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## ЕЛЕКТРОННА ОСВІТА ЯК ФУНДАМЕНТ ДЕМОКРАТИЧНОГО ТА ПРАВОВОГО МАЙБУТНЬОГО

**Аногація.** *Стаття присвячена дослідженню особливостей виникнення, впровадження та функціонування електронної освіти як фундаменту демократичного та правового майбутнього України та світу, що здійснюється, за допомогою вивчення та узагальнення існуючого масиву напрацьованих провідних, вітчизняних та закордонних науковців й вчених. Проаналізовано різноманіття понять електронної освіти, на основі чого було надано авторське визначення цього поняття, що ґрунтується на власному розумінні даного терміну, з позиції теоретико-правового аналізу та сучасних викликів розвитку суспільства. Визначено, що основними передумовами й причинами виникнення та становлення електронної освіти є: тиск інформаційного суспільства; глобальність як характерна риса інформаційного суспільства; стрімкий розвиток інформаційних і комунікаційних технологій; експоненціальне зростання накопичених людством знань і неможливість їх ефективного засвоєння за допомогою традиційних методів і підходів; практично вичерпані можливості традиційної підготовки кадрів для реалізації завдань нового часу; брак інформаційно-комунікаційних технологічних фахівців. Досліджено світовий досвід впровадження електронної освіти, в університетах США та Європи, де навчальні програми в університетах, на відміну від більшості вітчизняних, передбачають менше аудиторного навчання і набагато більше самостійності з боку студента. На підставі якого зроблено висновок, що її ефективність не нижче ефективності традиційної освіти, за умов наявності якісного змісту освіти та грамотного розвитку курсу. Досліджено нормативно-правову базу для впровадження та розвитку електронної освіти в Україні, яка є ключовою рушійною силою в багатьох галузях і необхідною умовою розвитку сучасного українського суспільства. Розкрито зміст та особливість створення й функціонування електронних бібліотек, як невід'ємного елементу електронної освіти, що допоможе виключити дублювання робіт з переводу документів у цифрову форму, вирішити проблему якісного представлення документів користувачеві, забезпечити економію фінансових коштів та людських ресурсів. Зроблено висновок про значення модернізації змісту освітніх програм, а також основної мети електронної освіти.*

**Ключові слова:** електронне урядування, інформаційно-комунікаційні технології, електронна бібліотека, дистанційна освіта, Інтернет.

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## ELECTRONIC EDUCATION AS FOUNDATION FOR DEMOCRATIC AND LEGAL FUTURE

**Abstract.** *The paper deals with the research of the features of emergence, implementation and functioning of e-education as a foundation of democratic and legal future of Ukraine and the world, by studying and generalizing the existing array of developments of leading, domestic and foreign scientists. Various concepts of e-education are analysed, proceeding from which the author's definition of this concept is provided, based on personal understanding of this term, from the standpoint of theoretical and legal analysis and contemporary challenges of society development. It is determined that the main prerequisites and causes for the emergence and development of e-education are: the pressure of the information society; globality as a feature of the information society; rapid development of information and communication technologies; exponential growth of knowledge accumulated by mankind and the inability to assimilate it effectively through conventional methods and approaches; practically exhausted possibilities of conventional personnel training for the realization of modern objectives; lack of information and communication technology specialists. The world practices of introducing e-education in the universities of the USA and Europe is researched, where the curricula at the universities, unlike most of the domestic ones, provide less class hours and much more autonomy on the student's part. It is further concluded that its effectiveness is not lower than the effectiveness of conventional education, provided the availability of quality content of education and competent development of the program. The legal framework for the introduction and development of e-education in Ukraine, which is a key driving force in many fields and a prerequisite for the development of modern Ukrainian society, is researched. The content and peculiarity of creation and functioning of electronic libraries as an integral element of e-education are covered, allowing to further eliminate duplication of digitized documents, solve the issue of quality presentation of documents to the user; provide savings of financial and human resources. The conclusion is made on the importance of modernizing the content of educational programs, as well as the main purpose of e-education.*

**Keywords:** e-government, information and communication technologies, digital library, distance education, Internet.

### INTRODUCTION

Scientific and technological progress and the rapid development of computer technologies have led to the transition from an era of industrial to an era of information society, wherein scientific knowledge and information become the basis for the development of socio-economic, political and cultural spheres of life. The develop-

ment of society requires significant changes in the educational process. Education should always evolve with the course of time. The use of innovation in education can be regarded as a major driver of long-term economic growth and social development. Therefore, the development of information society and e-education in Ukraine and in the world is currently one of the priority directions of national policy. Hence, it is necessary to pay more attention to the content of e-learning in order to understand the importance of implementing cutting-edge technologies in educational processes. Furthermore, this issue remains understudied in domestic science, and a large number of scientists still have not come to an agreement on many key issues at hand.

The foregrounding of this issue is supported, on the one hand, by the fact that knowledge as information is the main intellectual resource in the knowledge society, and on the other hand – the volumes and rates of knowledge accumulation in such a society are constantly increasing. This, above all, is ensured by the capabilities of the communication environment, which enable the use of qualitatively new technologies in the education system. Because e-education, as a modern process of learning and acquisition of knowledge and information, which is made possible through the use of the latest information and communication technologies, which in turn make it more convenient, faster and more efficient, necessitates activation of researching the legal regulation of this problematics. And provision of the author's definition and research of the features of the emergence, implementation and functioning of e-learning will allow us to rethink its meaning and structure.

The study of the features of the emergence, implementation and functioning of e-learning in Ukraine and in the world is rather complicated, which explains its scientifically understudied nature. Some aspects of this issue were, in one way or another, explored the following foreign and domestic scholars: T. Bates [1], M. Rosenberg [2], A.B. Antopolsky [3], O. Bashun [4], V. I. Gritsenko [5], V. G. Kremin [6], T.M. Kro-nivets [7], S.O. Semerikov [8], O.V. Petryshyn [9], I.O. Polishchuk [10], M.P. Trebin [10], T.O. Pushkaryova [11], S.N. Filonenko [12] and others.

Purpose of the article: to research the features of the leading foreign and national scientists on the basis of studying and generalizing the array of developments of the emergence, implementation and functioning of e-education in Ukraine and the world, to formulate an author's approach to defining the concept and drawing conclusions regarding e-education.

## **1. MATERIALS AND METHODS**

To achieve the outlined purpose and objectives of the research, general scientific and methods and means of scientific knowledge special for jurisprudence are applied. This allows to analyse all issues related to e-learning as a foundation for a democratic and legal future in detail. Thus, the dialectical method allowed to describe and research the content and ideas of e-education, which constitutes one of the elements of the e-government structure, and represents a certain modern process of learning

and assimilation of knowledge and information, which is made possible through the use of the latest information and communication technologies, which in turn, make it more convenient, faster and more efficient. The comparative legal method was used to study and compare the foreign experience and the array of data produced by leading foreign and domestic scientists, namely to explore the world experience of implementing e-education in US and European universities, where university programs, unlike most domestic ones, provide for less class hours and much more autonomy on student's behalf.

The synthesis method allowed to establish that the main prerequisites and causes for the emergence and development of e-education are: the pressure of the information society; globality as a distinctive feature of the information society; rapid development of information and communication technologies; the exponential growth of the knowledge accumulated by mankind and the inability to assimilate it effectively through conventional methods and approaches; virtually exhausted possibilities of conventional training for the realization of modern objectives; lack of information and communication technology specialists. The analysis method singled out the key challenges of e-education, subsequently establishing its significant benefits and some unique capabilities, such as moving classes in space and time, flexible timetable, improved access to and greater variety of materials, the availability of all the required educational materials online, the ability to re-listen or re-watch audio and video lectures, improved communication, and much faster teacher feedback. Using the method of interpretation, it became possible to cite the author's innovative legal definition of the concepts of e-education, based on personal understanding of the term, from the standpoint of theoretical and legal analysis and contemporary challenges of society.

The systematic method revealed the content and the specific nature of creation and functioning of e-libraries, as an integral element of e-education, which will facilitate the elimination of duplication of digitized documents, the solution of the issue of quality presentation of documents to the user, and ensure savings of financial and human resources. The method of generalization indicated that e-education should be considered not as a substitute for conventional, but as an additional, focused on acquisition of in-depth knowledge and future professional advancement or retraining, which is why e-education, as a system of training that uses information and communication technologies, should be rationally integrated into modern education, leaving conventional learning tools alongside the newest ones.

## **2. RESULTS AND DISCUSSION**

### *2.1 The concept of e-education*

The development of society requires significant changes in the educational process. Education should always evolve with the course of time. The use of innovation in education can be regarded as a major driver of long-term economic growth and social development. Nowadays, mastering modern information and communication

technologies is as necessary as the ability to read and write. The labour market demands highly qualified specialists who are able to work in the conditions of ever-changing and evolving technologies, to master and actively put technical innovations into practice. Before considering e-learning, it would be prudent to first specify the meaning of education. The Law of Ukraine "On Education"<sup>1</sup> contains no precise definition of the concept of education, but the Law enshrines a very similar and close term called "the educational process"[13; 14]. Thus, according to this Law, the educational process is a system of scientific, methodological and pedagogical measures aimed at the development of the individual through the formation and application of its competencies.

In addition, the Encyclopaedia of Education interprets this concept as purposeful cognitive activity for people to acquire knowledge, skills or abilities. The process and result of person's absorbing of a certain system of scientific knowledge, practical skills and a certain level of development of mental-cognitive and creative activity connected with them, as well as moral and aesthetic culture, all of which in their totality determine the social avatar and individual specificity of this personality [6]. E-education or e-learning is one of the information society development tools. It promotes the renovation of the forms, means, technologies and teaching methods; increasing access to knowledge for all demographic, with consideration of the possibility of building an individual learning path; the formation of students' skills in the 21st century. According to UNESCO experts, namely Tony Bates, this is online and multimedia training [1].

Marc Rosenberg's point of view is rather interesting, it states that e-learning is the use of online technologies to provide a wide range of solutions that enhance knowledge and productivity; e-learning is based on three essential principles: work is performed through the network; delivery of training content to the end user is performed using a computer with standard Internet technologies [2]. According to the scientist-theoretician S.N. Filonenko, e-education is a form of training based on Internet technologies, which provide, on the one hand, interactive self-education, and on the other hand – intensive consulting tutorial support for the student [12].

Therefore, the author of this research believes that e-education is one of the elements of the e-government structure, which represents a certain modern process of learning and assimilation of knowledge and information, enabled by the use of the latest information and communication technologies, which in turn make it more convenient, fast and efficient.

## *2.2 Basic prerequisites and reasons for using e-learning*

Of particular interest is S. Semerikov's opinion that the main prerequisites and reasons for widespread use of e-education are as follows:

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<sup>1</sup> Law of Ukraine "On Education". (2017, September). Retrieved from <http://zakon3.rada.gov.ua/laws/show/2145-19>.

1. Pressure of the information society. If in an industrial society, the learning experience was necessarily linked to the school (secondary or high), then in the information society, due to development of high technologies, some professions become obsolete, others change, others emerge, the level of requirements for the professional qualities of workers and their responsibility increases.

2. Globality as a characteristic of the information society. The advancement of information technology, the Internet and advances in communications have made society more open and its members increasingly dependent on one another and constantly expanding cooperation. This inevitably leads to the globalization of education and the use of global information resources and standards.

3. Rapid development of information and communication technologies. Moore's famous empirical law – the law of the development of an electronic base (semiconductor circuits), according to which the degree of integration (the number of semiconductors per unit area of silicon wafers) is doubled every 18 months, is also valid for clock speed (speed performance) of microprocessors, communication of data through channels and other places.

4. The exponential growth of knowledge accumulated by mankind and the inability to absorb it effectively through conventional methods and approaches. This requires intensification of knowledge assimilation processes, their actualization and use in practice.

5. Virtually exhausted possibilities of conventional training for the realization of modern objectives.

6. Lack of information and communication technology specialists. One way to solve this issue is to use new methods and techniques of intensive learning and training, including e-education. [8].

Furthermore, S. Semerikov marks down e-education as a large scientific and practical field, which has the common name of automated learning. There are three stages in its development. The first stage (20s-50s of the 20<sup>th</sup> century) covers the period from the appearance of electromechanical computers to the widespread introduction of electronic computers. The second stage covers the period of 50s-80s of the last century and is associated with the widespread introduction of electronic computers in practice, which could not leave experts in the field of education aside, that is why the ideas of cybernetics education at school are born first, elements of applied mathematics are being introduced into the educational process, computer-oriented learning environments and systems of knowledge control and management of the educational process are becoming automated. The third stage (from the 80s of the last century) is the emergence of computer networks and personal computers. An extremely powerful impetus in the development of educational technology is connected with the use of the Internet [8].

Traditionally, three generations of e-learning are distinguished in the world practice: E-learning 1.0 – the first generation of web-based teaching (in fact, training). Can be characterized by a course of 60 minutes or more. Synchronous courses are most com-

monly used, delivered through a virtual training class or asynchronous courses built using authoring tools, content design typically followed conventional teaching models developed by a learning designer. And, by all means, the courses were managed through LMS;

E-learning 1.3 is a term used for the e-learning generation that has existed over the last few years, with development progressing faster and the learning process being divided into smaller pieces. Learning is available in the context of the workplace and the delivery method is much easier. For this reason, learning is not always available through the LMS, but is delivered to the student via mail and corporate intranet links. Content in E-learning 1.3 is typically created by template experts using the Quick Development and Learning Content Management Systems (LCMS). And additionally, virtual classes or discussions can be organized as needed as part of the overall learning process;

E-learning 2.0 is a much bigger step than upon transition from E-learning 1.0 to E-learning 1.3. E-learning 2.0 is based on tools that combine simple content development, web-based distribution and built-in collaboration tools. Any employee can create content, even in the process of ongoing work.

### *2.3 International experience in the development of e-learning*

Among educational institutions, US universities have the most experience in the development of computer information and e-learning. For a long time, they have been building and operating corporate and global data networks. And now the most up-to-date and exciting projects related to the development of the global information environment are being realized by major US universities or with their active involvement.

In the United States, there are three leading areas of e-education: training of information technology specialists; training of specialists in information systems; training of scientists in the field of information science. As examples of preparation of the named categories of specialists and construction of scientific and educational information systems, three leading US higher education institutions can be mentioned: MIT (Massachusetts Institute of Technology), which has exceptionally high intellectual and material potential; Berkeley University of California (Berkeley University), which pioneered modern networking technology and the Internet; KYVU (Kentucky Virtual University) is a new educational institution based on the use of the Internet and methods of distance learning to provide full higher education [10].

Nowadays, e-learning has become an integral part of modern education in many countries of the world. Millions of people around the globe are embraced by e-learning. The absolute world leader in this field is South Korea, which thanks to huge investments, adapts the entire education system (primary, secondary, higher, adult education and management) to the information society. When the country was faced with the task of transforming the economy in the 2000s, a decision was made at the legislative level to

equalize the rights associated with conventional education and e-learning. According to official data, the introduction of the Home Tutor program used by students at home has helped increase education in Korea by 40%. To date, the Cyber Home Learning System, which provides home-based education, is integrated into three of every four Korean schools [11].

In Europe, curricula at universities, unlike the majority of domestic ones, involve less class hours and offer a lot more autonomy for students. At a meeting of the European Commission held in Stockholm on 23-24 March 2001, on the initiative of Viviane Reding, Commissioner for Education and Culture, the European Commission endorsed a comprehensive e-learning action plan aimed at mobilizing all national EU programs and mechanisms, resources of the European Investment Bank and all stakeholders' efforts to accelerate e-learning in Europe [15; 16]. The European Commission in the eLearning Action Plan (2001) defines eLearning as the use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and services, as well as through remote sharing and collaboration [17].

Subsequently, on May 10, 2001, the first European e-learning summit in Europe was held at the IBM International Training Centre in Brussels. For Europe, e-learning has been a great opportunity to maximize the unification of educational programs in different EU countries. The consistent policy on active development of e-learning continues today. In particular, the Minister of Higher Education and Science of France from 18 May 2007 to 29 June 2011, Valerie Perquez, in a speech at the Paris Dauphin University meeting, said that "... today, the main objective in the reform of the French education system is defined as 100% of educational materials in electronic form for 100% of students...; ... The purpose of e-learning is to open up access to knowledge to all – young people who cannot attend all classes, as they are forced to work in parallel, and people with disabilities, for whom not all universities have the appropriate conditions...; ... eLearning also connects universities around the world into a common educational process..." [7].

E-education allows to change the essence of education, increase the mobility and creativity of curricula, opens the possibility of designing and constructing various tools for the formation of professional competence. That is why, despite the fact that the electronic form of education is rather new, experience of its implementation in foreign countries has displayed that its effectiveness is not lower than the effectiveness of conventional education, provided the availability of quality educational content and competent program design.

#### *2.4 Domestic experience in the development of electronic education*

In Ukraine, at the current stage of development, the process of integration of the national higher education system into the European and world educational space is actively taking place, the educational activity is being modernized in the context of European requirements. According to the new Law of Ukraine "On Higher

Education”<sup>1</sup>, the purpose of higher education institutions is to prepare “competitive human capital for high-tech and innovative development of the country, self-realization of the individual, meeting the requirements of society, the labour market and the state for qualified specialists”.

One of the first educational organizations in Ukraine to begin real implementation of information and communication technologies in education was the International Scientific and Educational Centre for Information Technologies and Systems. In its approach to the creation and distribution of distance learning technologies, the Centre for the first time combined the advantages of new information and communication technologies with relevant pedagogical technologies by establishing a telecommunication didactic laboratory for the distribution of new methods and pedagogical technologies of distance learning in Ukraine on the basis of modern information technologies [5; 18].

In 2011, a draft regulation on distance learning was developed, which was created in pursuance of the State target program of introducing into the educational process of comprehensive educational institutions of information and communication technologies "Sto Vidsotkiv" [One Hundred Percent] for the period up to 2015, approved by the Resolution of the Cabinet of Ministers of Ukraine No. 494 dated April 13, 2011<sup>2</sup>. However, this Resolution became invalid on the basis of the Resolution of the Cabinet of Ministers of Ukraine “On some issues of optimization of state targeted programs and national projects, saving of budgetary funds and recognition as invalid, of some acts of the Cabinet of Ministers of Ukraine”<sup>3</sup>.

In 2012, work began to develop a regulatory framework that will form the basis of a new form of education. It is indisputable that e-learning is impossible without due quality content, so one of the most important steps towards e-education in Ukraine can be considered the development and approval of regulations on electronic educational resources. It defines the concept of electronic educational resources, their types, the order of development and implementation. That is, the educational content of e-learning consists, as in conventional education, of textbooks, lectures, practical tasks, tests, etc., but presented electronically<sup>4</sup>.

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<sup>1</sup> Law of Ukraine “On Higher Education”. (2014, July). Retrieved from <http://zakon3.rada.gov.ua/laws/show/1556-18>

<sup>2</sup> Resolution of the Cabinet of Ministers of Ukraine “On Approval of the State Target Program of Introduction to the Educational Process of Comprehensive Educational Establishments of Information and Communication Technologies” One Hundred Percent “for the Period up to 2015”. (2011, April). Retrieved from <http://zakon3.rada.gov.ua/laws/show/494-2011-%D0%BF>

<sup>3</sup> Resolution of the Cabinet of Ministers of Ukraine “On some issues of optimization of state targeted programs and national projects, saving of budgetary funds and recognition as invalid, of some acts of the Cabinet of Ministers of Ukraine”. (2014, March). Retrieved from <http://zakon3.rada.gov.ua/laws/show/71-2014-%D0%BF>

<sup>4</sup> Order of the Ministry of Education and Science, Youth and Sports of Ukraine “On Approval of the Regulation on Electronic Educational Resources”. (October, 2012). Retrieved from <http://zakon2.rada.gov.ua/laws/show/z1695-12>

Electronic educational resources include: electronic document, electronic publication, electronic analogue of printed edition, electronic didactic demonstration materials (presentations, diagrams, video and audio recordings, etc.), information system, electronic resources depository, computer test, electronic dictionary, electronic reference book, electronic library of digital objects, electronic tutorial, electronic textbook, electronic methodological materials, distance learning course, electronic laboratory practicum [19–21].

The next step towards the introduction of e-education in Ukraine was the publication of the draft Conceptual Foundations for the Development of E-Learning in Ukraine on February 12, 2013 by the Ministry of Education and Science, Youth and Sports of Ukraine for the purpose of public discussion<sup>1</sup>. The text states that e-learning is a purposeful process and accomplishment of education and learning by means of electronic education.

The purpose of this Concept is to define the foundations and conditions for the achievement of European standards of quality of educational services and equal conditions of access to them based on the use of information and communication technologies, as well as the implementation of the main provisions of the Law of Ukraine "On the basic principles of development of the information society in Ukraine for 2007-2015"<sup>2</sup> and the Economic Reform Program for 2010-2014 "Wealthy Society, Competitive Economy, Effective State" [22]. According to this Concept, the basic principles of e-learning are: transparency and openness; confidentiality and information security; common technical standards and interoperability; focus on the interests and needs of e-learning participants; compliance with international standards. Unfortunately, the Ministry did not go further than the publication of the project, although the adoption of improved Conceptual Frameworks for the development of e-learning in Ukraine would become the cornerstone for further development of the entire e-education system.

In the same year, an order "On Approval of the Regulations on Distance Learning" dated April 25, 2013 No. 466 was issued by the Ministry of Education and Science, according to which distance learning means an individualized process of acquiring knowledge, skills, and methods of cognitive activity of a person, which occurs mainly through the indirect interaction of remote participants in the educational process in a specialized environment, which operates on the basis of modern psychological and pedagogical, and information and communication technologies<sup>3</sup>.

The purpose of distance learning is to provide educational services through the application of modern information and communication technologies upon training at certain educational or educational and qualification levels in accordance with state

<sup>1</sup> Draft Conceptual Framework for E-Learning in Ukraine. Retrieved from <http://old.mon.gov.ua.docx>

<sup>2</sup> Law of Ukraine "On the Fundamental Principles for the Development of the Information Society in Ukraine for 2007-2015". (2007, January). Retrieved from <https://zakon.rada.gov.ua/laws/show/537-16>

<sup>3</sup> Order of the Ministry of Education and Science "On Approval of the Regulations on Distance Learning". (2013, April). Retrieved from <http://zakon2.rada.gov.ua/laws/show/z0703-13>

education standards; upon programs of preparation of citizens for entry into educational establishments, training of foreigners and professional advancement of employees.

In 2016, the Cabinet of Ministers of Ukraine issued an order “On Approval of the Concept of Realization of National Policy in the Field of Reforming of General Secondary Education “New Ukrainian School” for the period up to 2029”. The implementation of this Concept is supposed to be implemented in 2017–2029 in three stages. In the first stage (2017–2018), it is planned to create a national electronic platform for the placement of e-courses and textbooks, to develop e-textbooks, distance learning courses by curriculum, distance learning systems for teacher training<sup>1</sup>.

According to Liliya Mykhailivna Hrynevych, full implementation of e-education is a ready-made national platform with materials on all subjects, a developed market of electronic textbooks and an availability of appropriate devices for every teacher and student to work with. “From this standpoint, it is about to take at least five, and maybe seven years,” – the minister explained [23].

In consideration of the foregoing, it can be argued that Ukraine is steadily moving towards e-learning, which is a key driving force in many industries and a prerequisite for the development of modern society.

### *2.5 Digital library as an integral element of e-education*

Digital libraries play a significant role in e-education. Thus, in Europe, university libraries are perceived not simply as educational libraries, but as leading information services, offering library and information services without which it is impossible to acquire quality education.

At present, there is a sufficient number of definitions of the term “digital library”, and it can be argued that this concept has already matured. But, unfortunately, there is not a single definition to be considered basic and comprehensive. According to DSTU (State Standard of Ukraine) 5034-2008, digital library is a library in which documents are stored and used in a machine-readable (electronic) format that can be used to work remotely. An electronic library database consists of different types of electronic document collections (text, graphics, audio, video, etc.) [4].

Many countries around the world work on creating electronic libraries. In the United States, creation of electronic libraries started in 1971 (the first electronic format was the “Declaration of Independence of the United States”), in the United Kingdom – in the early 1990s. For several years, these works gained the status of national programs and international projects. An example is the project of creating digital libraries for the G8 countries, DLI in the US and eLib in the UK, in Japan – the 21st Century

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<sup>1</sup> Order of the Cabinet of Ministers of Ukraine “On Approval of the Concept of Implementation of State Policy in the Field of Reforming General Secondary Education “New Ukrainian School” for the Period up to 2029”. (2016, December). Retrieved from <http://zakon5.rada.gov.ua/laws/show/988-2016-%D1%80>

Electronic Libraries project, and in Germany – the Global-Info digital library, in the United States – Google Online Library [3].

As an information system, digital library is a complex enough aggregate, which includes software, hardware, technological, organic components. It is a set of distributed information resources and the accompanying technical capabilities to create, search and use information. This system should provide a universal access tool (directory) for searching and retaining information in the entire database, which can be implemented in card or electronic form.

The catalogue of available educational and scientific materials plays a special role in the modern library of higher educational establishments of Ukraine. The emergence, active implementation of electronic catalogues and their placement on telecommunication networks allows students, faculty and staff of higher education institutions to receive information on available library resources directly in the workplace.

For example, you can cite the Scientific Library of the Yaroslav Mudryi National Law University, located in Kharkiv. The main activities of the library are: development of library and information service; ensuring openness; ensuring diversity; establishing cooperation; implementation of innovations: The library studies and introduces modern achievements in the library and information industry, which facilitates a better satisfaction of educational and scientific demands and needs of the university.

The tasks of the library are: formation of a collection of domestic and foreign publications, electronic resources: databases, electronic journals, e-books; creation of own electronic resources (with consideration of the needs of the educational process and scientific activity of the university) through publishing houses, booksellers, bookstores, information vendors, subscription periodicals, through the purchase of separate publications, as well as donated by organizations, foundations, institutions, individuals and received through book exchange with libraries of Ukraine and the world, etc.

The structural unit of the library is the information technology and computer support department (organization and support of work of databases and digital library, creation and management of full-text resources for development of the IRBIS program, electronic repository of the works of the scientists of the university, support of server activity, maintenance of the web site, social networks, performance of a bibliometric analysis of the publication activity of the scientists of the university, formation of an electronic file of the works of the scientists of the university, etc.) [24].

Recently, the priority has shifted from the use and digitization of library funds to the borrowing of accumulated information, access to distributed information resources, the creation of a single information space, as well as provision of individual experiences and developments to other foreign libraries. For example, in 2008, by the decision of the Presidium of the National Academy of Legal Sciences of Ukraine, a scientific publication was established – "Yearbook of Ukrainian Law" (Certificate of State Registration of the Printed Media Series KB 3 15596-4068P dated 09.07.2009), which publishes the best articles in the field of state and law, written by academicians and

corresponding members of the National Academy of Legal Sciences of Ukraine and scientists working in the institutions of the National Academy of Sciences of Ukraine, the National Academy of Legal Sciences of Ukraine and other leading scientific and educational institutions of Ukraine. Yearbook of Ukrainian Law is a nationwide publication that publishes scientific works of the most prominent scholars of legal science from different regions of Ukraine (Kyiv, Kharkiv, Donetsk, Lviv, Odesa, etc.).

The Yearbook of Ukrainian Law is a unique legal publication with no analogues in Ukraine. Domestic law science has reached the level of generalization when publishing the most significant articles appears to be prudent, highlighting the most fundamental and priority issues of modern legal science. The Yearbook is devoted to various issues of legal science. The purpose of this publication is to accumulate the most interesting and relevant ideas, approaches, concepts of modern legal science.

And in 2019, the eleventh edition of the Yearbook of Ukrainian Law was published in English. In the Yearbook, 47 scientific articles on topical issues of state and law development are published. Each issue of the English version is sent to more than 70 law libraries in the world, including the US, Canada, Australia, the United Kingdom, Germany, Portugal, Switzerland, Norway, Denmark, Latvia, Lithuania [9; 25–28].

That is why it is important to build partnerships with other libraries in order to consolidate the accumulated array of information and further share it. This will help eliminate duplication of digitized documents and their cataloguing, solving the issues of high quality presentation of documents to the user, and saving money and human resources.

In summary, we must agree with S. O. Semerikov's opinion that information on the state of e-learning in our country and around the world indicates the urgent necessity of its stimulation in order to ensure dynamic and progressive development and implementation at all levels of education, above all, – at the level of higher education, because e-learning is an innovative technology aimed at professionalizing and increasing the mobility of learners and at the current stage of ICT development it can be considered as the technological basis of education fundamentalisation [29].

## CONCLUSIONS

Summarizing all of the foregoing, we have formed an opinion that the increase in the amount of information, world processes of humanization, globalization, integration objectively cause the modernization of the content of educational programs, educational programs, updating of forms, methods and teaching aids. This is only possible if electronic educational resources are introduced into the innovative educational space, and higher education institutions have access to global information resources using high-speed channels.

Furthermore, we can confidently state that the main purposes of e-learning are the improvement of the quality of education, training of highly professional specialists,

maturation of a person as an identity, a subject and an individuality, which ensures the development of the state as a whole, cultural and spiritual development of society.

Consequently, in Ukraine, the creation of conditions for the development of e-learning, which forms an integral part of the development of socio-economic, political and cultural spheres of life, has begun. The Law of Ukraine "On Education" states that one of the basic conditions for successful implementation of the national policy in the sphere of information society development is provision of learning, education and professional preparation of the person for work in the information society. The Law also sets out priority measures for the development of national e-education policy. On the basis of the current legislation, the educational institutions create conditions for its development, which facilitates the organization of the educational process and the training of specialists of different professions, who are interested in effective and mobile learning using modern technologies. A comparative analysis of the components of the state of e-education in Ukraine with other countries allowed to establish that in European universities, the curricula provide less class hours in favour of more self-education on the part of students.

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