CHAPTER «PEDAGOGICAL SCIENCES»

THE USE OF INFORMATION TECHNOLOGIES IN THE PROCESS OF PROFESSIONAL TRAINING OF FUTURE PRIMARY SCHOOL TEACHERS IN THE CONDITIONS OF MARTIAL LAW

Ivan Vasylykiv[1]

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Abstract. The work investigates the problem of the use of electronic teaching aids, which significantly reduces and facilitates the time that teachers spend on training in martial law conditions. This is what gives future teachers the opportunity to "develop" mathematics lessons, to determine their practical content, forms and methods of teaching. The organization of the educational process is facilitated not only in the traditional field of conducting lessons, but also in project-based, online distance forms of education. This is especially important when teaching talented students and students who, unfortunately, missed a large number of classes. New information and electronic technologies provide students with access to unusual sources of information and increase the effectiveness of remote work, offer new opportunities for creativity, acquisition and improvement of many professional skills, allow the introduction of interesting and unconventional forms and methods of learning.

1. Introduction

Primary school – provides basic knowledge and becomes the foundation for the transition to primary school. Their future depends on whether the teacher can interest, motivate students to study, and teach them to use knowledge. In order to interest and educate children, the modern teacher

[1] Candidate of Pedagogical Sciences,
Associate Professor of the Fundamental Disciplines of Primary Education Department,
Drohobych Ivan Franko State Pedagogical University, Ukraine
ORCID: https://orcid.org/0000-0002-9220-1736

currently turns to the latest forms, methods and means of learning, which, in combination with the usual ones, become interesting and diverse. The latest approaches allow not the teacher to be in the center of attention, but the student, because students become an active subject of educational activity.

Information and communication technologies have become an integral part of the modern world, particularly in the field of education. The use of electronic educational resources in the process of professional training of future primary school teachers is a relevant and promising topic for research. Today, with the use of electronic educational resources, it is possible to achieve a qualitatively new level of professional training of future primary school teachers.

The use of EOR is of particular importance in the process of professional training of future primary school teachers. This is due to the fact that mathematics is one of the main subjects in primary school and it determines success in further education.

In recent years, with the spread of information technologies, the educational process has become more accessible and expanded its possibilities. The use of electronic educational resources is one of the opportunities that provides many advantages over traditional teaching methods.

Mathematics is one of the main disciplines in the education system. Knowledge of mathematics is important not only in scientific activity, but also in practical application. At the moment, many countries recognize the shortage of mathematics specialists, which can become an obstacle to the further development of the economy and technical progress.

Teaching mathematics at various levels of education is a necessary condition for the formation of mental and logical skills, as well as for the development of creativity and critical thinking. In this regard, the use of electronic educational resources is an important tool for improving the process of learning mathematics, because they allow providing high-quality and affordable education for all categories of education seekers.

Analysis of recent research and publications. The problem of using electronic educational resources was the subject of research by domestic and foreign scientists: M. Margitich, T. Zhizhko, V. Horovy, V. Bykov,

R. Gurevich, B. Gershunskyi, M. Zhaldak, Yu. Zhuk, M. Lapchyk, F. Ryvkind, J. Robertson (John Robertson). Didactic and psychological aspects of using EOR in education were reflected in works; IN. Bezpalka, O. Gorkun, V. Liaudis, Y. Mashbytsia, A. Pyshkala, I. Robert, I. Sinelnik.

The use of IT in the educational process and management activities in general educational institutions is widely covered in the works of domestic scientists V. Bykova, A. Gurzhia, G. Yelnikova, M. Zhaldak, V Lapinsky, S. Litvynova, N. Morse, O. Spirin.

The basics of pedagogical design of EOR are highlighted in the works of such domestic and foreign scientists as M. Belyaeva, V. Hryshkuna, V. Ghury, O. Mykytyuka, N. Oliferenko, O. Solovova, N. Janz.

The purpose of the research: to outline the possibilities of using information technologies in the process of professional training of future primary school teachers in the conditions of martial law, to determine their expediency and experimentally check their influence on the didactic process in a modern primary school, in particular during the study of the mathematical educational field.

2. Informatization of education in institutions of higher education

According to the Law of Ukraine "On Education" (Article 10, Clause 1), educational institutions in our country, this is full general secondary education, and the first degree in the national framework of qualifications – primary education, is subject to the development model of any social institution, which is compatible with the sociocultural conditions of its functioning [18, p. 43–44]. Modern society is recognized as post-industrial or informational: as noted by T.A. Žižko, we live in the era of the information revolution, in which knowledge, information and intelligence not only realize their place in the system of social life, but also act as its main driving force [19, p. 3]. V.M. Horovy emphasizes that it is information resources that will have the greatest importance for humanity in the era of dynamic global transformations, which are the main argument in confronting the challenges of modernity and a promising factor in further social development [12, p. 2–3].

The challenge of modernity is the development in 2016 of the "New Ukrainian School" Initiative. This concept is the first document that declared the value of childhood, a personal approach, the humanization of

education, the creation of a learning-oriented environment, and the need to develop the skills of the younger generation, which collectively contributes to the creation of the child's comfort and the manifestation of his creative potential [21, p. 6].

In particular, the concept of NUS also emphasizes the need to form key competencies in children of primary school age, namely: communicative competence, mathematical competence, and informational and digital competence [21].

Scientists believe that the main characteristics of the information society are:

1) transformation of information into the most important economic resource; this resource has a global character and guarantees the improvement of efficiency, competitiveness and innovative development of business entities;

2) increasing the impact of information on all spheres of human activity and turning it into an object of public consumption;

3) intensive formation of the information sector of the economy, which occupies a dominant position in the new society;

4) transformation of the information sphere into the basis and foundation of all types of economic activity [17, p. 6].

Therefore, educational institutions, which today are strategic determinants of the development of all other social institutions and society as a whole, must adequately respond to the challenges of this era. At the same time, the informatization of education precedes the informatization of all other spheres of social activity. This is explained by the fact that it is here that the psychological, social, general cultural and professional foundations of society's informatization are formed.

The concept of "informatization" in the concept of the National Informatization Program is aimed at creating conditions for meeting information needs and realizing the rights of citizens and society through the creation, development and use of information systems, networks, resources and technologies built on the basis of modern computing and communication technology. It is defined as a set of interconnected organizational, legal, political, socio-economic, scientific-technical and production processes [20].

The main feature of the information society is that everyone can create, store, access, use and exchange information and knowledge in order to promote the social and economic development of society and improve living conditions [20].

Today, the value of information is considered in two planes:

1) personal sphere, i.e. as an effective mechanism of human adaptation to the changes taking place;

2) the social sphere, that is, as a means of progress to solve the global problems facing humanity today.

Thus, informatization of education is, in fact, a historical trend, which is based on the introduction of new educational technologies based on the use of processing information tools, electronic educational products and information and communication technologies (IT) for learning. According to the concept of the National Informatization Program, the informatization of education is aimed at:

– formation and development of the intellectual potential of the population, improvement of the form and content of the educational process;

– implementation of computer-based learning methods for solving educational tasks at the highest level, taking into account international requirements; this involves the development of personal competence, individualization of education, organization of systematic knowledge management and the possibility of taking into account the psychophysiological characteristics of each child.

The results of informatization of education include:

– development of human information culture (computer literacy);

– development of the content, methods and means of education to the level of world standards;

– reduction of training periods and improvement of the quality of personnel training at all levels;

– integration of educational, scientific and industrial activities

– improvement of education management;

– deployment of human resources in all areas of informatization in Ukraine through the professionalization of relevant specialists and strengthening of personnel training [20].

M. M. Margitich advocates the following ways of solving the problems of informatization of education.

The first direction is determined by the tendency to expand the scope of use of all information technologies. The use of information technologies is becoming the norm in all spheres of human activity, which leads to the formation of disciplines that provide training in the field of informatics and information technologies, as well as general information culture.

The second direction is related to the philosophical rethinking of the role of information in the development of nature and society, the growing understanding of the general scientific significance of the system-informational, evolutionary and synergistic approach as a fundamental method of scientific knowledge. Informatics is transformed from a purely technical discipline about the methods and means of computer information processing to a fundamental science, about information and its processing not only in technological systems, but also in nature and society, which implies a humanitarian and worldview view of informatics and defining it as educational subject in the content of education.

The third direction is due to the integration of information technologies into education as a new tool of information and educational activity, which provides opportunities for the implementation of interdisciplinary approaches in education, the integration of natural, scientific and humanitarian knowledge, as well as the radicalization of education and the restoration of its integrity.

The fourth direction is related to the significant impact on the goals and content of education of the process of informatization of society, which brings more and more significant changes to the way of life of people. Modern researchers believe that the positive role of information technologies in education lies in the new opportunities offered by computer-based learning tools compared to traditional teaching and learning tools. Computer teaching aids contribute to individualization, differentiation and deepening of learning, which, in turn, leads to optimization and improvement of education [19, p. 25; 20 p. 23].

The introduction of IT in primary education has led to significant changes in the educational process [25]. This information is displayed in Table 1.

Table 1

Changes in the education system caused by the introduction of IT in primary school

	Traditional model	New model
The role of the teacher	Expert	Partner
Learning process	In the center process – the teacher	The student is at the center of the process
Success criteria	Demonstration of the existing level of knowledge, abilities, skills	Demonstration of improving the level of personal knowledge, skills, and abilities
Type of knowledge	Acquisition, accumulation, reproduction	Interpretation, explanation
Knowledge control methods	Testing	Practically oriented tasks
Educational paradigm	Content oriented; teacher-oriented	Process oriented; focused on the pupil/student
Prevailing form of educational work	Independent work	Group work

The concept of EOR is used today both in the legal field and in scientific circulation.

3. Use of electronic educational resources by future primary school teachers

According to the Regulation on electronic educational resources (EER), they are educational resources on digital media of any type or placed in information and telecommunication systems, which are reproduced using electronic technical means and used in the educational process [14].

In the scientific literature, EOR is defined as:

– subject-informational resources for educational purposes, a type of teaching aids that exist in the form of electronic models and are provided in pedagogical systems on electronic data carriers [3, p. 417];

– a type of means of educational activity that exist in electronic form is a set of electronic information objects (documents, documented information and instructions, information materials, procedural models, etc.) that are located and submitted in educational systems on electronic data storage devices [2, p. 9];

– a set of electronic information objects (documents, documented information and instructions, information materials, etc.), information-object content of electronic information systems (electronic libraries, archives, data banks, information and communication networks, etc.), intended for information support of functioning and development of the education system [3, p. 3];

– educational, scientific, informational, reference materials and tools, developed in electronic form and presented on any type of media or placed in computer networks, which are reproduced with the help of electronic digital technical means and are necessary for the effective organization of the educational process in part, as regards its filling with high-quality teaching and methodical materials [16, p. 48].

Before proceeding to the definition of electronic educational resources, it will be appropriate to clarify the meaning of this concept.

The modern world is fascinated by new technologies that greatly facilitate people's lives in all areas, including education. Thanks to the Internet and electronic educational resources, students can now acquire knowledge faster and more efficiently.

It is electronic educational resources that can help make the process of learning mathematics more interesting and understandable for students. Many electronic resources contain video lessons, interactive tasks and games that help students learn new material with greater pleasure. For example, some sites offer interactive games that help students learn math operations such as addition and subtraction and develop their logical skills. These games can be more attractive to children than regular math problems in a textbook, so they can be more interested in learning math.

The development of cognitive interest is a necessary condition for learning. It is not by chance that interest is compared to a catalyst that facilitates and accelerates the reaction of the mind, or to an enzyme that allows students to learn science. From the very beginning of schooling, we must believe in the child's mind, his abilities and the right to acquire knowledge with pleasure. The development of psychological factors of academic success, internal functional changes in the structure of the student's cognitive sphere and the dynamics of the specific weight of information of mental functions in the educational activity of children of primary school age depends on the developmental influence of the student's cognitive

interests. Persistent cognitive interest is a sign of a child's readiness to study at school. It is the basis of all educational initiatives for children during preparation for school. Knowledge contributes to the emergence, expansion and deepening of interest in reality. It is important to stimulate the child's cognitive activity, which is manifested in questions and actions. If cognitive interest is formed, children can learn well and show interest in educational activities. Cognitive activity in children of primary school age is manifested in educational activities. Primary school students are able to apply knowledge acquired in preschool age, actively act, draw relevant conclusions and perform complex mental operations.

The most important task of the teacher in each lesson is to activate cognitive activity. Therefore, every time a lesson is considered, the teacher must first solve the main problem of how to most expediently convey new material. The teacher must first develop the most appropriate ways of communicating the new material, such as: messages, heuristic conversations, discovery, reflection, problem solving, and independent work. Each step should be a lesson in communication and thinking, where the truth appears as a dialogue, as a dispute about the truth.

To activate cognitive activity in each lesson, I use interactive technologies and elements of creative problem solving to ensure the development of abilities and qualities that are still in the process of formation.

With the help of electronic educational resources, you can help students learn the material at a faster rate. For example, if a student does not understand a certain mathematical theory, he can even find a video lesson on this topic on the Internet, which allows him to familiarize himself with the material in more detail and understand it better. In addition, e-learning resources can be useful for students who learn at a distance (distance learning) or who cannot be present in class for some reason. They can use electronic materials to learn the material and keep up with other students.

In addition, e-learning resources can be useful for students with different learning styles. For example, some students may be visual learners and learn better when presented in the form of diagrams or visual images. Other students may learn better when they can listen or read information. E-learning resources can be useful for all these types of learners because they can contain material in different formats.

At the beginning of the 21st century, research by scientists on the effectiveness of using EOR in the education of different age groups intensified in the international educational space. The research of scientists M. Dai, A. Enchenbaum, D. Bavler, S. Green, P. Gray proved the long-term positive effects of the influence of electronic educational resources on basic mental processes, such as memory, perception, attention, decision-making, etc. [16, p. 128].

Studying their experience, the result of the use of electronic educational resources became the following important tools for the development of the system of skills:

– communicative – one can say universal skills with which a person can work independently in the process of acquiring and analyzing knowledge;

– cognitive relationships of a person with others, the ability to adequately assess certain information;

– creative ability of a person to design and generate new ideas.

In addition, all the mentioned features of EER contain significant potential when conducting mathematics lessons for children with special educational needs.

EERs help provide access to additional information and materials for self-study of mathematics, which can help students improve their knowledge. Activation of students' cognitive activity is one of the main tasks of teaching mathematics in primary grades. The use of EER can have a positive effect on this process, as they can help students understand the material by using visual aids, interactive elements and other tools.

One of the main effects of using EOR is to increase students' motivation to learn mathematics. EERs can provide access to interesting materials that can interest students and a variety of interactive exercises that promote the development of logical thinking and mathematical skills.

Using EOR can also help students change their attitudes toward mathematics. With the help of EOR, it is possible to demonstrate to students that mathematics is not a difficult and incomprehensible science, but is interesting and exciting.

In addition, EOR can be a useful tool for independent study of mathematics. Students can use EOR to further study material they are having trouble with or to prepare for tests and exams. They can work with EER at home or at school, depending on their needs and capabilities.

In particular, EOR can be useful for developing the ability to solve mathematical problems. They can provide students with the opportunity to solve tasks using interactive tools and receive immediate feedback on the correctness of solving the problem. In particular, they can provide access to additional information and materials for students with special needs. For example, EERs can have audio and video components to help students with visual or hearing impairments.

EOR can be a useful tool for teachers who teach mathematics to elementary school students. Electronic educational resources provide teachers with access to additional information and materials, as well as the opportunity to teach new material using interactive and visual elements. The use of EOR can have a positive effect on the activation of students' cognitive activity in mathematics during the learning process of primary school students. EER can provide access to additional information and materials for self-study of mathematics, help increase students' motivation to learn, change attitudes toward mathematics, develop the ability to solve mathematical problems, and provide access to materials for students with special needs. Therefore, the use of EOR can be an important element of modern mathematics education in elementary school.

But a study by the Institute of Innovative Technologies revealed that the most important restraining component of the implementation of EER is insufficient preparation of teachers [19, p. 19].

Therefore, the main condition for the use of EOR in mathematics lessons is the development and training of information and digital competence acquirers.

However, it should be noted that the use of EOR should not replace traditional methods of teaching mathematics. They should be used as an additional tool to support students' learning and skill development.

In addition, it is important to take into account the individual needs and characteristics of students when using EOR. Teachers should take into account the interests and needs of each student and use the EER that best suits their needs and level of knowledge.

Also, teachers should be familiar with the possibilities and limitations of EER, as well as be able to use them effectively to achieve pedagogical goals. Finally, e-learning resources can help students develop digital

literacy, which is very important in today's world. With the help of these resources, students can learn to quickly and efficiently search for the necessary information on the Internet, understand the basic concepts of computer science and information technology, and learn to use various software tools.

At the present stage, society is developing under the strong influence of electronic computer technologies. They penetrated into all areas of human activity and are effectively used by them for a more comfortable life.

Considering everything described above, EOR is of great importance and is a powerful resource when used in mathematics lessons and is an educational tool for developing competencies and personal qualities.

In modern conditions, EER is not just a necessary, but also an integral part of our lives, which stimulates the development of the teacher first of all, because it is he who initiates the acquaintance and development of the student with this infinitely interesting, multifunctional and easy-to-use resource [25].

With the advent of electronic educational resources, learning mathematics has become more accessible and understandable for students. After all, modernity allows teachers to use electronic educational resources to make mathematics lessons in primary grades accessible, interesting, understandable and non-standard. In addition, electronic educational resources allow teachers to create individual tasks and tests for each student depending on his knowledge and learning level, games for mathematical warm-ups (Figure 1) and mathematical dictations (Figure 2). This allows for more effective learning and makes the process more interesting for students.

Also, electronic educational resources allow teachers to quickly and effectively monitor the progress of students. Teachers can see which tasks and topics students have mastered well, and which ones need more attention and additional explanations. This allows teachers to create individualized learning plans for each student and helps them deliver more effective learning.

However, when using electronic educational resources in the process of teaching mathematics, it is important to ensure the correct organization of lessons and the most efficient use of these resources.

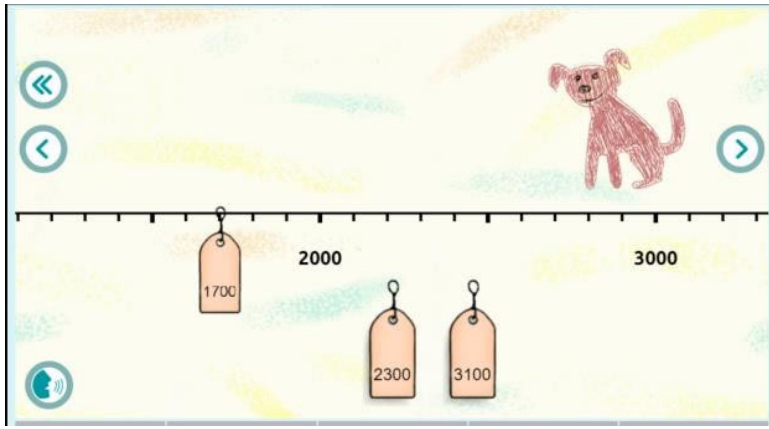

Figure 1. Mathematical warm-up

Figure 2. An example of mathematical dictation

Teachers need to develop lesson content that includes interactive elements and tasks that stimulate students' active participation and promote the development of their mathematical skills and abilities. It is also important to give students the opportunity to independently explore the material and find answers to questions, which contributes to the development of their independence and critical thinking.

In addition, teachers need to support students and explain difficult questions so that students can understand the material and come to the right conclusions. It is also important to provide access to the necessary programs and tools that can help students solve mathematical problems.

Unlike traditional methods, when the teacher gives or requires certain knowledge, teaching using educational electronic resources (interactive tables, maps, diagrams, computer tests, etc.) increases the interest of students in the lesson. This undoubtedly contributes to the stimulation of children's intellectual and creative activity.

Electronic resources allow:

– allocate time for more intensive study;
– to make the lessons interesting, diverse and visual;
– effectively submit new educational materials;
– to develop students' creativity and independence.

Teachers who use electronic educational resources in their teaching fulfill several key roles: expert informants, organizers and consultants. E-learning makes it possible to modify the entire educational process, to introduce a person-oriented learning model and, most importantly, to improve the self-training of students and the work of students in class.

Computer, interactive and methodical software require a change in the form of communication with teachers and students, transformation of learning into business cooperation, learning motivation, which leads to the need to find new teaching models, final control and consideration of the individuality of learning. Electronic learning materials provide an excellent opportunity to develop the creative abilities of both teachers and students.

Electronic resources, which are most often used in the educational process, can be divided into two groups:

1) network technologies using local networks and the global Internet (electronic versions of textbooks, interactive tools for communicating with students via the Internet, including distance learning servers that provide real-time communication);

2) electronic resources used in the educational process (electronic versions of textbooks, interactive distance learning servers that provide real-time communication).

4. Electronic educational resources in mathematics lessons in elementary school

The use of EOR in mathematics lessons would not be possible without computers. Computers can be used for various purposes, in particular as a method of diagnosing students' mathematical abilities.

They can be used at any stage of learning, both collectively and individually, to solve a wide variety of didactic tasks.

The use of electronic learning tools in mathematics lessons is visual, colorful, informative, interactive, saves the time of the teacher and students, allows the teacher to work with students individually, and also allows for quick monitoring and evaluation of learning results.

In general, the use of electronic educational resources is a great advantage in teaching mathematics. They help make the learning process more accessible and efficient for students, and allow teachers to track each student's progress quickly and efficiently. However, the success of using electronic educational resources in teaching mathematics depends on the organization of lessons and the effective use of these resources, so it is important to follow certain principles and recommendations in teaching mathematics using electronic educational resources.

In today's world, when technology is constantly developing, the use of electronic educational resources in mathematics lessons is a necessity. Electronic educational resources can be in the form of software, websites, online courses, video lessons and other materials that can be used in lessons [12].

For teachers, the use of electronic educational resources also has its advantages. They can find a wider selection of materials that meet the different needs and skill levels of students. Moreover, these materials can be updated and supplemented in real time, which allows teachers to use the most relevant and interesting materials in lessons [24].

However, using electronic educational resources has its challenges. It must be remembered that not all students have access to a computer and the Internet at home, so teachers must ensure that resources are available at school. Moreover, for the successful use of electronic educational resources in mathematics lessons, teachers must be ready to work with computers and software. They should be familiar with the various programs and websites that can be used in the classroom and have sufficient knowledge of the

various pedagogical techniques and methods that can be used to support students in their learning of mathematics.

Teachers need to be able to support students who have problems with technology or software. They should be ready to help students understand the material and solve any technical problems.

In addition, the use of electronic educational resources in mathematics lessons can be an effective tool for individual work with students. Teachers can use a variety of apps and websites to provide one-on-one help to students who are struggling to understand the material.

The use of electronic educational resources in mathematics lessons has many advantages. They can increase students' interest in learning mathematics and help teachers find new and interesting ways of teaching. However, teachers need to be prepared to use these resources and ensure equal access to them for all students.

Another important advantage of using electronic educational resources in mathematics classes is that they allow teachers to create a variety of tasks and tests to assess students' knowledge. Using these resources allows teachers to create interactive tests and assignments that provide a more effective assessment of student knowledge. They also allow teachers to monitor student progress and analyze their achievements.

One of the most useful functions of electronic educational resources in mathematics lessons is the possibility of using interactive whiteboards.

These whiteboards allow teachers to demonstrate mathematical concepts and solve problems and examples on the big screen. Students can watch these activities and participate in solving problems and examples, which provides more effective learning and understanding of mathematics.

In addition, the use of EOR can help teachers reduce their workload. They can use various programs and websites to automate certain tasks, such as creating tests or evaluating student performance. This allows teachers to focus on the most important aspects of teaching mathematics and to be more efficient and productive.

Conducting mathematics lessons using electronic educational resources is becoming more and more popular and contributes to improving the quality of education. In this context, leading scientists have conducted numerous studies that reveal the main features and advantages of using electronic resources in teaching mathematics.

When using EER, motivation increases because research shows that the use of interactive electronic resources, such as video lessons, games and virtual tasks, provide motivation for students to learn mathematics. Effective use of multimedia can make learning more interesting and exciting. When individualizing learning, EER provides an opportunity to create individual learning programs for each student, indicating that individual approaches to learning can improve understanding and acquisition of mathematical skills.

5. Modernization of professional training of primary school teachers in the conditions of distance education

The transition of many pedagogical institutions of higher education (HEIs) to distance education, initially associated with the global pandemic of COVID-19, and now with military circumstances, necessitates the need for quality organization of professional training of future educators. The key changes caused by the implementation of the State Standard of Primary School, the Concept "New Ukrainian School", require the implementation of advanced professional training of teachers of grades 1-4, able to effectively solve the problems of modernization of the primary level of general secondary education, capable of qualitative use of educational innovations both in peaceful conditions, as well as wartime, ready for lifelong learning and development.

In the Regulation on the organization of distance learning, distance learning (DL) is defined as "an individualized process of acquiring knowledge, abilities, skills and ways of cognitive activity of a person, which takes place mainly through the mediated interaction of remote participants of the educational process in a specialized environment that functions on on the basis of modern psychological-pedagogical and information technologies" [7].

Qualitative organization of the process of professional training of future primary school teachers in the conditions of distance learning is extremely important. Here are its main advantages. The main value of this format, of course, is the ability to qualitatively ensure the continuity of the educational process, since territorial restrictions are completely eliminated, it becomes possible for future primary school teachers to acquire knowledge, skills and experience and exchange experience in real time [2, p. 279]. Undoubtedly, DN contributes to the improvement of the psychological climate, the

elimination of psychological barriers between the participants of the educational process [2, p. 279].

We will present the peculiarities of the organization of the educational process in the conditions of distance learning at our Academy. The distance education process is organized in accordance with working curricula developed on the basis of higher education standards, subject to the fulfillment of requirements for all elements of distance learning technologies. In turn, training is carried out in the following forms: independent work, training sessions, practical training, control measures [6]. The main types of educational classes in the conditions of distance learning are: lecture, seminar, practical classes, laboratory classes, consultations, etc. [6]. Lectures, consultations, seminars are held with higher education students remotely in synchronous or asynchronous mode according to the curriculum and class schedule [6]. Practical training of students of higher education in the conditions of the National Academy of Sciences is carried out at the Academy according to a separately approved program [6]. A practical session, which involves the student of higher education performing practical (control) works, can be conducted remotely in an asynchronous mode [6]. Separate practical tasks are performed in a synchronous mode, if this is provided for by the syllabus of the educational component [6].

In the context of this study, we consider it appropriate to define asynchronous and synchronous modes. Asynchronous mode – interaction between subjects of distance learning, during which participants interact with each other with a time delay, using e-mail, forum, social networks, etc. [7]. Synchronous mode – interaction between subjects of distance learning, during which all participants are simultaneously in the web environment of distance learning (chat, audio, video conferences, social networks, etc.) [7].

The work of scientific-pedagogical and pedagogical workers during distance learning is organized as follows: conducting online classes in real time with students of higher education in accordance with the class schedule or creating a video recording of their lectures; preparation of tasks for future specialists using audio or video recordings with further analysis; students of higher education sending photos of completed written assignments; students of higher education sending test or other tasks in the form of a

Word document or other file; coordination of actions of future specialists in obtaining non-formal education on relevant educational platforms; informing students of higher education through the website of the relevant department about the organization of the educational process using distance learning technologies [6].

Scientist L. Iliychuk [3] very aptly highlights recommendations for improving the system of professional training of future primary school teachers and managing its quality in the conditions of distance learning. We will briefly list them:

– "creation of a relevant department/subdivision on the basis of ZVO, which would administer the platform of DN...";

– "modernization of the material and technical base and computer equipment of the university...";

– "the availability of special software for the organization of educational institutions on the virtual educational platform of higher education institutions, its constant updating and adaptation to convenient use by users";

– "appointment of responsible persons from among the scientific and pedagogical workers in the structural units of the university (institutes/ faculties, departments) for the quality of the organization of the university and its monitoring";

– "increasing the professional level of scientific and pedagogical workers regarding the use of digital tools of the educational system, in particular through self-education, participation in trainings, webinars, seminars, etc.";

– "creating high-quality educational and methodological support for disciplines on the distance learning platform of a higher education institution";

– "updating courses, syllabi, and work training programs taking into account the peculiarities of online education, in particular, the content of disciplines, methods and means of education, testing and evaluation of knowledge, etc.";

– "adaptation of the content and volume of educational material, tasks for independent work, current and final control of knowledge of higher education seekers to the peculiarities of online learning";

– "providing feedback to applicants with the active use of digital tools of the National Archives";

– "permanence of constant monitoring by surveying scientific and pedagogical workers and applicants with the aim of improving the system of educational attainment" [3, p. 65].

Numerous psychological and pedagogical studies indicate that motivation plays an important role in the academic success of students. After all, it is the level of motivation that depends on whether a student will make an effort in learning, learn the material in a purposeful way [5, p. 363–364]. We believe that increasing the motivation of future primary school teachers in classes will significantly contribute to the success of their professional training, especially in the conditions of distance education. Scientists V. Lukyanenko, Yu. Lavrysh, I. Lytovchenko, S. Vadaska, O. Pisarchyk reveal the main strategies for increasing student motivation in classes in face-to-face and remote formats:

1. "Students should be informed about the goals of the subject and classes. The teacher needs to set realistic tasks and help to achieve them with the help of encouragement. The complexity of the tasks should correspond to the abilities, experience and knowledge of the students"

2. "It is necessary to show the importance of the studied material. The material should meet the needs of students, have practical application in real life. If the teacher presents the material with enthusiasm, a sense of humor, with a sufficient number of visual aids, examples, offers interactive tasks, students will be more motivated and interested in the subject";

3. "It is important to give assignments, project work that students can successfully complete, to provide as much autonomy as possible, the possibility of self-control of learning and the choice of types of work/ types of tasks depending on interests, traditions, preferences, to encourage collaborative learning. Evaluation of students' achievements should be carried out in various ways, in particular, with elements of self-evaluation, mutual evaluation...";

4. "Respect for the student, individual approach, consideration of students' needs, empathy, trust are predictors of successful interaction in the educational environment. Also, determining the individual learning style of education seekers and adapting tasks according to their psychological characteristics has a positive effect on motivation and academic success";

5. "Using elements of gamification, dramatization, problem-based and project-based learning are types of work that increase motivation, critical thinking, teamwork skills, and self-efficacy..." [5, p. 363–364].

We also fully agree with the opinion of researchers V. Lukyanenko, Yu. Lavrysh, I. Lytovchenko, S. Vadaska, O. Pisarchyk is that the insufficient level of support for education seekers in online learning can become a significant barrier in adapting to new learning conditions, which reduces motivation [5, p. 365]. In their study, the scientists reveal in detail the components of student support, which include academic support, help in mastering new technologies, students' psychological well-being and health, and a sense of belonging to the academic community [9; 5, p. 365–366].

The need to implement distance learning has set educators the important task of finding effective means of information technologies for the successful implementation of this task [8, p. 27]. With the aim of successful and high-quality organization of teaching and learning in pedagogical higher education institutions, teachers comprehensively use various forms of online communication. Among them: for the purpose of managing and organizing distance learning - educational platforms Google Classroom, Moodle, etc.; for organizing video conferences or online meetings – Microsoft Teams, Zoom, Google Meet, Skype, etc.; for the purpose of conducting individual work – Whats App, Telegram, e-mail, etc.; for surveys and evaluations – platforms ClassDojo, Classtime, Kahoot, LearningApps.org, Online Test Pad, etc.

AND. Tverdohlib emphasizes that the use of online whiteboards in distance learning helps to create more effective and exciting learning, providing opportunities for interaction, visualization and collaboration, which can be important for achieving success in the modern educational environment [8]. There is a wide variety of online whiteboards available today, including: Jamboard, Padlet, Lino, Scrumblr, Classroomscreen, Wakelet, and more. With the help of such boards, the teacher can effectively organize joint work with students, in particular, during synchronous online classes. The value of such cooperation is not only the possibility of simultaneous work, but also the preservation of all records for viewing by students who are absent from class.

In the context of our research, we note that the specifics of distance learning in a pedagogical institution of higher education require constant

professional development and self-improvement of teachers who provide education to students. In the conditions of distance education, teachers must not only possess modern knowledge of educational components, but also competently use the latest methods and means of organizing and conducting distance education. Professional growth of teachers is ensured through internships, advanced training courses, participation in scientific conferences, seminars, webinars, trainings, round tables, etc. The scientific and methodical work of educators, publishing activities for the preparation of textbooks (manuals, practice books, reference books, dictionaries, etc.) for future primary school teachers acquire special value.

It is important to note that the modern organization of the process of professional training of future primary school teachers must necessarily take into account the specifics of their further professional activities to implement the Concept of the New Ukrainian School, in particular in the conditions of distance education. Note that it is caused by the complexity of its integrated nature, the need to master innovative educational directions (in particular, STEM education), the focus on taking into account the psychological characteristics of modern students, and requires a comprehensive mastery of the methods of teaching lessons studied in primary school, needs the ability to perform new professional roles (facilitator, moderator, coach, mentor, etc.), the ability to qualitatively organize the educational process with the introduction of modern IT tools, etc. [2, p. 94–95]. That is why, when organizing the process of professional training of future primary school teachers, in particular in the conditions of primary schools, special attention should be paid to the organization and conduct of methodical extracurricular activities (methodical seminars, discussions, debates, pedagogical reflections, quasi-professional trainings, master classes, business games, teacher's studios, panoramas of creative ideas, round tables and creative meetings with leading scientists and teachers, virtual trips to the pedagogical past, etc.).

Equally important in the process of professional training of students of higher pedagogical education is their inclusion in research activities. That is why it is necessary to involve future primary school teachers as much as possible to participate in international research programs, in scientific conferences and seminars of various levels, to perform research tasks of a

problem-searching nature in the process of studying individual educational components, etc.

In the context of our research, it is important to note that the transition of educational institutions to the distance form of education caused certain problems in students' passing of pedagogical practice. Taking into account the fact that currently students of higher pedagogical education do not have the opportunity to undergo in-person practice at the ZZSO, methodologists improved the schedules of pedagogical practice, adapting them to the possibilities of conducting distance learning in forced conditions [2, p. 280].

Future elementary school teachers successfully work remotely on those online platforms and with those programs that are officially used in general secondary education institutions. These are mainly platforms Moodle, Google Classroom, electronic educational system "MyClass", etc.

Video conferencing tools (Zoom, Google Meet, etc.) enable trial online lessons and extracurricular online activities, online consultations with teachers, online meetings with the school administration, etc. The main tasks of practice managers are to ensure the appropriate level of remote support, to provide organizational, educational, methodological and advisory assistance to interns.

In the process of preparing for lessons, students actively use digital online resources: to create presentations (https://www.canva.com, https://prezi.com, https://www.beautiful.ai, etc.), to develop texts, tasks, information resources (https://www.classtime.com/uk/, https://kahoot.com, https://quizlet.com, https://learningapps.org, https://study-smile.com, https://naurok.com.ua, https://miyklas.com.ua, etc.), for creating mind maps (https://www.mindomo.com, https://www.mindmeister.com, https://coggle.it) and many others.

In order to support STEM education in elementary school, interns are actively involved in the use of Augmented Reality tools, in particular, special mobile applications. As practice shows, students really like this kind of work, because they can control AR objects by themselves, moving them, turning them, changing the scale, viewing them from all sides. Organization of interactive trips and exhibitions with students is also easily possible thanks to digital tools. So, for example, Ukraine Wow (https://ukrainewow.com), Tour of Ukrainian open-air museums (https://museums.authenticukraine.com.ua/ua), a

walk through the Khanenko museum (https://khanenkomuseum.kiev.ua/uk/pro-musey/virtualnyi-tur), a tour of the British Museum (https://britishmuseum.withgoogle.com), etc. The "Museum Portal" project (https://museum-portal.com) opens a large number of unique virtual tours of the best museums of Ukraine and around the world.

In the process of professional training, future primary school teachers have inexhaustible opportunities to engage in self-education thanks to remote participation in online activities of various formats. The Ministry of Digital Transformation of Ukraine has launched an updated digital literacy development platform Diya. Digital education, which presents a wide range of useful materials (educational series, simulators, guides, webinars, etc.), in particular for educators. Also, as practice proves, interns really like such online platforms as "Education Era" (https://ed-era.com), "Coursera" (https://www.coursera.org), " Prometheus" (https://prometheus.org.ua), "Umity" (https://umity.in.ua), "Vchymo" (https://vchymo.com), as well as the sites "Vseosvita", "To the lesson" etc.

It is also important that future primary school teachers have the opportunity to use many educational platforms and services from around the world that were opened during the martial law, which maximally contributes to increasing their cognitive interest, motivation for independent learning, and reflection. An extended list of remote platforms for learning, self-development and obtaining help and verified information is provided on the official website of the Ministry of Education and Culture [1], which is extremely valuable both for already working teachers and for future educators

Summarizing the above, we can say that the modernization of the professional training of primary school teachers in the conditions of distance education is one of the most important priorities of modern education.

According to our belief, properly organized distance learning in a pedagogical higher education institution makes it possible to ensure the continuity of the educational process in the system of professional training of future teachers. In addition, the high-quality remote organization of the educational process not only optimizes it in higher education institutions, but also effectively forms the readiness of future primary school teachers for possible further professional activities in the conditions of online education.

Based on the analysis of scientific and pedagogical sources, important aspects regarding the improvement of the organization of the process of professional training of future primary school teachers in the conditions of distance learning have been clarified. Among them: an effective material and technical base, the availability of special software in higher education institutions and the possibility of Internet access for all participants in the educational process; continuous professional development and self-improvement of teachers who provide education for students; creation of high-quality educational and methodological support for educational components; updating of courses, syllabi and work training programs taking into account the peculiarities of online education; improvement of the process of organizing pedagogical practice in distance format, etc.

Today, one of the main problems of education is the constant updating of the amount of knowledge, the rapid development of the "information society" and the introduction of information technologies into the educational process. This requires changes in forms, methods of education, application of software based on the use of modern computerized information technologies.

In the conditions of the modernization of the education system in Ukraine, the requirements for the professional training and activity of primary school teachers are changing significantly, since "the basis of all transformations in education should be real knowledge of the potential capabilities of children, forecasting of needs and models of personality development." The search for optimal ways of professional training of primary school teachers takes place in the context of modern educational paradigms (cultural, value, competence, etc.) [3].

At the current stage of the development of society, education makes high demands on the teacher. This is caused by new social needs in the world at the beginning of the 21st century. One of the global goals of education informatization is the training of teachers who have a high level of use of multimedia technologies, are ready to use them in the educational process and education management, and take an active part in the process of education informatization.

The openness of the international educational space for national education prompted to change its main vectors, accordingly, transformations took place directly in the educational environment of educational institutions.

This, in turn, affected the need for reformation changes in the system of professional training of future specialists, in particular, teachers of the primary level of education. The traditional teacher training system has exhausted its resources. The cognitive component laid in its basis required the formation of a certain complex of knowledge, abilities and skills without taking into account the competence approach, which from the beginning was designed to form a qualified specialist. Therefore, higher pedagogical education must prepare a competent teacher.

Professional and pedagogical training of a future primary school teacher in a pedagogical institution of higher education should be carried out in accordance with the Laws of Ukraine "On Education", "On Higher Education", State and industry standards and other valid regulatory documents. Thus, the basis of the content of professional and pedagogical training of future primary school teachers is the requirements of state standards for the training of specialists in accordance with social needs, advanced pedagogical experience, theory and practice of professional education, foreign experience in training specialists, demands of the domestic and foreign labor market, theoretical provisions of methodological approaches to organization of the pedagogical process of professional training of future specialists.

The professional training of a modern specialist in the field of primary education necessarily involves the need for continuous education, readiness for constant improvement of one's professional skills in the conditions of the development of the information society and informatization of the educational process [1, p. 126]. That is why the process of improving the professional training of future primary school teachers in pedagogical educational institutions is aimed at solving methodological, pedagogical, methodical problems, which are posed and solved through the involvement of students in practical activities aimed at increasing the level of their professional and pedagogical training. the formation of information competence in them becomes especially relevant [1, p. 127].

The rapid development of information technologies is becoming a driving force not only in the manufacturing industry, but also in the field of education. A modern computer can most fully satisfy the didactic requirements related to the material support of the educational process [5].

6. Informational influences on the formation of national identity and creativity of the future primary school teacher

Education, as a component of the humanitarian sphere, directly affects the formation and development of moral, humanistic, civic values and priorities of members of society, so it is an organic factor in ensuring the country's stability and national security.

The influence of education on the security of the state is not its only important feature. Another bright characteristic of education, which is becoming more and more clear with the development of information civilization, is its inextricable connection with digital culture, network technologies, open distance learning. We live in the era of network society, everything is reflected and reflected in educational processes.

In modern society, information technologies play an important role in the formation of personality, in particular in the process of training future teachers. The primary school teacher, as a key figure in the educational process, faces numerous challenges determined by new informational realities. Informational influences on the formation of the national identity and creativity of the future primary school teacher are extremely important, since they form not only professional competences, but also personal qualities necessary for successful pedagogical activity [2].

Adaptation to new informational realities, development of media literacy and digital etiquette are important components of the process of training a future teacher. It is important that in the conditions of rapid development of information technologies, professional training includes not only professional knowledge, but also skills in managing informational influences and maintaining psycho-emotional balance.

In this context, the problem of studying and using informational influences as a means of promoting national interests, forming national identity and solidarity, as well as increasing opportunities for information exchange, spreading values and obtaining new information, is actualized. Therefore, when analyzing possible informational influences on national identity, national interests, national consciousness and the preservation of unitary culture, one cannot ignore the latest tools and technologies that have already entered education and are increasingly used in the modern educational space.

Therefore, today's realities require addressing the issue of the influence of social media used in the educational system, which can contribute to the formation and leveling of views, values and positions of the participants of the information and network space. Such processes can have a devastating effect on the country's stability and the humanitarian component of national security.

The phenomenon of informational influences in modern society cannot be separated from social, political and cultural factors that ensure socio-political relationships. As N. Bilan noted, "on the social level, this means ensuring the social rights of communities in connection with the change in the technological structure, free access of all social strata to the Internet, preventing the stratification of society according to the information criterion into "information rich" and "information poor" , ensuring the right to freedom of expression in social media and networks; in the political plane, it means the transformation of a new social environment, deepening of interaction in social media platforms, ensuring the free flow of information in society; in the communication plane is the expansion of communication and interaction opportunities from interpersonal communication (Internet forums, online conferences, blogs, twitter, chats) to interaction using information networks within the global information space" [1, p. 67–71].

The subject of our investigation is the determination of the essence of informational influences, so let's first define this concept. Analyzing the essence of the concept of "informational influences", O. Dodonov, D. Lande noted that informational influence is the excitation/slowing down of the processes in the controlled system desired by the subject of management, which is a way of influencing the subject in which the elements of his system retain their integrity but lose their relevance due to the transfer of such information to him. which prompts him to make the desired decision [3, p. 216]. That is, in essence, under informational influence, scientists saw the manipulation of information in order to obtain the desired decision from the subject of social relations.

So, in the modern world, information technologies have become an important element of all spheres of life, including education. Information influences penetrating the educational environment change approaches to learning, formation of knowledge and skills, as well as attitudes to the educational process. These influences are multifaceted and can have

both positive and negative effects. Let's consider in more detail what informational influences are observed in education today.

Information technologies are the most widely used in the educational process. IT has become an integral part of the modern educational process. Computers, tablets, interactive whiteboards and other technological tools provide access to a wide range of information resources such as online courses, e-textbooks, video lessons and other educational materials. This allows you to make learning more interactive and personalized, increase the interest of students and ensure access to relevant knowledge at any time.

Distance learning and online education began to develop more and more actively during the period of the corona virus and martial law. The development of distance learning technologies has opened new horizons for education. Online learning platforms such as Coursera, Udemy, Khan Academy allow you to get an education without geographical restrictions. This provides access to quality learning materials for students from different regions, as well as for adults who want to improve their skills. Online education also creates new forms of learning activities such as webinars, video conferencing, and discussion forums.

In the globalized world, social networks have become not only platforms for communication and information exchange, but also powerful tools for influencing the formation of national identity. In education, social networks play a significant role in the development of the individual and the formation of his national consciousness. They provide an opportunity not only to study cultural and historical aspects, but also to actively participate in public discussions and cultural practices. Let's consider how exactly social networks can influence the formation of national identity in the context of education.

7. Conclusions

Electronic educational resources make learning more accessible, especially for students with disabilities or distance learners. According to research, the availability of educational materials via the Internet can improve the quality of education for many elementary school students.

Recent events such as the COVID-19 pandemic and war have highlighted the importance of distance learning. Electronic educational resources

reduce learning time, because they can be accessed from anywhere in the world, which makes them industrial to ensure continuous learning, learning at any time.

Electronic platforms provide an opportunity to track student progress and analyze their work. Teachers can receive feedback on how each student learns the material, and based on this, make adjustments to their work and create diagrams-maps of student knowledge.

These aspects are based on the research of leading scientists in the field of didactics and mathematics. They emphasize the importance of using electronic educational resources to improve the teaching of mathematics and promote the development of students' skills in this field.

Finally, the use of electronic educational resources in mathematics lessons can help teachers to provide wider access to teaching materials. They can use websites and other resources with math materials from a variety of sources. This can help students understand the material from different angles and find a more effective way to learn mathematics.

The use of electronic educational resources in mathematics lessons is an important element of teaching this educational discipline. They allow teachers to create more interactive and understandable lessons, provide more effective assessment of students' knowledge, help reduce the workload of teachers and provide wider access to learning materials. It is important to remember that electronic resources cannot replace the role of the teacher, but can be an important tool for improving the process of teaching mathematics and improving the quality of learning.

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