Pushkarova Tamara –
Doctor of Pedagogical Sciences, Professor, Head of Project Management Department Institute for the Educational Curriculum Modernization, Kyiv, Ukraine.
Research interests: *pedagogical design, integration in education and creation of integrated courses, the foreign experience of creating textbooks, features of electronic learning tools, distance learning.*
e-mail: *pushkaryovat@gmail.com*

DOI https://doi.org/10.32405/2411-1317-2019-1-23-32
UDC 37.022:004.773

MODERN APPROACHES TO THE ONLINE TEACHING

Various aspects of society digitalization and usage of computer-oriented technologies in school education are revealed in the article. The author analyzed the interdependence of education digitalization and the industry of teaching aids with their widespread implementation into educational practice. It is highlighted on the continuous growth of the role of the newest ICT in innovation pedagogical projects in the system of general secondary education. The author emphasizes that higher efficiency of the educational process is ensured by using the most advanced pedagogical technologies along with ICT tools, adjusted to meet users' individual needs.

The author emphasizes the processes of education reform and modernization in order to improve the functioning and innovative development of education, improve its quality and accessibility, and integrate it into the European educational space. The definition of challenges and the main results of today's school modernization is an important aspect. Integration is considered in this context as one of the current trends in education.

The author suggests an educational resource as a special tool for overcoming the digital gap. The list of the advantages of distance learning and the conditions for its effectiveness is given in the article. The author also explains the mechanism of how innovative technologies contribute to the facilitation of learning and communication among all participants in the educational process.

Some mechanisms of using ICT in the education of people with disabilities are provided. They proved to be effective in solving various problems: compensatory, corrective, didactic, and communication tasks. Technologies are considered by the author as auxiliary tools that allow students of all ages and any social background to study regardless of their educational needs. The author revealed some aspects of ICTs integration in education.

Key words: society digitalization, computer literacy, education reform and modernization, e-distance learning, new school, integration of ICT in education.

With the growing popularity in e-learning,
it occurred to me that the e should mean more than electronic.
If we are going to call it e-learning, shouldn't it be effective,
efficient, and engaging?
M. David Merrill, First Principles of Instruction

Problem statement. Studying the state of ICT implementation in the sphere of school education revealed some contradictions between the level of development of computer-based learning environment and general culture of information and communication competence of the school community. As far as nowadays computer literacy is as important as reading or writing, so owing to both tools of access to the ICT and information tools teachers and students get additional opportunity for implementing the results of creative search and organizing joint activities. And finally this is the basis for solving the problem of organizing effective e-learning.

The interest to the digitalization of education is constantly growing in our society. Therefore, the issue of creating a single information space to satisfy the needs of modern education becomes increasingly **relevant.**

In reality, the situation looks like creating educational e-resources diverse in form and content with limited number of users and performing various tasks. Some are aimed at informing parents about learning outcomes of the pupils in a particular educational institution. Others' function is in creating a database of methodological developments for teachers or a platform for communicating and discussing important methodological issues and topics. However, the thing is that, social networks that already exist and are popular in Ukraine are not adapted for educational needs. There is a need for the kind of educational resources that could solve all these tasks simultaneously, and at the same time they should be simple and easy to understand and user-friendly, as well as take into account users' needs. All participants of the educational process: managers, educators, pupils, parents should be the users.

Such resources should provide communication between school administration, teachers and parents within the school, between the school and district (city) education departments in order to increase the efficiency of management activity, document circulation and informing all participants of the educational process. The assurance of personal data security is a prerequisite. According to the research, a full-featured, high-quality *educational e-learning network* for educators is required.

Analysis of recent research and published works. Psychological and pedagogical studies of the influence of subjective (teachers, technical staff and students) and objective (computers, projectors, local networks, multimedia complexes) factors on the educational process effectiveness based on e-learning are necessary nowadays as well as their scientific and methodological comprehension is relevant.

In view of this, researches on the problems of information and computer technologies in the system of general secondary education are rather popular. We will mention published works of Ukrainian V. Bykov, I. Voitovych, Y. Zharkykh, O. Kyvlyuk, M. Kozyr, V. Kremen, S. Lytvynova, N. Morse, T. Podgornaya, O. Spirin and foreign scientists: Patricia L. Rogers [3], Eckhard Klieme, Johannes Hartig, Detlev Leutner [4], Michael G. Moore [5]. The problems of the influence of various factors on the rational use of computer-based learning technologies in school education are considered in their works. V. Bykov noted in this regard that the question of creating the industry of teaching aids and their widespread introduction to educational practice is now connected with digitalization of education, in which hardware and software of Computer Science act in educational activity as a subject of study as well as a means of studying and also as an effective tool for scientific activity and management of all processes carried out in the dynamic system of national education [7, p. 36-44].

Scientific developments, published in recent years, confirm constant growth of the role of the latest information and communication technologies in innovative teaching design with continuous updating of information resources and technological support of education.

The main body. Information and communication technologies (ICTs) are one of the most important factors influencing the formation of the XXI-st century society. Their revolutionary influence concerns people's livelihoods, educational work, and interaction between government and civil society. ICTs are rapidly becoming the vital stimulus for world economy development. Thus, people get huge opportunities.

World Education Forum [6] which is traditionally held in London plays a significant role in the development of interaction and mutual understanding in the field of education digitalization and e-learning development. People from more than 80 countries participate in the event, including education ministers, heads of leading technical universities, and representatives of well-known IT companies: CISCO, Intel, Microsoft, HP etc. Participation of Ukraine in the World Education Forum provides an opportunity to work out the main problems in the field of new technologies of education, experience exchange and create the background for further cooperation with the countries of Europe for e-learning development.

The development of the unified European educational space enhances greatly the role of e-learning as a result of the current global trend of creating global open educational and scientific systems. On the one hand, the trends enable developing the system for scientific knowledge accumulation and dissemination. On the other hand, they provide access to a variety of information resources the general population.

Nowadays Ukraine has taken the path to education reforming and modernization in order to improve its quality and accessibility, to contribute its integration into the European educational space. School education is one of the decisive and longest stages of everyone's life, which is crucial both for individual success and for the long-term development of the entire country. The main result of today's school modernization should be the meeting by school education the goals of the proactive development.

During school years, children should be able to reveal their talents, get ready to the further life in the conditions of high-tech competitive world. The updated content of education should meet this task as well as a new generation of educational standards including the development of modern educational technologies based on e-learning. School equipment both in form and content, should undergo significant changes. We will receive a real return only in case if it is interesting for children to study at school, in case if educational institution becomes the center of compulsory education as well as self-education, creative and sports activities. Modern school in the direct and in the figurative meaning of the word can't and has no right to be old. Therefore, there is a need for advanced educational standards, and new standards for school buildings and classrooms design and modern equipment. Children should feel psychologically and physically comfortable at school.

Based on foreign experience, to modernize school education in accordance with the requirements of information society, means aiming efforts at solving relevant urgent tasks:

- updating education curriculum so that it will allow students to get ready to live in the conditions of the global economy;
- providing state support to scientific research in the field of natural and mathematical disciplines, which will promote the development of an innovative economy based on the integration of educational, scientific and productive activities;
- infrastructure development for providing information services to different categories of the population using the Internet;
- advanced teachers' training and retraining in order to acquire the knowledge and skills needed for computer technologies integration into educational processes;
- eliminate 'information gap' between some regions, economy sectors and various population segments;
- ensuring an adequate level of information representation of Ukraine in the Internet space, as well as creating a sufficient amount of information resources in Ukrainian language;
- ensuring the proper functioning of the system of taking state decisions aimed at creating

national innovation structures for the development of competitive software (centers, technopoles, technological and scientific parks);

- improving the regulatory framework of the information sphere, in particular, solving the problem of copyright protection for computer programs and the review of the State Sanitary Rules and norms of equipment of cabinets of computer equipment in educational institutions, work regime of students on personal computers;
- coordinating the efforts of the public and private sectors of the economy to use effectively the available resources for digitalization and implementation of ICT in the socio-economic sphere.
- Ukraine has developed quite a lot of educational projects and technologies to create a multi-level e-learning environment (student-class-school-region-country) [7]. Its basic level is student's e-learning environment. This work is done in joint activity with companies that have expressed interest in partnership in education as for its modernization. All of them are the leading producers of computer hardware and software. Thus, Microsoft Corporation was among the first to propose partnership in national IT projects in Ukraine.

In addition, the number of joint projects with telecommunication companies is constantly growing. Ukrainian mobile companies brought high-speed Internet to several hundred higher education institutions, schools and colleges. Distance education center for people with special needs is of great importance. The inhabitants of remote villages and small towns got a priority in Internet provision.

Nowadays educational reforms take place in many countries around the world. Ken Robinson, a famous specialist in education and innovation, once said in his speech 'A New Look at the Educational System' that there are two main reasons for reforms to take place.

The first is economic. People try to find out if education gives children enough knowledge to be successful in the XXI-st century. It's quite difficult to do, given the fact that today it's difficult to make predictions about further development of the economy of any country, even in a year. And it can be traced by analyzing the Global Economic Crisis of 2008.

The second reason is cultural. All countries are concerned about the ways of preserving national identity and transmit cultural heritage to the successors, and at the same time to have advantages from globalization.

'Educators need to focus on preparing their students for their future, not for our past' said Ian Jukes, a teacher and futurist. Many scholars shared his views, in particular Jennifer Fleming is sure *'Teaching in the Internet age means we must teach tomorrow's skills today'.*

The problem is that although teachers try to prepare children for the future they often use old methods. Now we can't say to a child to study at school very well, graduate from the institute with honors and you are guaranteed to have a favorite job and a decent salary. The existing educational system neither solves the tasks of preparing the youth to live and work in the XXI-st century, nor provides them with the proper skills and abilities. It was because it was created in the last century and solved the problems of the industrial society. The division of children into grades according to the age, the year of admission to school and the year of students' graduation is the clear regulation of learning and recreation because all this is reminiscent of industrial production at a factory.

Today everything has changed dramatically. More and more people consider e-learning to be an essential requirement of our time. *'Online learning is not the next big thing, it's the big deal now'.* Donna J. Abernathy

To provide the youth with high-quality education, modern tendencies should be used. One of them is integration of e-learning in school education. What do we mean by integrating e-learning into education?

Integration (from Latin *Integrum* means integer, *integratio* is restoration) means combination, interpenetration, the process of combining any elements (parts) into one whole.

Integrating e-learning in education is not just a replacement of old learning tools by modern computers or transition from hard copy paper to electronic resources. Such a process of mutual

convergence of traditional and electronic learning that changes the paradigm of education, creates new forms and methods of work that are impossible without ICT. Such integration is implemented today, in particular, in the development of e-learning content.

Analysis of the real situation of e-learning development in Ukraine shows that different categories of people, various age groups and social groups have diverse opportunities for access to information and education. Such digital inequality or digital gap is realized in school education in several ways:

- between students who have and those who have no access to the Internet at home;
- between innovation teacher who develop their ICT skills constantly and those teachers who do not use Internet at all;
- between students who have Internet surfing and communication in social networks skills and teachers who often don't even imagine what these concepts include.

A separate managers task became the work on these problems in many schools. Some schools try to solve them by their own, involve all the staff of the school as well as students and their parents in it.

However, a system of consistent and meaningful steps must be developed for a radical transformation and overcoming the digital gap for:

- updating school curriculum, taking into account wide possibilities of e-learning use;
- transition to the electronic document workflow;
- organization of electronic information exchange at school,
- experiments with new Internet practices;
- to create the system of teachers' continuous training and motivation for those who use ICT in their work.

The tool that can now be useful for achieving the abovementioned is an electronic educational resource that would meets the following criteria:

- promoting the efficiency of management activities;
- promoting modernization of educational activities, including distance education;
- all the users are participants of educational process: educational institutions administration and teachers, students and their parents;
- creation, publishing and evaluation of educational resources, resources for leisure activities and cognition of the world;
- providing equal access to electronic resources of administration, students, teachers, parents using the means of Internet communication;
- guarantees of personal data security;
- all-Ukraine territory.

The importance of implementation ICTs in the education system is recognized throughout the world. This is confirmed by international documents such as EU Strategy 2020 [1], the Okinawa Charter of the Global Information Society [2]. European countries define education, research, innovation, creativity with the further development, support and development of the digital economy, acquisition of relevant digital knowledge, skills and abilities, and digital literacy as priority directions for their development.

The main goal of European countries development is defined by Europe 2020 Strategy. It consists in achieving a genuine European Knowledge Area. The latter is supported by world-class knowledge infrastructure, in which all the participants (students, teachers, researchers, education and research institutions and enterprises) benefit from free movement knowledge and technology.

The experience of European countries (Estonia, Portugal, Sweden, Denmark and others) that develop 'knowledge-based economy' to create highly-paid jobs and raise standards of living, proves that investment in education become more significant to provide the growth of key economic indicators. It is precisely at the expense of raising the level of education developed countries receive almost 50% of the national product. For example, in Kazakhstan, in recent years, funding for the

educational sector had grown sevenfold. And such a small European country like Macedonia had invested about $30 million in education digitalization. As a result of Portugal's educational policy thousands of jobs were created, 30 000 of teachers were trained; 4 million computers were produced for each elementary school student and for export (Magellan Project). The concept of e-state was developed and implemented in Estonia. E-Taxes, e-Police, e-Health, e-Bank, e-School and e-Elections are everyday business for citizens of Estonia. Prefix 'e-' in the words of the public services is a kind of standard of the modern rhythm of life. Thus, modernization of education contributes to the development of the economy and provides countries the access to the world market.

The global rating of the Network Readiness Index reflects the state of ICTs development in the country. As is known, this index consists of many factors. This does create a favorable environment (market, political and infrastructure) for the information technologies development; and people's, business and government officials' readiness to use new technologies; current degree of ICT use on the state, business and private levels. The index takes into account Internet availability at schools, the cost of mobile communication, state vision on information technology, IT availability for business, the cost of R&D of the industry. The number of personal computers, Internet users, subscribers of mobile communication, the availability of working Internet resources of government organizations are considered, as well as the amount of information technology that is produced and consumed in the country.

The ranking includes 138 countries. Sweden traditionally gets the first place. Singapore, Finland, Switzerland and the United States are next. The reasons for the rather low level of Ukraine in the rating experts consider non-attractive market environment and complex regulatory framework for the ICT implementation. But situation has changed; Ukrainians use ICT more and more. This is a trend. According to the national survey of Ukrainian Internet audience conducted by InMind, there are about 8 million permanent Internet users in Ukraine.

Nowadays, distance learning is growing rapidly. Development of communication channels led to increasing the ways to learn remotely. Many educational institutions around the world have begun audio and video broadcasting, audio and video conferencing for their students, so they use the potential of new media as effectively as possible. New up-to-date devices make our lives easier, and of course, the same refers to education. Most students use computers and the Internet to facilitate and organize their learning process. Computer networks help to learn and regulate education from the distance. Let's analyze the benefits of distance e-learning.

Firstly, distance education gives opportunities to an individual learning as well as organizes and makes students more independent. Any student can see the entire amount of material in front of him in a computer and then to plans and regulates his work. Secondly, such a form of education can be useful to many people because there is no need to pay money at all (no need to spend money on regular trips to the educational institution for both students and teachers). Thirdly, it is an opportunity to improve knowledge using the latest computer technologies, virtual libraries, electronic journals, schedules, co-working space, educational games, online contests, video tutorials, audio communications etc. Remote e-learning removes the problem of the lack of a traditional paper textbook, because educational resources have all the necessary materials for teaching, textbooks, maps, tables, graphs, illustrative materials etc.

This system is also convenient for parents because they can daily have information about the performance and success of the child, the subjects studied, etc.

Modern technologies have already reached the level when it is really possible to make communication remote using such tools as Internet conferences, Internet seminars, forums, chats, etc. Internet has no limits and it has enough electronic materials. The main task is to systematize it the best possible way and correctly.

E-learning will be good and effective if it is provided in the case of sufficient level of computer literacy. One needs to get used to such kind of training and understand its mechanism. Therefore, those people who develop electronic educational resources must constantly give relevant information on the existing opportunities to help people in distance learning. Under such circumstances the system of distance learning will work as efficiently as possible.

E-learning will be good only if there is a good relationship with the teacher. And the latest technologies make it possible. Internet enables teachers to present their subject simply and easily, in an online form. That is, the teacher can contact the pupil and his parents any time. It is possible to send homework individually or to the whole group of students at the same time, discuss the educational process with colleagues. And all this can be done any time, because electronic educational resources work constantly 365/24/7.

Computer will have all the necessary information for learning, textbooks, reference books additional literature. There is no need to print handouts. So innovation technologies help to facilitate and make training automatical and, of course, to improve the quality of education. Besides, students are used to computer and Internet, because these are the necessary things. A teacher should always be one step ahead. Educational resources are like most social networks, but they have a specific feature i.e. they are closed systems. They are created for the participants of educational process, their parents and employees of educational institutions. People can communicate with each other, as if they are behind the closed door where nobody disturbs them; they are protected from spam and viruses.

Nowadays inclusive education and protection of the interests of people with special needs is the most urgent issue for Ukraine. Taking into account world trends in education development, the common form of education and upbringing of children with special needs with their healthy peers is increasingly spreading in Ukraine. There are different ways to use e-learning in the education of people with disabilities. The following ways of e-learning for inclusive education are implemented in Ukraine:

1. E-learning for solving compensatory tasks. Such technologies as auxiliary devices allow students to learn. Thus, technologies can help to perceive information through hearing or touch for people with visual disturbances; and in case of impaired movement function students can enter the text on the computer. Thus, technologies help to recompense the lack of natural functions of the body and, accordingly, make the process of obtaining information more effective, as well as create conditions for the knowledge acquisition.

2. E-learning for solving corrective tasks. The use of ICT enhances greatly the capacity of the corrective-educational process to diagnose and monitor the development of knowledge, skills and abilities of students; restoring and replacement of lost or broken functions. Technologies used to train students with disabilities have big potential to enrich their life experiences.

3. Using e-learning to solve didactic tasks. ICT is a didactic tool. It helps to reveal intellectual and creative potential of students to the fullest extent possible, creates conditions to use modern learning and knowledge management strategies. In addition, it is effective when it comes to meeting educational needs of the students who are not able to attend classes in a general institution. ICTs often turn into a distance learning tool.

4. E-learning application to solve communication problems. Technologies are mediators in the process of communication, and sometimes even turn out to be the only way to communicate with the outside world. Special support devices and software are being developed for each category of users who experience communication difficulties.

A bright example of the widespread use of ICT in inclusive education is the special general school "Nadiya" (Hope) of the Solomyansky district of Kyiv. The site has an electronic library of teaching materials, video materials, electronic web-guides and systematic materials developed by school teachers. The site provides communication with students, exchanges of information with school teachers, partners in Ukraine and abroad. In addition, a special unit for the organization of distance education was created at "Nadiya", namely: Distance Learning Laboratory, the Center for Pre-Distance Training (computer class), Internet-class for learning. Exchange PC fund of the institution was created to give students the software developed to provide technical feasibility of distance learning with students.

Thus, e-learning is successfully used to make the process of obtaining information by people with disabilities in the best possible way the, and also create conditions for better learning, enriching individual experience. It is important that new technologies allow to some extent to solve communication tasks and avoid isolation of a person with one's physical or mental problems.

Conclusions and prospects for further research. In the times of dramatic changes in the world, Ukraine, like many other countries has taken the course to building an information society. Technologies are developing rapidly, information and knowledge become the main values in society, and integration ICTs takes place into all branches of human life, including education.

Boost in development of modern technologies creates favorable conditions to get high-quality and competitive education for all members of society, regardless of their physical capabilities. Modern technologies have a considerable potential to compensate users' functional constraints and can become a powerful teaching and communication tool. In its turn, it will lay the foundation for progress in personal development and ensure full participation of people with special needs in the society.

Based on the analysis of the real situation of e-learning development we distinguished several paths how inequality or digital gap is realized in school education. We suggest certain steps to overcome digital gap. The most important thing to be considered to achieve desired results is that electronic educational resource should meets defined criteria. The benefits of e-learning are analyzed thoroughly: in the context of computer literacy, teacher-student interaction, individual learning approach, accessibility for all the children with any educational needs.

Ways of using e-learning in the education of people with disabilities are described and generalized in this work. It is proved in the research that e-learning can be effective means for communication, interaction etc. in solving compensatory, correction, didactic, communication tasks in the sphere of inclusive education.

In the process of our research, we managed to reveal some features of ICTs integration in education and to identify the main issues related to digital inequality. Besides, we studied the possibility of ensuring distance e-learning to all the children, regardless of their educational needs.

Elvin Toffler, an American philosopher, once wrote, *"We are the last generation of old civilization and the first generation of the new, which is now emerging in our lives. This phenomenon has a huge explosive force, just as deep as the "first wave" of change, caused by the emergence of agriculture 10 000 years ago, or as an incredible "second wave" of changes associated with the industrial revolution. We are children of a new transformation, that is, the "third wave".*

The prospects for further research we see in the development of high-quality electronic resources for students studies with such benefits as listed: free of charge; interactivity; use of educational audio, video materials, slide films, graphics; contests, test tasks; a huge library of educational and fiction literature, dictionaries; multimedia library; the possibility of communication between teachers, pupils and their parents; possibility of teacher's professional development; detailed information for parents about their child performance and learning outcomes, etc.

E-learning develops with modern world, along with the development of the latest computer technologies, which make it more simplified, deepen learning process and makes it more interesting and captivating.

"The key to success is to appreciate how people learn, understand the thought process that goes into instructional design, what works well, and a range of different ways of achieving goals." – Tim Buff

Використані джерела

1. Europe 2020. A European strategy for smart, sustainable and inclusive growth. European Commission Brussels, 3.3.2010 // [Electronic resource] Access mode: http://ec.europa.eu/eu2020/pdf/COMPLET%20EN%20BARROSO%20%20%20007%20-%20Europe%202020%20-%20EN%20version.pdf.
2. Okinawa Charter on Global Information Society. Japan, 2000 // Mode of access: http://www.iis.ru/library/okinawa/charter.ru.html.
3. Patricia L. Rogers Encyclopedia of Distance Learning, Second Edition Encyclopedia of Distance Learning (Volume 3). – Idea Group Inc (IGI), 2009 – Pages 2612.
4. Eckhard Klieme, Johannes Hartig, Detlev Leutner Assessment of Competencies in Educational Contexts, Hogrefe & Huber Publishers, 2008. – Pages 356.

5. Michael G. Moore, Greg Kearsley Distance Education: A Systems View of Online Learning. What's New in Education Series. – Cengage Learning, 2011 – Pages 384.
6. World Education Forum. // [Електронний ресурс] – Режим доступу: https://www.theewf.org/ .
7. Биков В.Ю. Моделі організаційних систем відкритої освіти: Монографія. – К.: Атіка, 2008. – 684 с.: іл
8. Закон України «Про Національну програму інформатизації» // [Електронний ресурс] – Режим доступу: https://zakon.rada.gov.ua/laws/show/75/98-%D0%B2%D1%80.
9. Інноваційні педагогічні технології в практиці роботи загальної середньої освіти України: інформаційно-аналітичний довідник / Упорядники: К.В.Таранік-Ткачук та ін.; за заг. Ред. Ю.І. Завалевського. – Київ – Чернівці: Букрек, 2018. – 292 с.
10. Рождественська Д.Б. Інформаційний та психоло-педагогічний дослідницький потенціал освітнього порталу "Діти України" у зб. наук. праць "Засоби і технології єдиного інформаційного освітнього простору" / За ред. В. Ю. Бикова, Ю. О. Жука / Інститут засобів навчання АПН України. – К.: Атіка, 2004. – 240 с. – С.74-80.
11. Спірін О.М. Інформаційно-комунікаційні та інформативні компетентності як компоненти системи професійно-спеціалізованих компетентностей вчителя інформатики /О.М. Спірін// Інформаційні технології і засоби навчання. – 2009. – № 5(13). – Режим доступу: http:www.ime.edu-ua.net/em.html.

References

1. Europe 2020. A European strategy for smart, sustainable and inclusive growth. European Commission Brussels, 3.3.2010 // [Electronic resource] Access mode: http://ec.europa.eu/eu2020/pdf/COMPLET%20EN%20BARROSO%20%20%20007%20-%20Europe%202020%20-%20EN%20version.pdf
2. Okinawa Charter on Global Information Society. Japan, 2000 // [Electronic resource] Access mode: http://www.iis.ru/library/okinawa/charter.ru.html
3. Patricia L. Rogers Encyclopedia of Distance Learning, Second Edition Encyclopedia of Distance Learning (Volume 3). – Idea Group Inc (IGI), 2009 – Pages 2612
4. Eckhard Klieme, Johannes Hartig, Detlev Leutner Assessment of Competencies in Educational Contexts, Hogrefe & Huber Publishers, 2008. – Pages 356
5. Michael G. Moore, Greg Kearsley Distance Education: A System View of Online Learning. What's New in Education Series. – Cengage Learning, 2011 – Pages 384
6. World Education Forum. // [Electronic resource] Access mode: https://www.theewf.org/
7. Bykov V.Iu. Modeli orhanizatsiinykh system vidkrytoi osvity: Monohrafiia. – K.: Atika, 2008. – 684 s.: il
8. Zakon Ukrainy «Pro Natsionalnu prohramu informatyzatsii» // [Elektronnyi resurs] – Rezhym dostupu: http://zakon.rada.gov.ua/laws/show/75/98-%D0%B2%D1%80
9. Innovatsiini pedahohichni tekhnolohii v praktytsi roboty zahalnoi serednoi osvity Ukrainy: informatsiino-analitychnyi dovidnyk / Uporiadnyky: K.V.Taranik-Tkachuk ta in.; za zah. Red. Yu.I. Zavalevskoho. – Kyiv – Chernivtsi: Bukrek, 2018. – 292 s.
10. Rozhdestvenska D.B. Informatsiinyi ta psykholo-pedahohichnyi doslidnytskyi potentsial osvitnoho portalu "Dity Ukrainy" u zb. nauk. prats "Zasoby i tekhnolohii yedynoho informatsiinoho osvitnoho prostoru" / Za red. V. Yu. Bykova, Yu. O. Zhuka / Instytut zasobiv navchannia APN Ukrainy. – K.: Atika, 2004. – 240 s. – S.74-80.
11. Spirin O.M. Informatsiino-komunikatsiini ta informatyvni kompetentnosti yak komponenty systemy profesiino-spetsializovanykh kompetentnostei vchytelia informatyky /O.M. Spirin// Informatsiini tekhnolohii i zasoby navchannia. – 2009. – № 5 (13). – Rezhym dostupu: www.ime.edu-ua.net/em.html

Пушкарьова Т. О., *доктор педагогічних наук, професор, начальник відділу управління проектами Інституту модернізації змісту освіти*

СУЧАСНІ ПІДХОДИ ДО ОНЛАЙН НАВЧАННЯ

У статті розкрито різні аспекти інформатизації суспільства і застосування комп'ютерно-орієнтованих технологій навчання у шкільній освіті. Автор аналізує взаємозалежність інформатизації освіти з індустрії засобів навчання та їх широкого впровадження в освітню практику. Наголошується на невпинному зростанні ролі новітніх інформаційно-комунікаційних

технологій в інноваційному педагогічному проектуванні у системі загальної середньої освіти. Автор підкреслює, що застосування засобів ІКТ, оптимізованих для задоволення індивідуальних потреб користувачів, у взаємодії з найбільш прогресивними педагогічними технологіями допомагає забезпечити вищу ефективність освітнього процесу.

Акцентується увага на процесах реформування і модернізації освіти для покращення її функціонування та інноваційного розвитку, підвищення якості та доступності, інтеграції в європейський освітній простір. Важливим аспектом стало визначення актуальних завдань і головних результатів модернізації сучасної школи. Інтеграція у цьому контексті розглядається як одна з сучасних тенденцій в освіті.

Для подолання цифрового розриву автор пропонує електронний освітній ресурс як особливий інструмент. У статті наведено перелік переваг дистанційного навчання та умов його ефективності. А також, автор роз'яснює, яким чином інноваційні технології сприяють полегшенню й автоматизації навчання та комунікації між усіма учасниками освітнього процесу.

У статті детально описано результати дослідження, зокрема деякі механізми використання ІКТ в освіті людей з обмеженими можливостями, які підтвердили ефективність ІКТ для вирішення різних завдань: компенсаторних, коригувальних, дидактичних, комунікаційних. Технології розглядаються автором як допоміжні інструменти, що дозволяють навчатися усім учням будь-якого віку і соціального статусу.

Під час дослідження автору вдалося розкрити деякі особливості інтеграції ІКТ в освіту та виявити основні проблеми, що стосуються цифрової нерівності. Також автор дослідила можливості забезпечення доступності дистанційного електронного навчання для всіх дітей незалежно від їхніх освітніх потреб.

Ключові слова: інформатизація суспільства; комп'ютерна грамотність; реформування і модернізація освіти; електронне дистанційне навчання; нова школа; інтеграція ІКТ в освіту.

Пушкарева Т. А., *доктор педагогических наук, профессор, начальник отдела управления проектами Института модернизации содержания образования*

СОВРЕМЕННЫЕ ПОДХОДЫ К ОНЛАЙН ОБУЧЕНИЮ

В статье раскрыты особенности применения компьютерно-ориентированных технологий обучения в школьном образовании. Акцентируется внимание на процессах реформирования и модернизации образования, повышении его качества и доступности. Интеграция рассматривается как одна из современных тенденций модернизации образования. Для преодоления цифрового разрыва автор предлагает электронный образовательный ресурс как особый инструмент. В статье приведен перечень преимуществ дистанционного обучения и условий его эффективности.

Автор описывает подходы к использованию ИКТ в образовании людей с ограниченными возможностями для решения различных задач: компенсаторных, коррекционных, дидактических, коммуникативных. Автор считает технологии дополнительными инструментами, которые позволяют учиться ученикам любого возраста и социального статуса.

Ключевые слова: информатизация общества; компьютерная грамотность; реформирование и модернизация образования; электронное дистанционное обучение; новая школа; интеграция ИКТ в образование.