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POSSIBILITIES OF USING DIGITAL EDUCATIONAL RESOURCES IN THE TEACHING PROCESS OF PRIMARY SCHOOL

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Abstract. Today, one of the urgent problems of primary school is the digitization of the teaching process. It is important to form themselves as competent specialists for primary school teachers from a professional point of view, adapting schoolchildren to the changing information society, effectively organizing digital educational resources in accordance with the requirements of modern society. Digital educational resources serve as ready-made multimedia interactive products aimed at solving didactic goals and specific learning tasks for teachers. In this direction, the aim of the research is to propose a model of training for future primary school teachers by analyzing the possibilities of using digital educational resources in primary school teaching process.

A teaching model designed to make the educational process interesting and meaningful by creatively using digital educational resources was presented. In the article, the meanings of the terms «digital educational resources», «readiness of the future primary school teacher to use digital educational resources» have been analyzed from scientific and methodological points of view. Practical experiment work, directions for the special course program «Methods of using digital educational resources in primary schools» was offered aimed at mastering digital educational resources as a means of self-professional development of future specialists. The research used methods of theoretical literature analysis and a survey of digital educational resources as an empirical method. There is an opportunity of using the research results in the methodology of effective use of digital educational resources in the training of future primary school teachers of the country.

Keywords: digital educational resources (DER), digital education, multimedia tools, interactivity, future primary school teachers, digitalization, the educational process of primary schools, digital literacy

Basic provisions

Recently, the process of creating and using online resources of open general education, general development, from individual tasks to complete courses and modules for the formation of assigned competencies, is being actively carried out. The personal flexibility and competence of a personality in the 21st century should be formed in all educational activities, starting from primary school. Digital literacy is the willingness and ability to confidently and effectively use digital technologies in all areas of human life.

Introduction

Digital literacy is the basis of security in the information society, the most important knowledge of the 21st century, one of our main topics. The use of digital technology opens the way to increase the quality of people's lives. The goal of creating a digital platform that improves the quality of life of the people is actively involved in the implementation of the program proposed in program of «2020-Digital Kazakhstan». We mainly consider the main aspects of this state program to increase the state economy competitiveness through the use and development of digital technologies as the main direction of implementation. In theessence of digitization in higher education, the issues of professional training through digital educational means is becoming more urgent. As the President of the country, Kassymzhomart Tokayev paid attention to the digitalization of education and all spheres as not a goal, but a means to achieve absolute superiority of Kazakhstan. The whole process requires consistency, order and a comprehensive approach [1].

Digitization technologies are new tools of a wonderful world that humanity has never experienced before. That is, these technologies are currently being developed. They are already leaving behind the very information technology that we admire. Humanity is entering the magical world of digitization not by years, but by months, even by weeks and days. In addition, In his address dated September 1, 2021, the President of the Republic of Kazakhstan K. Tokaev to the people of Kazakhstan entitled «Kazakhstan in a new situation: a period of actions» mentioned the online education platform as one of urgent problems in the education field during the current pandemic [2].

Digitization of higher education in Kazakhstan can not be ignored in the process of new reforms. Today the educational system is conducted in three main directions: digitization of the educational context, digital content of educational programs and digitization of educational management. The modern tends of teaching in future higher schools is associated with teaching the courses including IT subjects to cloud education systems. Students can work together on homework assignments online. Today's primary schoolchildren are not the same as they were twenty or thirty years ago. In order to awaken their interest in learning, elementary school teachers need to resort to modern forms and methods of education. Application of digital means and resources (DER) is excellent for these purposes. In all schools students learn finding, selecting and using the information they need for the purpose of study in relatively short periods of time. Reality changes too quickly and therefore the modern school faces a number of challenges that require the teacher to develop new qualities and skills. Which penetrate deeper and deeper into a person's life, and skills and abilities of working with informational resources determines the education and competence levels of the learners. We need to develop these skills from an early stage when students start their learning at primary schools. They need to learn the digital means, how to work with them. We need to replace some aspects of traditional methods into digital methods.

Sometimes this leads to misunderstanding on the part of parents and dissatisfaction among teachers, because it requires learning new skills and abilities. DER are computer-based products. DER are understood as information sources containing graphic, textual, digital texts, musical apparatus, video creation, photoshops focused on implementing the main objectives of teaching and learning. That is why the ability to effectively application of DER in teaching process, the formation of future teachers' readiness of applying DER is an urgent problem arising from today's demands. As daily practice shows, their main value is to enable teachers to make qualitative changes to the content, methods and organizational forms of education in accordance with the demands of today's digital society. In this regard, we can definitely say that DER are an effective tool in the process of digitalization of education during the transition from information to digitalization today.

The process of digitization is focused on increasing learner competitiveness, improving the quality life of population throughout the country, accelerating and simplifying the educational process, and reducing impact on schoolchildren, teachers, and parents. Re-digitalization of the social paradigm of people's life, it opens the possibility to expand people's thinking field and acquire new knowledge. Digital education is connected with networking, use of social media as DER and holding online webinars online classes, training sessions. Typically, DER is associated with working with social and network technologies, that can be found as flexibile, productive, mobile, interactive and oriented towards the receptions of media flows.

A unified platform of online courses allows everyone to quickly adapt to information flows, evaluate information, make decisions in special situations, in one word, mastering the skills and competencies of 21st century.

The main value of DER in modern world is that it is not only teaching means, but its is considered as an intellectual environment with update opportunities: flexible of using in convenient time, designing personal learning routine, making the process from application into application of modern tools.

In conclusion, digitalization for teachers and learners of primary schools is means for improving the quality education. It is intended for preparation of the young generation to be competitive of «artificial intelligence» and working with «big data». The teachers of primary schoolchildren must be internationally competitive in a variety of fields, including artificial intelligence and big data. Digitization, on the one hand, acts as a unifying and integrating initiative, and on the other hand, as a completely new learning tool for the community of educators and every member of the society in general, there are great difficulties in mastering it. First of all, the final penetration of digitalization into all spheres of everyday life places new demands on the improvement of individual qualitative qualities of a person. Among them, first of all, it demands the development of flexible skills (soft skills), which are becoming a special demand of the modern social environment, while making changes to its cognitive functions.

Today, the main purpose and content of digitization of education in the country is to

increase education quality by creating unified environment of education information. It needs to use modern advanced information technologies and DER. In its turn, it requires real reconstructions in their professional activities, setting new requirements for the qualifications and training level of future teachers of primary schools. Because for modern society, the need for a creative, competent specialist who is not only functionally prepared for professional work, but his adaptation to rapidly changing social conditions is increasing.

Sarsenbaeva (2021) describes the speed of digitalization in the country and conclude that Kazakhstan has full potential to become a promising country in the 4.0 industry development. For its active implementation, first of all, it emphasizes the need for digitalization of education, because the effect of this process on the quality of education is proven by the fact that it allows students knowing the digital world, especially modern technologies [3].

According to Gallardo-Fernández, L. Monsalve Lorente & M. Aguasanta-Regalado (2021) the technological modelling focuses on tablets management, computer applications, digital interactive board, availability of the digital resources in the classrooms and teacher's own professional training [4].

If we look into its history, the term «digitization» appeared because of the rapid information development and communicative technologies. According to I. Khairova, E.O. Gabdullina (2020) using the DER and its implementation by individual educational routes has increased its completion efficiency, forms of education and developed students' subject competencies and skills, student motivation was improved, it was subjected by computer literacy which promoted the development of student independence [5].

The main phenomenon determining the modern digital culture includes a personal computer and other types of digital means, like: artificial intelligence, computer graphics, Internet itself, systems and applications of software, virtual reality systems, computer games, digital formating of traditional communication means (booklets, audio and video recordings, photos, digital television and etc.), technological works of art. These trends are entirely online, creating ambiguous trends that are often viewed negatively by traditional audiences. In the digital era, the problem of creating a special type of culture is becoming relevant (Galkin, 2013) [7].

Generally, the meaning of DER consists of simple «paper-based» sources of information (books, magazines, newspapers, textbooks, teaching aids, etc.) and content material distributed by means of electronic media (such as radio and television), as well as recent arises from the concept of traditional pedagogical software, which has changed significantly in thirty years.

Aidarbekova, K., Abildina, S., Odintsova, S., Mukhametzhanova, A., Toibazarova, N. (2021), formulated the requirements for a web-oriented training course can be characterized according to technical: efficiency, usability, cross-platform, accessibility, navigation and communication, including content design; pedagogical: division into small

academic units (lessons) and logically discrete educational steps, structured presentation of information, accessibility, explanation and etc. features [8, p.193].

Today, it is not possible to create the lessons without DER in the classroom, therefore, the teacher should be fully familiar with information technology and be able to work freely on the Internet. Here, the teacher not only provides education, but also guides the students to find sources of supplementing knowledge on their own, to be able to realize themselves. Therefore, we need to take into account that it requires a whole pedagogical process created in accordance with the new model of education based on modern information technologies, which not only facilitates the access to information, but also allows to create a new education system.

Most teachers note the wide possibilities of electronic educational materials, because they allow to solve most didactic objectives effectively:

- provision of information and reference;
- skills and abilities training;
- visual demonstration of any phenomena and process;
- educational information acquaintance;
- supporting forms of occupation;
- monitoring and evaluation of knowledge level.

Digitization of schools means creating convenient and effective DER for all participants involved in teaching process: students, their parents, teachers, administrations of the educational system. School libraries have become information and computer centers. Here, we can site as: online courses and virtual labs, online educational content for eah participant open in any time. The learning process will be linked to each learner's ID, which will enable assessment and grading. Additionally, DER in the digitization of learning process is a kind of synthesis of the real and digital world in the optimal balance of human interaction and virtual environment.

Kazakhstani scholars, J.I. Sardarova and et al. (2022) «the main advantages of digital technology are that it helps the teacher with extensive content, i.e. visual presentation of digital objects through a multimedia projector; organization of students' work with DER to be individual, research, creative; significant increase of students' interest in lessons; the possibility of obtaining additional information of an encyclopedic nature» [8, p.51].

Through access to DER and large-scaled information, individual world view can be expanded, effectiveness is provided for self development and sel--realization. The rate of continuous information flow assists and leads to massive digitization situations of social environment and the individual lives [9].

As experience proves, the possibilities of digital educational resources are wide and their multifunctional role is described in the following content as an effective means of visualization in teaching:

- an auxiliary teaching means in preparation of practical exercises for students;
- a tool for surveying and monitoring students, as well as monitoring and evaluating

homework;

– ability to work with schemes, tables, graphs, conventional signs;

– a tool for editing texts and correcting errors in students' creative works.

Having analysed the main features and advantages we developed the model of DER for future primary school teachers (Figure 1):

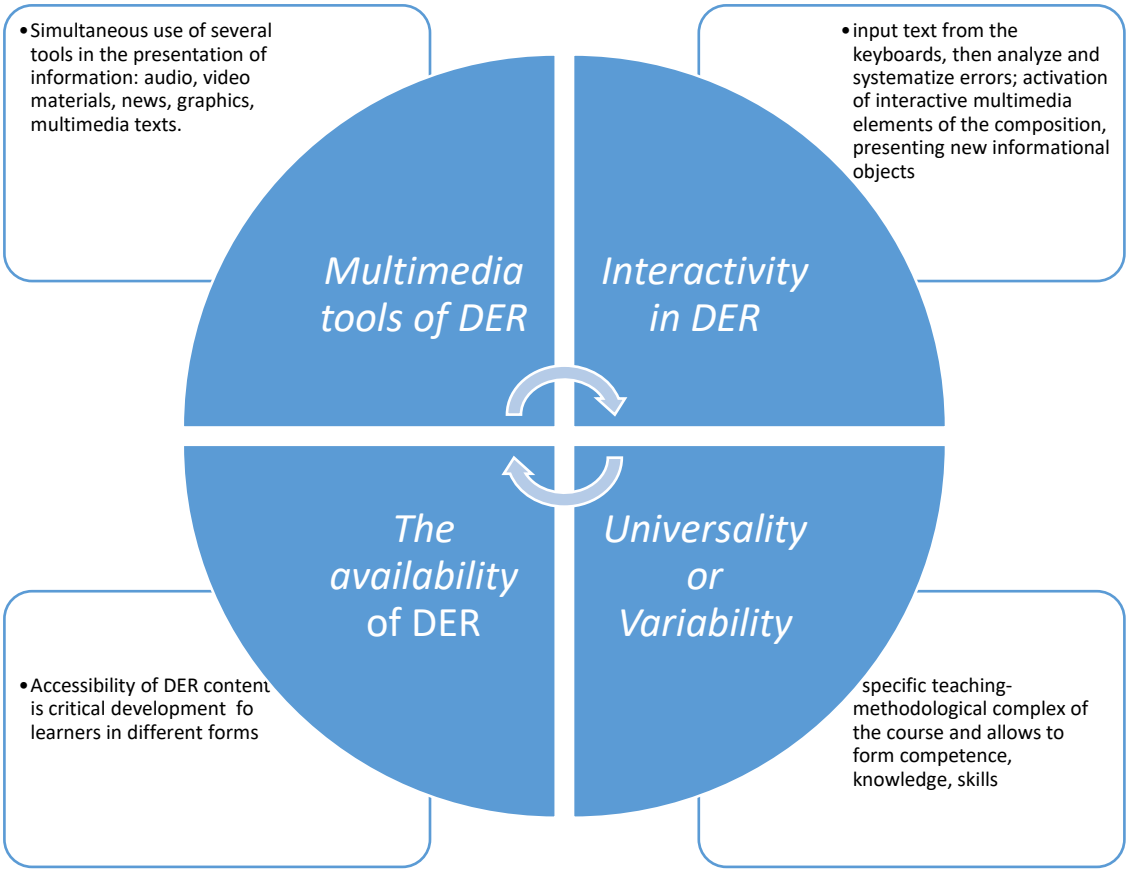

Figure 1 – Model of using DER for primary school teachers

The model of DER we proposed considers the functions and peculiarities of needs of primary schoolchildren and primary school teachers. For future primary school teachers, DER is a teaching tool as it has a number of advantages that determine their advantages compared to traditional teaching tools, which are:

1. *Multimedia tools of DER.* Simultaneous use of several tools in the presentation of information: graphics, text, video, photo, animation, sound effects, high-quality sound accompaniment.

2. *Interactivity in DER* is provided by several selections from set elements; input text from the keyboard, then analyze and systematize errors; activation of interactive multimedia elements of the composition, presenting new informational objects in

audiovisual form; connection of objects in order to organize a certain system. These features of DER ensure that the learner works at a pace that is convenient for him and helps to take into account the individual perception and individuality of his cognitive activities.

3. *The availability* of DER ensures that they are available at a convenient time and in social media interaction with any user. Accessibility of DER content is critical for children with special educational needs, especially home-schooled learners. This ensures the implementation of the rules of the DER, according to which each student (including gifted children and children with special educational needs) should be provided with consideration of different organizational forms and individual characteristics.

4. *Universality or Variability* is understood as the presentation of a fragment of the educational content with orientation to different educational-methodical complexes and educational programs. The quality of DER is not strictly related to the specific teaching-methodological complex of the subject and allows to form knowledge, skills on the material that can be included in the lessons of any teaching-methodical complex.

Manuel Area-Moreira, Jesús Rodríguez-Rodríguez, José Peirats-Chacón, Pablo Santana-Bonilla (2023) confirm that " the technical and pedagogical quality of self-produced materials is often poorer than those available from other sources. The main reason teachers give for self-producing materials is that the available commercial and institutional materials do not meet the students' specific needs [10, p. 1674].

However, when creating an educational process based on the use of any DER, it is necessary to take into account the basic rules of the concept implemented in a certain textbook or educational-methodical complex on a subject. It mans choosing DER that do not contradict the leading ideas of the authors, based on this, the work of learners - should be guided by creating an action. Each set of educational centers necessarily includes the headings «Textbook Contents», «Lesson Planning», «Training Tasks» and «Methodological Recommendations». We would like to dwell on the types of demonstration materials.

- Posters containing rules that can be printed:
- Musical voice accompanied tools.
- Videos where soundtrack creates with emotional backgrounds.
- Interactive tools;
- Presentationa with slides, drawings and captions
- Materials for practical work;
- Digital texts and etc.

D. Budantsev, T.V. Nikulina, E.B. Starichenko stated that technological means as computerized level depends on technical equipments. They require the schools creating information environment [11, 12].

It is called as «computer-based universal education», a computer working in various fields of student activity. Let's summarize, modern information resources in primary

schools should be able to solve the following educational means of DER and their content (Table 1):

Table 1 – The content and educational means of DER for primary schoolchildren

	Objectives	Content
1	Textbook Contents	knowledge, comtpetecnies, skills and abilities in computer science to a certain level, despite the methodological and technical support on teaching IT
2	Lesson Planning	creating methodological conditions for primary schools in mastering basic information culture
3	Training Tasks	Creating interdisciplinary connections forming a holistic perception of learning, rather than a set of separate knowledge
4	Methodological Recommendations	Cultivating the culture of creative communication, stimulating the experimental and research activities, introducing a higher level of motivation

It is quite obvious that it is impossible to solve this problem using only traditional teaching methods. We need to look for effective methods and technologies. Tavadyan A.M., Zima V.A., Husainova N.B. consider DER one of the most effective technologies. Using DER in the classroom enhances positive reactions and motivation activating students' cognitive activity. The DER provides and attracts to the use of vast materials from the internet sources. It doesn\t take much time for students and teachers [13].

DER is a reliable assistant and adviser using digital platforms that contain information structured for organizing teaching process. From our own experience, we are convinced that using DER at primary school contributes to enrichment memorization of multimedia and electronic materials.

Based on the literature review, we can make the following conclusions:

- DER are fully interactive products aimed at achieving didactic goals or solving specific problems of using the effectiveness of computer technologies.

- With help of a teacher using DER, we mean the skills which describe the effective implementation of services of multifaceted educational processes in professional activities, based on digital technologies.

Materials and methods

The analysis in theory of research (comparative analysis, systematization of data, summarizing the philosophical, pedagogical, scientific-theoretical works); empirical analysis (analysis of methodical documents, survey method, practical-experimental method); statistical (mathematical-statistical processing and analysis of experimental results) methods, survey of knowledge about digital educational resources; diagnostics of partial readiness for self-professional-pedagogical development were used in the research. The experiment was carried in three: introductory, formative and concluding stages. During the formative experimental analysis, the research was carried out with using the

methodology of N.P. Fetiskin, V.V. Kozlov, G.M. Manuylov's «Diagnostics of realization of needs for self-development» in defining the levels of future specialists and primary school teachers.

Results

Practical and experimental work was organized in the period 2022-2023 on the basis of the Karaganda University named after E.A.Buketov with 3rd year students of the specialty «Pedagogy and methods of primary education». The experiment was carried out during the pedagogical practice at school. One of the main tasks during the identification experiment was to determine the actual state of training future teachers for using digital educational resources. The experimental work was conducted in accordance with three stages, and a total of 32 students participated in it, 16 students - the controlled group and 16 students - the experimental group. Accordingly, the following methods were selected: observation, conversation, «knowledge about digital educational resources» survey; N.P. Fetiskin's «Diagnosis of realization of needs for self-professional development» (Fetiskin, 2002) [12], N.R. Molochnikov's «Assessment of opportunities for self-development» (Molochnikov, 2002) [13].

It has become customary that the lesson of consolidating the studied material is built on the basis of testing. Students perform test tasks, having received them for individual use in printed form, or working while sitting at the computer. Very often, tests are projected on the screen through a multimedia system, and students fill out only the answer card. The most important thing is to create a «situation of success» so that the student is in a comfortable state and directs all his efforts to solving the task. This is especially important for children with low self-esteem. When conducting dynamic educational games with the class, students with reduced speed of thought processes can perform similar tasks at the computer. For example, for lagging students, it is possible to conduct a computer test instead of a traditional test on the studied topic. Students who missed classes due to illness can be invited for individual work at the computer for «oral account», spelling practice or a short repetition of what they have learned.

Monitoring of students and interviews organized with them, surveys revealed that internal and external factors influence the readiness of students to use DER. Enthusiasm of the learner for internal reasons (100%); self-doubt, self-confidence (55.8%); self-awareness, lack of accurate recognition of one's strengths and weaknesses (35.7%); critical thinking, creative work was low (41.2%). External reasons are the financial situation of students (75%), lack of group and peer support (39.8%), inability to use time efficiently (82%), lack of subjects based on the methodology of using digital technology and digital educational resources in daily practice (55 %), master classes for students, shortage of advanced education courses (52%), insufficient classrooms equipped with innovative technologies for continuous education at the university level, CBRN (90%). Also, in the answers to the digital survey «Digital education resources in primary schools», the answers «knowledge about DER expands my worldview» and «helps me

realize myself» were received. In addition to those who think that digital educational resources have an influence on improving the quality of education in the university and understand the perspective of DER in the educational process, there are also views that negatively perceive the enormous possibilities of the technology that is in demand today.

The following survey was conducted by the experience of N.P. Fetyskin «Diagnostics of realization of needs for self-professional development» survey consists of 16 questions. As a result of the answer, a score of 55 and more indicates that self-development is active, 54% future teachers testified that the system of self-development has not been formed, 51% result indicate that they have stopped at the stage of self-development.

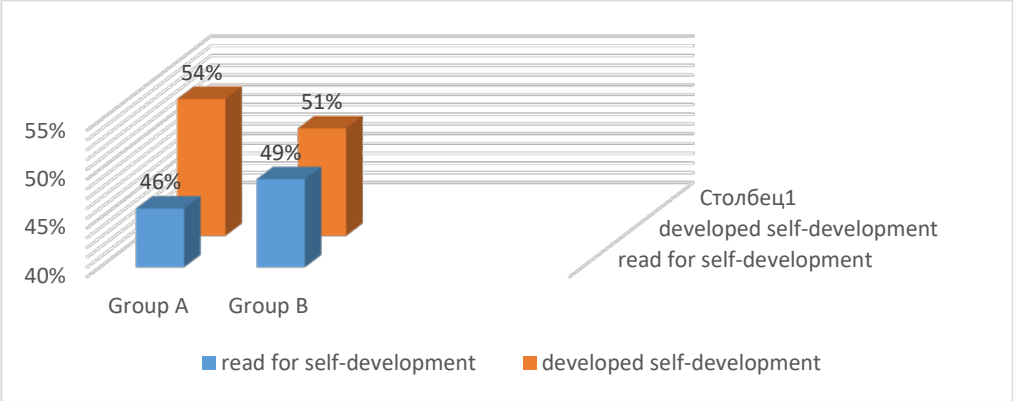

Figure 2- Indicators of the result of determining the realization of needs for self-professional development according to the identification experiment

According to the survey, 46% of the control group was active in self-professional development, 54% showed that the system of self-development was not formed. According to the experimental group, 49% were active in self-development, 51% indicated that the system of self-professional development was not formed.

A graphical representation of these indicators is shown in Figure 2 and in Table 1.

Table 2 - information on the diagnosis of needs for self-professional development (experiment of identification)

diagnosis of needs for professional development	CG	EG
Self-activity and self-development	46%	49%
Low degree of self-development	54%	51%

The following methodology according to N.R. Molochnikov's diagnostics, which is aimed at determining the levels of «Assessment of self-development opportunities» consists of 18 questions. As a result of the answer, the student who scored 18-25 points

has the «very low» level, and the student who scored 51-54 points has the «highest» level. The survey «Assessment of self-development opportunities», 15% of the control group showed «low», 25% - «above average», 38% - «average», 22% - «high» levels. And according to the experimental group, 20% - «low», 20% - «above average», 40% - «medium», 20% - «high» levels. A diagrammatic representation of these indicators is presented in Figure 3 and in the table.

The purpose of our course is mastery of DER by future specialists as a means of professional development. The course on the topic «Digital educational resources for primary school teachers» consists of a series of theoretical and practical sections.

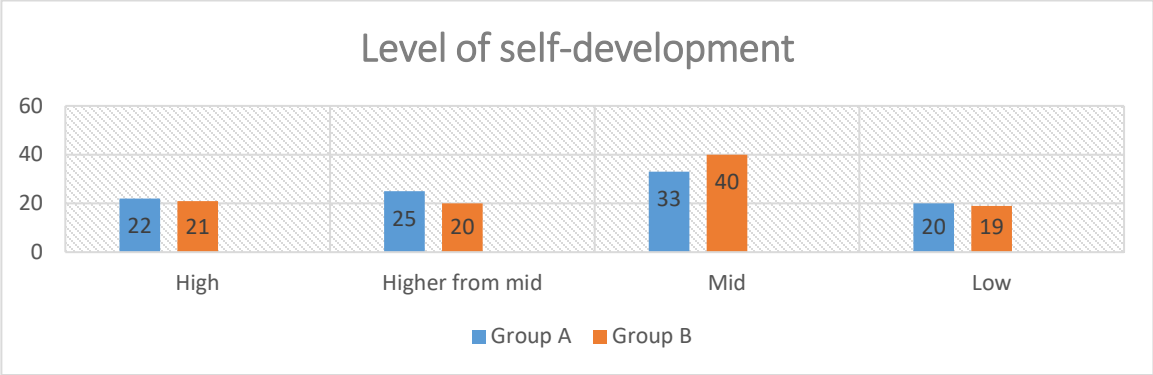

Figure 3 - Indicators of assessment of self-development opportunities according to the discovery experiment

The research results and the experiment showed that future specialists lack complete information, knowledge, and skills on using digital educational resources for professional development, and the levels of self-evaluation and self-realization are also not at their level. This, in turn, proved the need for a course aimed at filling these gaps and increasing the professional-pedagogical development of future specialists. In accordance with this, during the formative experiment of the research work, a special course program on the topic «Digital educational resources for primary school teachers» was compiled and put into practice.

Table 3- Summative assessment of self-development

Knowledge of DER	CG	EG
Low	22%	21%
Mid	25%	20%
Higher	33%	40%
High	20%	19%

As we see, the course program and pedagogical practice for the target groups showed

better results in the end of experiment. The levels of self-development was indicated from 22% to 33% in control group, in experimental group it exceeded from 19% to 40%. This proves the effectiveness of the course «Digital Educational Resources for primary school teachers» and the innovative technologies and advanced methods used during practical work.

Avcı, S. (2022) wrote that through examining the factors affecting teachers' use of digital learning resources, the teacher can dispose of this time at his own discretion, choose which tasks the class will perform in digital platforms. It is important not to abuse DER. On the lessons of work, the world around the teacher, and not to refuse exercises and exercises that develop fine motor skills in schoolchildren. Otherwise, electronic textbooks can be very useful in any lesson [15].

In conclusion the model and experimental verification of results helped to formulate theoretical and practical results of our experiment.

The structure of the theoretical part: normative and legal acts that are guided by the education digitalization; its pedagogical basis and methodological aspects of using DER; actual problems of training a competitive specialist who realizes himself in the conditions of a changing information society; the content of education in the periods of digital Kazakhstan;

– the current state and future of using DER in primary schools;

– world experience in the use of DER in the educational system;

– psycho-pedagogical aspects of professional development and implementation in accordance with «life-long learning» paradigms;

– structure and capabilities of DER.

Content of the practical part: content and features of lesson planning with DER; practices of planning didactic opportunities of innovative technologies on the basis of digital educational resources; use of digital educational resources in professional creative work; the method of using DER in the study and organization of students' independent work and activities.

In this regard, the following objectives were set before the formative experiment:

– Supplementing the theoretical knowledge of future specialists necessary for professional creative personal development;

– full use of the various possibilities of DER in education process;

– extract the results of formative experiments and develop practical recommendations.

Thus, lessons with multimedia support and DER allow teachers involvement of the learners in cognitive process, to switch his attention to another type of activity in time. The combination of video, audio and text material, complex coverage of the topic expands the child's horizons, contributes to his creative thinking, and increases motivation to study.

Discussion

In general, DER expand the teacher's opportunities to introduce students to an exciting world, where they will have to independently obtain, analyze, present and transmit information to others; they significantly increase the didactic and personality-oriented parameters of the educational process. DER are an effective tool for digitization of education. We can say that in today's period of transition from information to digitization. In addition, the literature analysis on the studied problem, the world experience of using DER in classrooms. The daily practice show that the following pedagogical goals can be achieved with the help of DER teacher can improve the work of the educational system. DER assists expanding interdisciplinary connections; increasing the efficiency and education quality; initiates search for necessary information and increasing the learners' cognitive activities.

Conclusion

Digital educational resources are a means of obtaining predictable results. In particular, they help ensuring the flexibility of the educational process that assists higher results foe learners and the training mobile highly professional specialists:

– DER assists to overcome obstacles in teaching environment for teachers: speed of mastering programs, choosing a teacher, training forms and methods;

– development of the learner's personality; preparation for a rapidly changing life in the information society.

The teacher is a navigator who helps to create the necessary trajectory of modern quality education in the digitalization environment. In the case of digitization of education, the qualitative implementation of training through DER requires the following activities:

– digital Kazakhstan is demand of DER as means of teaching, wide application of DER is necessary in all educational process;

– special elective courses on DER is required for mastering theoretical and practical knowledge on applying DER in higher educational institutions in order to master the enormous possibilities of digital educational resources;

– revitalizing the production of educational and methodological textbooks, manuals, teaching aids in the Kazakh language for using DER at higher educational institutions;

– wide organization of webinars, online lectures, scientific-practical seminars for the purpose of exchange of opinions and experience accumulation on world experience of using DER in the educational system.

In addition, the value of digitization of education is primarily the need for competent teachers who are fluent in ICT and are oriented to continuous learning. DER can be the basis for revitalizing their research and creative work. In addition, ICT are of great importance in ensuring the education quality and the necessary conditions for the inclusion of students with special needs in the context of intensive implementation of

DER. Because modern DER are becoming increasingly important for the educational environment, taking into account the needs and capabilities of all subjects.

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САНДЫҚ БІЛІМ БЕРУ РЕСУРСТАРЫН БАСТАУЫШ МЕКТЕПТІҢ ОҚЫТУ ҮДЕРІСІНДЕ ПАЙДАЛАНУ МҮМКІНДІКТЕРІ

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Аңдатпа. Бүгінгі таңда бастауыш мектептің өзекті мәселесінің бірі- оқу үрдісін цифрландыру. Бастауыш мектеп мұғалімдері қазіргі қоғамның талабына сай сандық білім беру ресурстарын тиімді ұйымдастыра отырып оқушыларды өзгермелі ақпараттық қоғамға бейімдей отырып кәсіби тұрғыдан өзін құзыретті маман ретінде қалыптастыру маңызды. Сандық білім беру ресурстары мұғалімдерге дидактикалық мақсаттар мен белгілі бір оқу міндеттерін шешуге бағытталған дайын мультимедиялық интерактивті өнім ретінде қызмет етеді. Осы бағытта, зерттеудің мақсаты - сандық білім беру ресурстарын бастауыш мектептің оқыту үдерісінде пайдалану мүмкіндіктерін талдау арқылы болашақ бастауыш мектеп мұғалімдеріне дайындау үлгісін ұсыну.

Сандық білім беру ресурстарын шығармашылықпен пайдалану арқылы оқу-тәрбие үдерісін қызықты әрі мазмұнды безендіруге арналған оқыту үлгісі ұсынылды. Мақалада «сандық білім беру ресурстары», «болашақ бастауыш мектеп мұғалімінің сандық білім беру ресурстарын пайдалану дайындығы» туралы ұғымдар ғылыми-әдістемелік тұрғыдан талдау тапты. Тәжірибелік эксперимент жұмыстары болашақ мамандардың сандық білім беру ресурстарын өзін-өзі кәсіби дамыту құралы ретінде меңгеруіне бағытталған «Бастауыш мектепте сандық білім беру ресурстарын қолдану әдістемесі» атты арнайы курс бағдарламасына бағыттар ұсынылды. Зерттеуде теориялық әдебиеттерге, сандық білім беру ресурстары туралы сауалнамасы эмпирикалық әдіс ретінде қолданылды. Зерттеу нәтижелерін

елімізді болашақ бастауыш мектеп мұғалімдерін даярлауда сандық білім беру ресурстарын тиімді пайдалану әдістемесінде қолдануға мүмкіндік бар.

Тірек сөздер: сандық білім беру ресурстары (СББР), цифрлық білім беру, мультимедиялық құралдар, интерактивтілік, болашақ бастауыш мектеп мұғалімдері, цифрландыру, бастауыш мектептің оқу процесі, цифрлық сауаттылық

ВОЗМОЖНОСТИ ИСПОЛЬЗОВАНИЯ ЦИФРОВЫХ ОБРАЗОВАТЕЛЬНЫХ РЕСУРСОВ В УЧЕБНОМ ПРОЦЕССЕ НАЧАЛЬНОЙ ШКОЛЫ

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Аннотация. В данный момент одной из актуальных проблем начальной школы является цифровизация учебного процесса. Учителям начальных классов важно сформировать из себя компетентных с профессиональной точки зрения специалистов, адаптирующих учащихся к меняющемуся информационному обществу, эффективно организующих цифровые образовательные ресурсы в соответствии с требованиями современного общества.

Цифровые образовательные ресурсы представляют собой готовые мультимедийные интерактивные продукты, направленные на решение дидактических целей и конкретных учебных задач педагогов. В данном направлении целью исследования является предложить модель подготовки будущих учителей начальных классов путем анализа возможностей использования цифровых образовательных ресурсов в учебном процессе начальной школы.

Была представлена модель обучения, призванная сделать образовательный процесс интересным и содержательным за счет творческого использования цифровых образовательных ресурсов. В статье с научной и методической точки зрения проанализированы понятия «цифровые образовательные ресурсы», «готовность будущего учителя начальных классов к использованию цифровых образовательных ресурсов». Предложены практическая экспериментальная работа, направления программы спецкурса «Методика применения цифровых образовательных ресурсов в начальной школе», направленные на освоение цифровых образовательных ресурсов как средства самопрофессионального развития будущих специалистов. В качестве эмпирического метода в исследовании использовалась теоретическая литература, обзор цифровых образовательных ресурсов. Есть возможность использовать результаты исследования в методике эффективного использования цифровых образовательных ресурсов в подготовке будущих учителей начальных классов нашей страны.

Ключевые слова: цифровые образовательные ресурсы (ЦОР), цифровое образование, мультимедийные средства, интерактивность, будущие учителя начальных классов, цифровизация, учебный процесс начальной школы, цифровая грамотность

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