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THE ROLE AND PLACE OF E-LEARNING IN THE INFORMATIZATION OF EDUCATION

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The Role and Place of e-Learning in the Informatization of Education

The article considers the role and place of e-Learning in the process of informatization of education. The analysis of publications of scientists and researchers devoted their work to the study of the problems of the informatization of education and the introduction of e-learning on all levels of education, as well as the introduction and use of information and communication technologies in the educational process at all levels of education. The urgency of the use and benefits of e-learning, as well as the need to implement it at all levels of the educational process and the main measures for this are emphasized. The types and give examples of e-learning and the significance each of them are singled out. The necessity of mastering the teaching staff of educational institutions by the basic terms of e-learning and understanding of their meaning, understanding of the role and necessity of introduction of e-learning in educational institutions is proved. It is proved that the introduction of various forms of e-learning in educational institutions will facilitate the informatization of education, raise the level of informational competence of the staff members of educational institutions, facilitate the perception and assimilation of educational material by students, and provide additional opportunities who wish to receive special or additional education. It is proved that informatization of education is the basic component of informatization of the society. The specific qualitative properties of e-learning are singled out, and the advantages and disadvantages of this type of training are listed. It is noted that the introduction of various forms of e-learning in educational institutions will help to increase the level of informational competence.

Keywords: educational institutions, e-Learning, types of e-Learning, informatization of education, informational competence.

Education is a mean of socialization and personal development, a kind of catalyst that maintains the balance of society from within. Education is the formation of stable value orientations in a person based on a broad base of knowledge and confidence in their capabilities, which reveal themselves in the acquisition of the

necessary competences for life in society. The stability of society is directly dependent on stability of its educational systems, correspondence of the modern education, so what we teach a young person and what content of education we offer [1, p. 77].

In our country, an information technology has been implemented in education for almost half a century. The first steps are the use of computer training complexes such as PSCs, UCNS, Search, Yamaha, ZX Spectrum, Agat and others, mostly in computer science classes. The second important step towards the introduction of information technology in education is the widespread use of multimedia capabilities of computing. And the third step is the widespread use of Internet resources both in classroom and out of classroom teaching activities. Over time, the use of Internet resources is becoming increasingly popular and it is also being introduced and used in homework. It should be emphasized that the above-mentioned applications of information technologies in education are the first steps of informatization of education.

It is known that informatization of education is a set of interrelated organizational, legal, socio-economic, educational and methodological, scientific and technical, production and management processes aimed at satisfaction of information, computing and telecommunication needs (other needs related to implementation methods and means of information and communication technologies – ICT) of participants in the educational process, as well as those who manage and provide this process (including carrying out its scientific and methodological support development) [2] and is the basis of the information society, which in recent times is extremely important for our country. UNESCO experts believe that in order to match the qualifications of workers to the level of the information society, the introduction is necessary into an e-Learning process that orientates students to a new educational style and encourages the development of their skills and skills for further lifelong learning [3].

The problem of informatization of education is one of the inexhaustible ones in pedagogical science. The issues of introducing e-learning at all levels of education

involved a large number of scientists and researchers. The implementation and use of information and communication technologies in the educational process is investigated in the works of V. Bykov, R. Gurevich, A. Ershov, M. Zhaldak, V. Monakhov, N. Morse, Y. Mashbitsya, L. Panchenko, E. Polat, U. Ramskyi, S. Semerikov, O. Spivakovskiy, O. Spirin, Y. Trius and others; studies of e-learning issue are reflected in the works of V. Bykov, R. Clark, R. Mayer, M. Rosenberg, M. Shishkina, S. Shcennikov and others; General pedagogical and general-psychological aspects of the use of information technologies in the educational process are devoted to the works of V. Bespalka, M. Zhaldak, O. Leontiev, Y. Mashbitsa, N. Talizina, O. Tikhomirov and others; the possibilities of information technologies and their implementation in the educational process were considered by V. Velichko, O. Voronkin, L. Gavrilova, L. James, I. Elliner, V. Kukhareno, D. Kushnir, A. Laktionov, A. Petrenko, O. Fedorenko and others .

The purpose of the article is to determine the role and place of e-learning in the informatization of education, the relevance of the use and the benefits of implementing e-learning at all levels of the educational process. To prove the necessity of mastering by educational staff of educational institutions the main terms of e-learning, awareness of the role and necessity of introduction of e-learning in educational institutions of the country.

The implementation of such a powerful component as e-learning in the education system is an important tool for the implementation of the problem of informatization of education and requires some knowledge. In particular, the teaching staff of educational institutions must master new teaching tools such as cloud technologies, virtual reality, augmented reality, mobile technology, Internet technology, distance learning, etc., or to increase the level of mentioned categories. It is also necessary to form the conditions for mastering the latest pedagogical approaches and techniques that have become new forms or have been influenced by the introduction of information technology in the educational activities. Teach the educational staff of educational institutions to use open educational resources, distance learning courses and others in their activities and self-education.

Ukraine's entry into the world information community is impossible without ensuring the quality of national education. Informatization of education is an unceasing improvement of means and methods of education, as well as the ability to use modern information technologies in a well-developed information and educational environment. The analysis of psychological and pedagogical literature shows that the use of the latest technologies in educational activity is one of the key ones, as it increases the possibilities for the development of creative potential and helps in mastering of professional knowledge based on recognition of self-educational developmental goals.

New technologies provide new opportunities for solving the problem of informatization of education. And these technologies serve as the „enhancer“ of intelligence and open up other measurements of consciousness by linking them together and creating a certain knowledge system of a new level. The use of modern technologies serves as a necessary means for achieving a high-quality education, enhancing creativity and effectively influencing the personal perception of the surrounding world. The multifaceted use of information technology in education is growing rapidly. Theoretically, to prepare a high level, to teach to choose a strategy and options for learning, to form active and personalized learning strategies – all these will greatly enhance the effectiveness of teaching and learning by those who learn. The urgency of the use of e-learning in the education system is conditioned by the need to ensure, in an effective and appropriate manner the implementation of the main tasks put forward before education, enhance personal, general cultural and communicative qualities. Unfortunately, it should be noted that there are still many factors and problems that hamper the widespread introduction of information technology in education, one of which is the lack of awareness among some experts of the importance of these innovations.

Starting such a labor-intensive practice as the global introduction of information technology at all levels of education, first of all, it is necessary to master the basic terms (for example, the Internet, Intranet, science-based databases, databases, software, distance learning, mixed learning, mobile learning, tutor,

webinar, content manager, distance learning system, chat rooms, account, widget, gadget, e-learning, massive open online courses, presentations, cloud technologies, etc.) and understanding their value by all participants in educational process. Unfortunately, the practice of training shows that the need to implement e-learning is not fully understood by specialists in the field of education. In part, the availability of this problem is due to the limited financial capacity of educational institutions and, as a result, the informatization of the educational process is slowed down and the problem of the unpreparedness of the educational staff of educational institutions to the use of new educational technologies and the lack of necessary teaching and methodological conditions arises.

E-learning is a system of learning using informational, electronic, information and communication technologies in education. Often, e-learning is referred to as „e-Learning“ in the descriptions of researchers. In works by V. Bykov, e-learning is defined as a kind of learning in which the participants and organizers of the educational process carry out a predominantly individualized interaction both asynchronously and synchronously mainly and essentially using the electronic systems of delivery of teaching aids and other information objects, computer networks Internet / Intranet, media education tools and existing information and communication technologies [4]. Marc Rosenberg believes that e-Learning is the use of Internet technologies to provide a wide range of solutions that enhance knowledge and productivity [5]. E-learning is an innovative technology aimed at professionalizing and increasing the mobility of those who are studying and at the present stage of ICT development, it can be regarded as a technological basis for the fundamentalization of higher education [3, p. 109–110]; and serves as a basis for solving education and training tasks with the help of modern technologies [6, p. 80].

E-learning includes such types of learning as distance education; mixed learning; electronic pedagogy; databases; mobile learning; webinars; mass open online courses, presentations; virtual learning and more. Of course, e-learning has both advantages and disadvantages as well as specific features. So, considering the

principles of constructing e-learning, we have the opportunity to distinguish specific qualitative properties of this type of learning [7; 8]:

- flexibility and adaptability of the educational process to the needs and opportunities of those who study in a convenient time, convenient place and at a convenient pace;
- modularity of the educational programs construction;
- a new role of the teacher;
- specialized forms of quality control of educational achievements;
- use of specialized training facilities;
- use of basic and specialized communication technologies to support the interaction of subjects of training;
- use of specialized software for organizing e-learning support;
- use of specialized forms of organization of educational activities and oriented information and communication technologies;
- use of standardized procedures and protocols of interaction in online e-learning systems;
- creation of a single information and educational environment supporting the operation and development of a network e-learning system;
- economic efficiency.

It is clear that e-learning is a basic component of the educational process. E-learning includes all forms of education and teaching technology, as well as multimedia learning, learning development technology; located on the computer: instructions, training; computer-generated instructions or advice; online learning; web learning; online education, virtual education through virtual learning environments, mobile learning and digital education projects [6, p. 79]; electronic courses, electronic libraries, new programs and education systems based on information and communication technologies.

Speaking about the benefits of e-learning, we will try to isolate them based on the referred specific qualitative properties:

1. Learners who use e-learning technologies independently determine their own pace and time of training material, determine the amount of training material and training aims.

2. Getting new knowledge without interruption from production.

3. Combine educational content to form a variety of curriculum adapted for specific purposes.

4. Obtaining information necessary for the assessment of the knowledge, skills and experience acquired as a result of training.

5. The need for one-time high initial investment to develop and create educational materials for e-learning is almost eliminated by extensive and pre-term use in the e-learning process and is significantly less expensive than traditional training.

6. Wide opportunities to create different and interactive teaching materials.

7. The use of e-learning for people with disabilities and people who are geographically distant from the necessary educational institutions.

8. An effective teaching management system in comparison with traditional forms of training.

We also list the well-known disadvantages of e-learning which include:

1. The complexity of operational changes introducing, in case the training has already begun.

2. The need for an additional motivation for those who learn to use e-learning technologies in comparison with other forms of learning.

3. The need for high initial investment in building of an e-learning environment.

4. High dependence on technical infrastructure. Failure in the infrastructure can lead to a reduction in efficiency or even a disruption to learning.

5. Lack of sufficient number of specialists in the field of e-learning technologies.

6. High investment in making changes to educational content.

E-learning is a technology based on the principles of open learning and uses modern computer and telecommunication technologies for the purpose of rapid exchange of educational material, direct communication with instructors and benefits in the form of free training schedules, self-determination of the load and availability to educational materials independently from the place of stay. Electronic education is also one of the components of creative and cognitive activity that activates independent individual-cognitive activity and is based on operational feedback and automatic control.

Thus, we conclude that e-learning is a learning that involves the direct use of modern ICTs, namely, computer technology learning, on-line learning, interactive multimedia, web-based learning, synchronous and asynchronous learning and other. Through the introduction and use of e-learning, the invisible boundaries between the traditional organization and the integrated forms of the educational process disappear, eliminating the direct presence and distance learning.

Electronic education is the most successful form of improving the education itself at all levels of the educational process. Implementation of various forms of e-learning in educational institutions will increase the level of informational competence of educational institutions, facilitate the perception and mastering of educational material by those who study, provide additional opportunities for those who wish to receive special or additional education and bring the state of informatization of education in Ukraine closer to the level of informatization of education of European states.

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Федоренко О. Г., Величко К. В.

Роль та місце електронного навчання в процесі інформатизації освіти

У статті розглянуто роль та місце електронного навчання в процесі інформатизації освіти. Виконано аналіз публікацій науковців і дослідників, що присвятили свої роботи вивченню проблем інформатизації освіти та питанням впровадження електронного навчання на всі ланки освіти, а також впровадження та використання інформаційно-комунікаційних технологій у навчальний процес усіх рівнів освіти. Наголошено на актуальності використання та переваги електронного навчання, а також необхідність упровадження її на всіх рівнях освітнього процесу та основні заходи для цього. Виокремлено та перелічено види електронного навчання та значення кожного з них. Доведено необхідність опанування педагогічним колективом навчальних закладів основними термінами електронного навчання та розуміння їх

значення, усвідомлення ролі та необхідності впровадження електронного навчання в освітніх навчальних закладах країни. Доведено, що впровадження різних форм електронного навчання в навчальних закладах сприятиме інформатизації освіти, підвищенню рівня інформатичної компетенції працівників закладів освіти, полегшить сприйняття та засвоєння учбового матеріалу тими, хто навчається, надасть додаткові можливості бажаючим отримати спеціальну або додаткову освіту. Доведено, що інформатизація освіти є базовою складовою інформатизації суспільства. Виокремлено специфічні якісні властивості електронного навчання, а також перелічено переваги та недоліки даного виду навчання. Наголошено, що впровадження різних форм електронного навчання в навчальних закладах сприятиме підвищенню рівня інформатичної компетенції.

Ключові слова: заклади освіти, електронне навчання, види електронного навчання, інформатизація освіти, інформатична компетентність.

Федоренко Е. Г., Величко К. В.

Роль и место электронного обучения в процессе информатизации образования

В статье рассматриваются роль и место электронного обучения в процессе информатизации образования. Выполнен анализ публикаций ученых и исследователей, посвятивших свои работы изучению проблем информатизации образования и вопросам внедрения электронного обучения на все звенья образования, а также внедрение и использование информационно-коммуникационных технологий в учебный процесс всех уровней образования. Подчеркивается актуальность использования и преимущества электронного обучения, а также необходимость внедрения ее на всех уровнях образовательного процесса и основные меры для этого. Выделено и наведено виды электронного обучения и значение каждого из них. Доказана необходимость овладения педагогическим коллективом учебных заведений основными терминами электронного обучения и понимания их значения, осознание роли и необходимости внедрения электронного обучения в образовательных учебных заведениях. Доказано, что внедрение различных форм электронного обучения в учебных заведениях будет способствовать информатизации образования, повышению уровня информатической компетенции работников учебных заведений, облегчит восприятие и усвоение учебного материала обучающимися, предоставит дополнительные возможности желающим получить специальное или дополнительное образование. Доказано, что информатизация образования является базовой составляющей информатизации общества. Выделены специфические качественные свойства электронного обучения, а также перечислены преимущества и недостатки данного вида обучения. Отмечено, что внедрение различных форм электронного обучения в учебных заведениях будет способствовать повышению уровня информатической компетенции.

Ключевые слова: учебные заведения, электронное обучение, виды электронного обучения, информатизация образования, информатическая компетентность.

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