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МРНТИ 14.35.07

https://doi.org/10.51889/2959-5762.2024.83.3.021

Zhankushkov B., ¹* Onlanbekkyzy G., ² Serzhankyzy Zh. ¹

¹Abai Kazakh National Pedagogical University, Almaty, Kazakhstan

² Institute of Early Childhood Development of the Ministry of Education of the Republic of Kazakhstan, Astana, Kazakhstan

ELECTRONIC RESOURCES AS A MEANS OF FORMING THE DIGITAL COMPETENCE OF FUTURE PRIMARY SCHOOL TEACHERS

Abstract

The article considers the issue of the formation of digital competence of future primary school teachers through electronic resources. The concepts of "digital technologies", "digitalization of education", "digital competence", "electronic resources", "digital tools" are defined. The analysis of psychological and pedagogical literature on the research topic is carried out. The authors characterize the digital competence of future primary school teachers, noting that in digital education, teachers should have a high ability to work with the developing digital environment. In order to find effective means of developing digital competence, the authors analyzed the electronic resources used in the

educational process of a higher educational institution. The following electronic resources (tools, platforms and programs) are characterized: SCRUM board, Quizlet, ActivInspire, QR code creation, Canva, Google forms. The authors have developed an algorithm for the formation of digital competence of future primary school teachers and proposed methods to achieve them.

Keywords: digital competence, future primary school teacher, electronic resources, digitalization of education, digital technologies, Higher education institution.

Жанкушков Б.О., $^{1}*$ Онланбекқызы Γ . 2 , Сержанқызы Ж. 1 1 Казахский национальный педагогический университет имени Абая, г.Алматы, Казахстан 2 Институт раннего развития детей Министерства просвещения РК, г.Астана, Казахстан

ЭЛЕКТРОННЫЕ РЕСУРСЫ КАК СРЕДСТВО ФОРМИРОВАНИЯ ЦИФРОВОЙ КОМПЕТЕНТНОСТИ БУДУЩИХ УЧИТЕЛЕЙ НАЧАЛЬНОЙ ШКОЛЫ

Аннотация

В статье рассмотрен вопрос формирования цифровой компетентности будущих учителей начальных классов посредством электронных ресурсов. Дано определение понятиям «цифровые технологии», «цифровизаця образования», «цифровая компетентность», «электронные ресурсы», «цифровые инструменты». Проведен анализ психолого-педагогической литературы по теме исследования. Авторами дана характеристика цифровой компетентности будущих учителей начальных классов, отмечается, что в цифровом образовании у учителя должна быть высокая способность работать с развивающейся цифровой средой. С целью поиска эффективных средств развития цифровой компетентности, авторами проанализированы электронные ресурсы применимые в образовательном процессе Высшего учебного заведения. Даны характеристики следующим электронным ресурсам (инструменты, платформы и программы): SCRUM-доска, Quizlet, ActivInspire, Создание QR — кода, Canva, Google forms. Авторами разработан алгоритм формирования цифровой компетентности будущих учителей начальных классов и предложены методы их достижения.

Ключевые слова: цифровая компетентность, будущий учитель начальных классов, электронные ресурсы, цифровизация образования, цифровые технологии, Высшее учебное заведение.

Б.О.Жанкушков, $^{1}*$ Г.Онланбекқызы, 2 Ж.Сержанқызы 1 1 Абай атындағы Қазақ ұлттық педагогикалық университеті, Алматы қ., Қазақстан 2 ҚР Білім Министрлігінің балаларды ерте дамыту институты, Астана қ., Қазақстан

ЭЛЕКТРОНДЫҚ РЕСУРСТАР БОЛАШАҚ БАСТАУЫШ СЫНЫП МҰҒАЛІМДЕРІНІҢ ЦИФРЛЫҚ ҚҰЗЫРЕТТІЛІГІН ҚАЛЫПТАСТЫРУ ҚҰРАЛЫ РЕТІНДЕ

Аңдатпа

Мақалада электрондық ресурстар арқылы болашақ бастауыш сынып мұғалімдерінің цифрлық құзыреттілігін қалыптастыру мәселесі қарастырылған. «цифрлық технологиялар», «білім беруді цифрландыру», «цифрлық құзыреттілік», «электрондық ресурстар», «цифрлық құралдар» ұғымдарына анықтама берілген. Зерттеу тақырыбы бойынша психологиялық-педагогикалық әдебиеттерге талдау жүргізілді. Авторлар болашақ бастауыш сынып мұғалімдерінің цифрлық құзыреттілігіне сипаттама берді, цифрлық білім беруде мұғалімнің дамып келе жатқан Цифрлық ортамен жұмыс істеу қабілеті жоғары болуы керек. Цифрлық құзыреттілікті дамытудың тиімді құралдарын іздеу мақсатында авторлар жоғары оқу орнының білім беру процесінде қолданылатын электрондық ресурстарға талдау жасады. Келесі электрондық ресурстарға сипаттамалар берілген (құралдар, платформалар және бағдарламалар): SCRUM-тақта, Quizlet, ActivInspire, QR – код жасау, Canva, Google forms. Авторлар болашақ бастауыш сынып мұғалімдерінің цифрлық құзыреттілігін қалыптастыру алгоритмін әзірледі және оларға қол жеткізу әдістерін ұсынды.

Түйін сөздер: цифрлық құзыреттілік, болашақ бастауыш сынып мұғалімі, электрондық ресурстар, білім беруді цифрландыру, цифрлық технологиялар, жоғары оқу орны.

Introduction. Successful self-realization of graduates of higher educational institutions depends on the ability to independently find innovative ways to solve problems and predict their possible consequences, capable of generating ideas and self-education. Today, there is a rapid

development of informatization of all aspects of society, spheres of industrial activity, including the field of education [2].

In this regard, the University faces the task of training highly qualified personnel with modern knowledge, digital skills and abilities aimed at independently obtaining and transforming information in order to solve educational problems. With the development of digital skills, future teachers develop critical thinking skills, independent information retrieval and analysis, the ability to solve problems, as well as generate new knowledge. The specifics of studying at universities consists in a well-thought-out organization of independent work of students, which ensures successful mastery of not only educational material, but also digital skills, creative activity of future teachers.

As you know, the XXI century is the age of digital technologies, characterized by pedagogical trends that radically change the learning process in higher education institutions. Digital technologies require the development of new approaches to the innovative education of future primary school teachers. This will be due to the expansion of access of educational organizations in the country to electronic resources, which will become the basis for the development of digital skills of future specialists in obtaining digital education and active, differentiated mastery of educational material.

The key goal of digitalization of education is to improve the quality of education, train competitive primary school teachers within the framework of various international research programs, including in the field of creating "artificial intelligence" and "volumetric sources".

The use of electronic resources for the formation of personality, intellectual culture, technological competencies of a future teacher in the conditions of informatization of digital Kazakhstan is important for his life in the information society, training professionals who can choose the right direction in the flow of information and find an effective solution [3].

Basic provisions. Currently, one of the urgent problems of modern education is the provision of high-quality education. This problem poses issues of high-quality training of future teachers, in particular primary school teachers, to the education system and the state as a whole. Considering the fact that the XXI century is characterized as informational, requiring the need to create a digital educational environment, the state program "Digital Kazakhstan" states: "In the field of higher and postgraduate education, standard curricula and programs will be updated, taking into account the introduction of the discipline "Information and Communication Technologies" in all specialties based on professional standards and labor market requirements" [1].

Today, the dynamically developing world places new personal requirements on the education system: digital skills, communication skills, working with information, independence, individuality and entrepreneurial inclinations. In this regard, there is a need for future primary school teachers to develop digital competence. The use of electronic resources in the educational process of a higher educational institution contributes to the effective means of developing digital competence.

Materials and methods. In order to determine the importance of the formation of digital competence of future primary school teachers, we carried out an analysis of psychological and pedagogical literature, the result of which determined that the research was conducted at different stages of the introduction of computers into human life. Among the studies devoted to the issues of professional training of a future teacher in the context of informatization of education, one can include the works of G.A.Baklanova, L.V.Bocharova, Yu.S.Branovsky, S.D.Karakozova, V.V.Lapteva, M.P.Lapchika, A.V.Mogileva, E.A. Rakitina, I.V.Roberta, O.G.Smolyaninova, A.A.Temerbekova, L.A.Kharitonova and others. Also of interest are the studies of I.V.Abramova, S.A.Bykova, L.L.Bosovoy, G.G.Brusnitsyna, A.A.Dedyukhina, S.A.Zaitseva, V.V.Kyurshunova, A.V.Molokova, I.B.Mylovoy, M.A.Romanova, I.V.Ryakhinova, L.D.Sitnikova, N.V.Fedyainova and others, who are devoted to solving the problem of improving the preparation of primary school teachers to use the didactic capabilities of information technology [4].

Based on the analysis, it should be noted that the amount of information in digital education is large, and even students can access this information more than a teacher. Therefore, the role of a primary school teacher should change not only in the direction of education, but also in a different way. The teacher must be proficient in the activities of the organizer, the conductor of the

educational and learning process for each student. If so, he will make it clear what each student needs, offer new educational formats, textbook selection, educational and methodological complexes, and information resources. In digital education, a teacher should have a high ability to work with an evolving digital environment.

Digital tools help teachers achieve their educational goals quickly. Given that information is available to everyone today, every teacher should know that he is responsible for the results of his work, based on his experience, views on life, and his own priorities. From this point of view, the words "teacher", "student", "digital society" are always accompanied in harmony, since the mission that the teacher performs forms the personality of the student of the digital society [3].

Results and discussion. In order to develop the above digital competencies of future primary education teachers, the main goal of informatization of education in the Republic of Kazakhstan is to improve the quality of national education through the creation of a unified information environment based on the use of modern digital technologies. The implementation of digital literacy in a digital society will allow for the systematic development of digital competencies of the younger generation and the implementation of a digital economy strategy. Global telecommunications help to develop critical thinking, logic, expressing a point of view. Therefore, in digital education, teachers should be ready to use information from the Internet in a differentiated and effective way to develop students' logical thinking.

The work of every teacher in a digital educational environment requires the ability to use all information and communication technologies in daily work, starting with e-mail and the Internet and ending with other electronic resources. This will greatly simplify the teacher's activities in the field of information retrieval, preparation of various documents, improve the educational process and improve professional qualifications, self-education [5].

And the ability to use these resources in professional activities will allow the teacher's developed digital competence, which is a set of skills for using information and communication technologies and digital media in the process of setting and solving tasks related to obtaining knowledge necessary for processing and working with information, learning, socialization and expanding available opportunities.

In order to increase the digital competence of future primary school teachers, we have made a selection of electronic educational resources applicable in the educational process of Higher education institutions, shown in Figure 1:

Program	Brief description
SCRUM board	The SCRUM methodology allows students to develop self-organization skills. The SCRUM board consists of columns, stickers with tasks moving along them
	as they approach the "done" state.
	Columns:
	"It is necessary" – not just ideas, but specific tasks that need to be done this week; "To do" are tasks for the day;
	"Check" is an intermediate column where the child moves the (in his opinion) done things;
	"Done" – completed tasks after appropriate verification.
	The use of a SCRUM board allows the teacher and students to clearly draw up a plan for, for example, one quarter and, as they study and master the topics, mark them on the board. It will help each student to track the degree of his mastery of the material [6].
Quizlet	Quizlet – this is a free service that makes it easy to remember any information that can be presented in the form of study cards.
	All that is required is to find in the database or create interactive material — your own flashcards, adding pictures and audio files to them and then perform
	exercises and play games to memorize this material

Figure 1. Electronic educational resources

	- In the "flashcards" mode, students see all the flashcards, turn them over to repeat the terms and definitions;
	- In the "writing" mode, a definition or picture of the term will be given and it
	will be assessed how well the student knows the material and whether he makes
	mistakes in writing;
	- In the "spelling" mode, it is necessary to register what you have heard.
	-In the "testing" mode, different test variants are automatically created [7].
ActivInspire	ActivInspire – This is Promethean's new software for teaching and learning
	using a computer and interactive whiteboards.
	Advantages:
	-implement the principle of visibility;
	-highlight important points and draw attention to them;
	-link common ideas or show their differences and demonstrate the course of
	reflection;
	ActivInspire provides teachers with the opportunity to develop new interesting
	lessons and evaluate the knowledge of both individual students and groups, as
	well as the entire class.
Creating a QR code	The QR code in the lesson allows you to:
	-the use of personal gadgets in educational activities;
	-differentiation;
	-increasing interest in learning;
	-improving teamwork skills;
	- expanding the cultural horizons of students;
	The specifics of working with QR:
	-control over information (the teacher will use coding to "suggest" the object of
	information);
	-speed (Internet helps to solve the problem "here and now" – active link-QR
	code);
	-Fun and entertainment (QR code can be used as an element of the game in the
	lesson);
	-personal settings (the ability for students to create their own QR code on the
	topic of the lesson).
	Website for free QR creation
	https://qrcode.tec-it.com/ru
Canva	The Sanva online editor is an application with which you can make
	visualizations for websites, collect presentations, work with photos and videos.
	Visual communication and collaboration are important tools for learning:
	-increases interest through original content;
	-provides effective feedback on a single resource;
	-helps students to develop skills in working with digital resources.
Google forms	Google forms allows you to create test questions, presentations, Google docs and
	spreadsheets in real time.
	Advantages of Google forms:
	- simple creation of forms (choosing different types of questions, changing their
	sequence and answer options is no more difficult than inserting a list into a
	document);
	- extensive options for creating surveys and forms (choose colors, images and
	fonts to make the forms look attractive and match your style);
	- analysis of responses and automatic summaries (charts based on survey results
	are updated in real time. In addition, the source data can be opened in Google
	Sheets for deeper analysis and automatic processing).
	Instruction manual: How to create a test with answers:
	https://online.spbu.ru/wp-content/uploads/2020/05/Sozdanie_testov_v_gugl.pdf
	intposition in the content uploads/ 2020/05/1502daine testov v gugt.pdf

The proposed electronic educational platforms and applications will speed up and simplify the educational process, reduce the burden on students and teachers, and also provide an opportunity to increase competitiveness, improve the quality of life of the population, and most importantly, improve the quality of education. Future primary school teachers should be internationally competitive in various fields, including artificial intelligence and the creation of voluminous data.

In this regard, we have proposed the following algorithm for the formation of digital competence of future primary school teachers and proposed methods to achieve them:

- Integrating digital technologies into the learning process: Teachers can use various electronic resources such as educational websites, applications, interactive textbooks and training programs to create engaging and effective lessons;
- Training in the use of electronic resources: students can take special courses and seminars on the effective use of digital tools in educational activities. This includes training on the use of interactive whiteboards, educational software, online learning platforms and other tools;
- Creating learning materials: Students can create their own digital learning materials, such as presentations, video tutorials, quests and online tests, which will allow them not only to learn the material more deeply, but also to develop skills in creating digital content;
- Training in information literacy and critical thinking skills: it is important to train future teachers to analyze information, verify its reliability and evaluate its quality, especially in a digital environment where access to information is wide;
- Practice using simulators and virtual tools: Using virtual environments and simulators can help future teachers learn how to apply digital technologies in real practice without having to access physical resources;
- Cooperation and exchange of experience: students can participate in projects together with other students and teachers, sharing experiences and best practices in the use of electronic resources in the educational process;
- Feedback and self-assessment: It is important to provide students with feedback on their use of electronic resources and encourage their self-assessment and self-reflection to continuously improve their skills.

According to the developed algorithm, in order to implement in Higher education a system of measures for the formation of digital competence of future primary school teachers through electronic resources, criteria, indicators and levels of formation of digital competence of future teachers will be developed, experimental work will be organized and conducted.

Conclusion. The analysis of psychological and pedagogical literature shows the need to pay special attention to the formation of digital competence of future primary school teachers. An effective means of developing these skills will allow the use of electronic resources in the educational process of the university.

Digital technologies make it possible to create an environment saturated with a variety of electronic educational resources, almost unlimited in content structure. At the same time, the future teacher independently (perhaps with the help of teachers, tutors, etc. or adaptive learning systems) solves a number of important educational tasks. The first of them is the understanding and formulation of individual educational needs and the formation of an individual educational route on this basis. In the future, he must decide whether his educational direction is correctly or incorrectly built, in the case of remote development of online courses, the future teacher is required to be able to independently organize his educational activities at all stages of the educational principle.

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IRSTI 14.37.07

https://doi.org/10.51889/2959-5762.2024.83.3.022

Sovetkanova D., ^{1*} Assilbayeva R., ² Dzumagaliev A. ³

 ^{1*}Abai Kazakh National Pedagogical University, Almaty, Kazakhstan
 ² Caspian University of Technology and Engineering named after Sh. Yesenova, Aktau, Kazakhstan
 ³M.Utemisov West Kazakhstan University, Uralsk, Kazakhstan

UPGRADE OF PROFESSIONAL SKILLS OF UNIVERSITY TEACHERS BASED ON MICROQUALIFICATION

Abstract

The integration of Kazakhstan into the world political and economic space makes it necessary to promptly respond to the ongoing fundamental changes. At the same time, it is natural to modernize the process of training pedagogical specialists. An effective way to solve the problem is associated with the revision of the content of educational programs, the introduction of didactic innovations. Such a transformation of education is influencing a new trend – to take the first steps towards the introduction of short training programs (microcalifications) and systems called micro degrees. The use of such education in higher schools and in the practice of subsequent steps will ensure that future specialists meet their personal interests and needs, intentions, and, secondly, they will be useful to society by mastering new skills required by the time in an accessible and short time.

The purpose of the scientific article is to study and develop a methodology that allows to significantly improve the professional skills of university teachers using the principles of microqualification, contributing to improving the quality of the educational process and training of students as a result of professional retraining of a university teacher.

Keywords: Micro-qualifications, short training programs, integration, modernization of professional skills, professional experience.