroughly investigate the issue of expanding the framework of digital education of teachers in order to develop and improve the educational process in the country's secondary schools.

The purpose of this study is to explore ways to develop digital awareness of future teachers of secondary schools.

Materials and Methods

While working on this study, the following methods of scientific research were used: analytical, comparison, typological approach, and generalisation. The analysis highlighted the current trends in the development of the network communication culture of young professionals who continue their studies in higher pedagogical educational institutions. With the help of this scientific method, the concepts of "network culture" and other terms important for the disclosure of the research topic were defined. With the help of the analytical method, this paper highlighted the features of functional teaching of the network communication culture of the future teacher within the framework of the modern educational process. Using the method of analysis, the specific features of the formation of knowledge and skills of digital literacy among young professionals were investigated. Moreover, using this method, the paper investigated the features of the development of the strategy of communicative and semantic activity in the educational process.

Using the analytical method of research, the features of attracting intelligent educational systems into the educational process are studied through the use of electronic information bases, digital education systems, and modern artificial intelligence systems. Using the analysis, the possibilities of automatic control of school management systems were investigated. Moreover, with the help of the analytical method, the aspect of the use and prospects of using the unified information space for educational purposes was considered. Using the analytical method, the important role of digital literacy of the future teacher was displayed. Using a typological approach, the study emphasised aspects of the development of a network communication culture of future pedagogical specialists, and also with the help of this approach, it was possible to determine the basic aspects of modern digital education. Also, relying on the typological approach of scientific research in this study, it was possible to explore the main aspects of digital learning in the future pedagogical practice of young professionals. The use of a typological approach in this study helped investigate aspects of the development of a network communication culture among young professionals who continue their professional training in higher educational institutions.

Using the comparison, various forms of digital education were studied, in particular, MOE, online courses, educational platforms, and digital learning. In the paper, using the comparative method of scientific research, it was possible to highlight the issue of the use of various digital technologies in the modern educational process, due to which the development of digital education is possible. Based on the comparative method of scientific research, the features of the digital competence of a young specialist and schoolchildren as participants in a new educational

process were studied. Using this method, it was possible to highlight the nuances of the role of digital competence as an aspect of the development of the network communication culture of the future teacher. Using the generalisation, it was possible to consider the problem of the implementation of network communication culture in the educational process by young specialists of the pedagogical sphere. In addition, based on the above-mentioned method, modern solutions in digital education in the territory of the Republic of Kazakhstan were highlighted.

Results

In the 21st century, the solution to the issue of the development of the communicative culture of the future teacher is possible using the developed general social communication skills of a young specialist. The successful professional activity of a future teacher depends not only on teaching competencies, but also on their communication skills and digital competence, which are achieved during the period of mastering the profession at the university. The term “network culture” refers to the culture of communication and transmission of information on the Internet, including the culture of behaviour, the use of language and etiquette, and ways of interaction in online communities and social networks. The widespread use of digital technologies has led to the formation and development of virtual space, based on which the infrastructure of information and network culture has been established [6]. Modern society, using network culture, social networks and digital progress, has come to globalisation and digitalisation of the educational process.

Globalisation is a process of increasing integration and interdependence of economic, political, cultural and social systems in the world, which occurs as a result of the accelerated development of communication technologies, transport, and communications, as well as the legalisation of international trade and investment. Globalisation and the appeal to the products of digital progress is an important aspect of the development of human culture and social identity, which has significantly influenced the educational process around the world. Due to globalisation, social changes in the issue of personal identity and relationships are inevitable [7]. Globalisation leads to an accelerated

movement of people, goods, services and capital across borders, as well as to the spread of ideologies, cultural patterns, and technologies in different regions of the world. In turn, the most important aspect of digitalisation in the issue of education is the creation and use of online training, conferences, and specific educational sites, which are becoming commonplace for various educational systems. Such phenomena require appropriate personnel training on the part of universities that educate future teachers. The training of young specialists in the teaching field involves the development of an appropriate network communication culture, based on which young people will easily be able to obtain appropriate qualifications, develop their own competence, and acquire the necessary knowledge, skills, and abilities for successful work in the field.

The development of digital literacy in students of teacher’s institutes, based on the information and educational environment of higher educational institutions, which in the modern world are increasingly switching to the format of online learning, is an important aspect of the overall development of the educational system. Young specialists who are preparing for pedagogical activity not only cultivate the culture of teaching in the traditional format, but also form the tools of digital education, which includes working with pedagogical Internet sites, educational platforms and online courses, due to which the globalisation of the educational process takes place. The communicative culture of the future teacher is an important link in the development of competence and professional skills of a young specialist, and also contributes to the establishment of their effectiveness as a teacher. Establishing a sufficient level of digital literacy is an important part of the development of a network communication culture, therefore, students should possess this competence to a high degree.

Of great importance for the education system is the development of digital forms of conducting the educational process. Higher education institutions, relying on digital education, improve the quality of educational services provided, and also gain a number of advantages, due to which the learning process becomes much more convenient for all its participants (Figure 1).

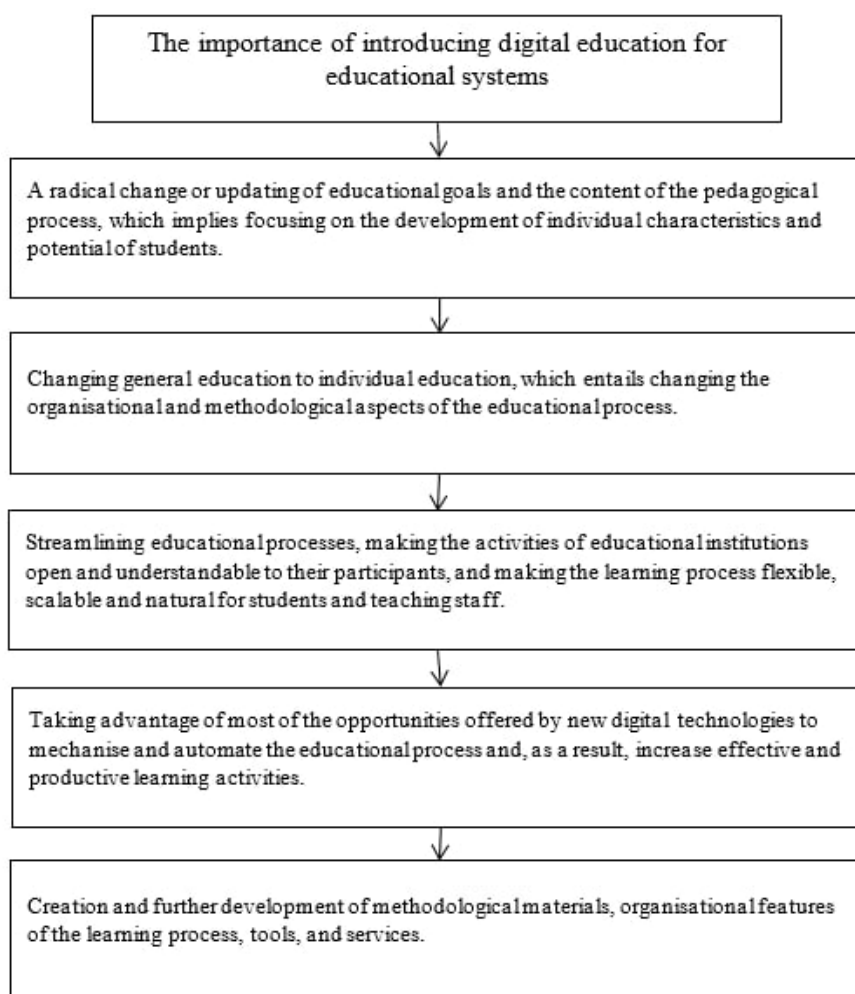


Figure 1. The importance of introducing digital education for educational systems

Source: [8].

The use of modern digital technologies by future teachers to complement the traditional information training of young professionals provides a dynamic development of the educational process, and the use of various online programmes and tools for conducting the educational process allows planning and configuring educational processes in a format convenient for all participants. Online conferencing software and applications enable effective communication between students and educators for active communication, and applications that are used on mobile devices enable educators to engage a larger audience in active discussions about learning material or unlearning tasks. It is also necessary to pay attention to the fact that digital progress continues and gradually begins to occupy a leading niche in the educational process, in this regard, there is a need for the development of network culture skills among teachers of higher educational institutions and their students [9].

The problem of developing a network communication culture among students of teacher's institutes also lies in the development of skills and specific competencies that ensure work with modern technologies within the educational process. The strategy of communicative and semantic activity has an impressive number of promising areas for the implementation of psychological and

pedagogical goals during the educational process, both in the upbringing of future teachers and in their intended practice in school institutions of the country. An example of a variety of pedagogically promising areas is the involvement of intelligent learning systems in the educational process, namely electronic databases, training systems and artificial intelligence systems, which enable the possibility of automatic control and analysis of the school management system, the establishment of independent work of students and teachers. Another way to develop an educational system based on digital progress is to support special software that is able to optimise the learning process and manage educational information during learning. Moreover, a promising area is the use for educational purposes of the possibilities of a single information space, through the use of telecommunication means, namely computer networks, telephone and satellite communications [10].

The use of robotics in the modern educational process of Kazakhstan is not yet commonplace, but researchers are working in this line and actively exploring the prospects of this area in the modern digital education of young people (Figure 2).

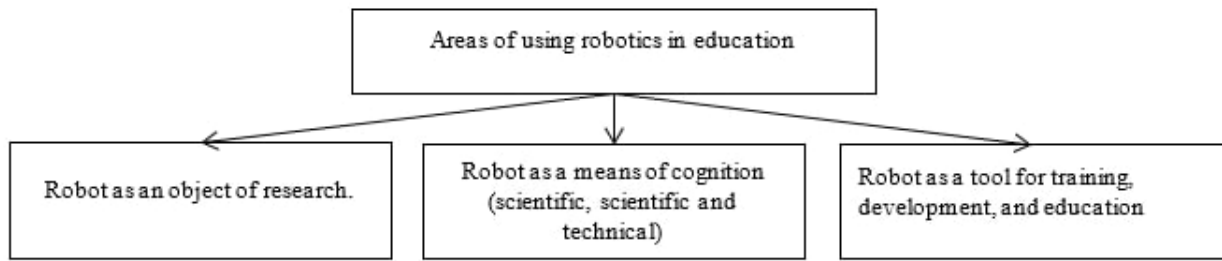


Figure 2. Main areas of robotics application in the educational process

Source: [11].

The use of a robot as an object of research in the educational process implies the study of the design and principles of its operation. The study of a real sample of a robotic system helps the consistent assimilation of educational information, which affects the real learning process. In the conditions of the 21st century, there is a need for a future teacher to know the information field, as well as to process the information received, which is ensured by the presence of critical thinking in the student. The process of critical thinking of students in higher education institutions varies depending on the learning context. Communicative culture, which is based on the critical thinking of young people, is an important part of their social education. Relying on cognitive skills, future teachers develop the skills of the educational process during communication with the teaching staff, and fellow students, as well as in practical classes [12]. The possession of advanced cognitive skills by students of teacher's institutes provides both a cognitive component of the learning process and forms a communicative component [13]. Based on the cognitive activity of future teachers and their critical thinking, the student's communicative culture is developed.

For students of the Republic of Kazakhstan, the issue of the development of network communication culture is an important aspect of the development of holistic personality in a future teacher. The use of digital products in synergy with conventional tools of the educational process has an extraordinary educational potential, since they increase the interest of all participants in the educational process, develop skills in working with digital tools and form digital literacy in students. It is based on personal digital literacy that future specialists of the pedagogical sphere, using a variety of Internet platforms and digital technologies, will be able to conduct successful pedagogical activities.

When preparing future teachers in the modern digital world, an important aspect is the development of social and communicative competencies in the use of social networks. Many teachers of higher education, although they actively use Internet sites for their personal purposes, mostly refrain from using them for educational purposes. Despite the fact that teachers understand their potential in learning, there are various barriers that prevent them from using these tools in educational activities [14]. It is important for future teachers to be able to use Internet platforms as a separate type of communication, to be able to navigate the relevance and priority of real communication. In this regard, young professionals need to consider the specific features of social networks and use

their real potential, create spaces managed and owned by students, develop structured methods of their use, and also include Internet sites in the assessment process [15].

Many teachers used to prefer the use of conventional teaching methods, such as problem or presentation models, performance-based assessment, and text materials. Nowadays, teachers of higher education institutions tend to use alternative methods of assessing knowledge and providing educational services, such as portfolios and group work. However, the modern possibilities of converting courses into social networking platforms, using the many available functions, are still not fully used by teachers for educational purposes. This is conditioned by the fact that many teachers often do not have sufficient experience working with social networks for educational purposes, which may cause them to refuse to use social networks. However, there are many resources, online courses and training materials that can help teachers learn how to use social networks for educational purposes and overcome these obstacles [16].

Information literacy is a key skill for modern students, especially in the context of using social networks for educational purposes. Teachers should take an active part in the education of students in the field of information literacy, including the use of social networks for educational purposes. Interactive exercises aimed at introducing students to various social media tools can help students realise the potential of social media in their studies. In addition, teachers should encourage academic networking and collaboration so that students can learn how to work as a team and use social media to achieve common goals. It is also important that the courses are adapted to the needs of each group of students, so teachers should constantly analyse student feedback and make changes to the content and methods of presentation in accordance with these reviews. This can help convince students that the use of social networks for educational purposes is not only effective, but also interesting and useful [17].

There is an Educational Tools for Developing Social Media Literacy (ETDSML) project, which is a means to enhance the digital competence of future teachers. ETDSML Erasmus+ is a project aimed at developing a network communication culture of teachers, it provides specific tools and resources to help them teach students literacy in social networks [18]. An example of a networked communicative culture in the Republic of Kazakhstan is the Internet courses presented by the Massive Open Online Course (MOOC). Such courses involve training on Internet platforms, where a large

number of students study selected areas in an interactive format, as well as having the opportunity for open access. This practice makes the educational process open to innovative solutions, and, as a result, improves the overall quality of education. The use of such online learning platforms pursues a number of tasks that involve the development of a national open education platform in Kazakhstan, the creation of mass online courses to improve the quality of the educational system and the development of regulatory documentation for mass open online courses at the national level [19]. Achieving results with the tasks set involves increasing the level of teaching of teachers of higher educational institutions, improving the educational programmes themselves, filling the niche of online education in the country, recognition of trained specialists by employers, and providing teachers with additional income.

For a future school teacher, it is important to have a number of specific personality qualities, based on which the process of preparing for pedagogical activity is structural and not complicated. The possession of knowledge, skills, and abilities of the pedagogical sphere expands the instrumental possibilities of teaching students. One of these competencies that a future teacher should form is a network communication culture, since this option is important in the world of digital progress. Relying on the skills of network communication culture, students of teacher's institutes of the country develop the skills of working with digital gadgets and digital learning tools that are actively used or will be used in the near future in school curricula. The developed network communication culture of the young specialist will positively influence the effective and successful pedagogical activity of the future teacher. The modern information and educational environment in which a young specialist resides should be utilised in a pedagogical way, using Internet resources and personal digital literacy, which will consequently develop in students of secondary educational institutions.

Discussion

Many researchers have been engaged in the study of the issue of educating a student's network communication culture, some of whose views should be given special attention so that they can be compared with the results of this study. According to E. Lopez Meneses et al. [20], conventional higher education within the walls of the university was focused on a teacher who provided educational services to students, as well as the very process of knowledge transfer and their reproduction by future specialists. However, according to this study, the educational process of digital learning provides an opportunity for an individual approach to students of pedagogical specialities, while globalising education itself. It is also important to consider the fact that by forming a network communication culture during the educational process at the university through the digital format of conducting educational activities increases the level of professional competence of future teachers.

According to a study by I.M. Gomez-Trigueros et al. [21], there is a serious need to prepare future teachers for the digital form of school practice upon graduation, since the development of a network communication culture among students of teacher's institutes will allow them to smoothly transition from information and communication

technologies to learning and knowledge technologies. Based on the results of this study, the training of young specialists in the pedagogical field is an important aspect of the development of digital education in general.

According to R. O'Dowd and M. Dooly [22], the exchange of educational information between participants of the educational process via the Internet is an actual and modern pedagogical approach within the framework of digital progress. Learning based on online projects and virtual exchange in the modern realities of distance and online learning. However, as this study has shown, network communication culture is one of the main forms of the educational process, but it also requires the use of traditional tools of pedagogical activity. It is the joint use of the digital sphere and conventional training that guarantees successful practical activity in the modern informative and educational environment.

A.S. Fatimah and S. Santiana [23] in the study of the teaching system in the 21st century and the use of technology by students of teacher's institutes argue that the rapid development of the technological sphere encourages teachers to use new forms of material in the educational process. According to the researchers, it is the use of digital technologies in the 21st century that is the central part of modern education. According to this study, the development of a network communication culture of a future teacher, which is based on the use of modern technologies, is one of the key elements of the development of a future specialist.

I.M. Rasulova [24] argues that the use of the Internet for educational purposes is an important aspect of modern education, and, as a consequence, the basis of a prosperous society. According to the researcher, the education of digital literacy among young people involves the use of the advantages of the Internet, since the network greatly simplifies the process of researching and studying the materials of educational courses in higher educational institutions. The researcher emphasises the fact that the use of Internet platforms and online learning provides accessibility and economic benefits to future specialists who are at the stage of preparation for practical work in higher education institutions. The knowledge of technologies, aspects of access to information sources, general educational policy, as well as attitude to modern technologies are key factors of effective digital education of our time, according to the researcher. According to this study, aspects of teaching digital literacy to students, as well as the orientation of future teachers to provide a modern information and educational environment are elements of the effective use of Internet resources in the framework of future school practice, which, as a result, ensures the development of network communication culture of all participants in the educational process.

In the study by D.M. Dzhusubalieva and A.K. Mynbayeva [25], attention is paid to comparing the concepts of information culture and digital competence, as a result of which researchers have identified their continuity. The researchers claim that the modern educational system is developing towards online courses and Internet platforms designed for distance learning and the use of an interactive information and educational environment. The researchers focus on the experience of developing mass open online courses, which, according to researchers, are aimed at using a foreign training product

in the optional educational process and the creation and operation of online courses by Kazakh specialists. Indeed, the development of online educational products in the educational market of Kazakhstan continues to develop and be supported by higher educational institutions of the country, which is part of the training of young pedagogical specialists and the formation of their network communication culture.

Y.C. Sian et al. [26], who studied the use of Internet resources and strategies in the educational environment of higher educational institutions for developing the digital competence of young professionals, argue that the use of Internet sources in the search for information is the actualisation of the temporal and spatial resources of students. The results obtained by the researchers suggest that undergraduate students are active users of Internet resources for academic study, as well as to cover their own social communication needs. In comparison, there is a need to agree with the opinion that the responsible use of the Internet space by students of higher educational institutions provides an opportunity in this process of forming a network communication culture of young professionals.

S. Kalita and S. Das [27] pay special attention to the role of information and communication technologies in modern education as an integral part of modern education. Researchers claim that in the conventional form of the educational process, there is a paradigm shift in favour of new technologies. As a result, according to the researchers, education focused on an individual approach to each student ceases to single out the teacher as the main participant in the educational process. Possession of digital competence by the teacher, in this case, provides digital tools, as well as Internet information resources necessary for the modern educational process. According to the results of this study, it is the development of a network communication culture of a young specialist in the pedagogical sphere that is the main aspect of the development and active use of information and communication technologies during the educational process.

A. Gordillo et al. [28] note that teachers often do not have sufficient digital competencies to effectively develop skills in this area in their students, especially with regard to the safe and responsible use of technology. In their study, the researchers draw attention to the usefulness of Social Lab (a simulated social network) as a learning tool to increase the digital competence of teachers in this area, especially when using an online course in MOOC format. According to the results of this study, the use of social networks and mass open online courses for the development of a network communication culture contributes to improving the quality of university teachers' training, improving educational programmes, developing online education in the country, recognising graduates by employers and obtaining additional income by teachers.

Scientific researchers on the topic of the development of a network communication culture among young specialists are convinced of the relevance of the education of such competencies among students of higher educational institutions. Due to the possession of the skills

of the modern educational process, prospective teachers also possess the tools of digital literacy, on which the level and quality of educational services provided in the upcoming practice will depend. The education of a modern teacher includes many aspects and nuances, however, due to the developed network communication culture, future teachers are ready for the challenges of modern digital education, online learning, and many Internet courses for which all previously agreed aspects will be necessary.

Conclusions

In the conditions of the active development of digital and online education in the 21st century, the issue of the development of a network communication culture among future representatives of the teaching profession is the goal of research by many scientists, however, the study of this issue showed the following results. The issue of the development of a network communication culture among future teachers was investigated in the context of actively involving online education in the conventional educational process. The paper highlighted the importance of using modern digital learning for educational systems. Studying the research topic enabled us to explore and emphasize the main areas of digital education development. These areas include the implementation and development of modern software to enhance the educational process, establishing a unified digital information space, and utilizing intelligent learning systems such as electronic databases and artificial intelligence. The paper highlights the prospect of using robotics during educational activities, as well as the impact of the use of digital technologies on the digital competence of young specialists in the pedagogical field.

Within the framework of the study, the network of communicative culture was studied, namely mass open online courses, based on which the globalisation of the educational sphere is developing in the Republic of Kazakhstan. Relying on the development of online courses, educational platforms, digital education and Internet training, the development of a network communication culture among future representatives of the teaching profession is an important aspect and indicator of professionalism in the modern educational process. The result of the research is also the investigation, analysis, and clarification of the need to prepare future teachers for the digital form of school education, since online formats are increasingly relevant within the modern educational system. Future researchers of network communication culture among future teachers of secondary educational institutions need to pay attention to the use of robotic learning systems, and the impact of the use of such technologies on the overall digital competence of teachers of the older generation.

Acknowledgements

This study was funded by the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan (grant no. AP09259047).

Conflict of Interest

The authors declare that there is no conflict of interests.

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Розвиток культури мережевого спілкування у майбутнього вчителя

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Анотація

Актуальність. Сфера освіти у 21 столітті, як і раніше, є одним із ключових аспектів розвитку суспільства, проте сучасні умови змінюють контекст підготовки та діяльності майбутніх учителів. У зв'язку з розвитком цифрової культури та активним використанням онлайн-платформ і курсів у системі освіти актуальним є дослідження розвитку культури мережевого спілкування у студентів педінститутів.

Мета. Мета дослідження – дослідити та висвітлити питання розвитку цифрової освіти майбутніх учителів загальноосвітніх шкіл Республіки Казахстан.

Методологія. Використано такі методи наукового дослідження: порівняння, аналіз, узагальнення, типологічний підхід.

Результати. У результаті вивчення аспектів розвитку культури мережевого спілкування молодих педагогів вдалося розробити лексику провідних термінів, таких як “мережева культура”, а також з'ясувати значення впровадження цифрових форм навчального процесу. Крім того, було з'ясовано основні напрями сучасної освіти: використання соціальних мереж та використання проектів типу ETDSML.

Висновки. У цьому науковому дослідженні розглядаються та аналізуються основні сфери застосування одного з найперспективніших напрямів у цифровій освіті – MOOCs та робототехніки, як важливих освітніх інструментів у навчальному процесі з подальшим цифровим прогресом. Дане дослідження може бути використане викладачами вищих навчальних закладів для розвитку мережевої комунікації викладачів та абітурієнтів, а також для подальшого дослідження культури мережевої комунікації студентів у педагогічних інститутах.

Ключові слова: дистанційне навчання; Інтернет; інформаційне середовище; освіта; цифрова грамотність.