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Realities and prospects of distance learning at higher education institutions of Ukraine

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Abstract

Introduction. The paper deals with the issue of realities and prospects of distance learning at higher education institutions of Ukraine. Distance learning in Ukraine has been implementing for more than twenty years and distant learning technologies are used at most Ukrainian higher education institutions, but the necessity and feasibility of the introduction and development of remote technology is questionable both to faculty and students. The main purpose of this paper is to synthesize the real state of distance learning in Ukraine and outline its development prospects at higher education institutions of Ukraine.

Materials and Methods. The paper represents the analysis of the survey results of student answers of four classical, pedagogical, maritime and agrotechnological higher education institutions regarding the practical implementation of distance learning in their institutions. The study of the realities of distance learning in the practice of higher education institutions in Ukraine has been conducted among 102 students. The questions concerned student attitude to distance learning, distance learning organisation, advantages and disadvantages of distance learning.

Results. The survey results show all four higher education institutions where the survey has been conducted have the information technology support of distance learning (websites, access to the Internet), students of all four higher education institutions are familiar with distance education, use this technology, but most of them prefer mixed learning. It is partially uncomfortable for students to work remotely with theoretical training materials and practical tasks, but they prefer automated remote testing. The most preferable aspects of the distance learning technology students are reading the theoretical material and viewing video lectures remotely and sending completed assignments over the Internet. According to the opinion of most students, the great advantage of distance learning is the ability to combine work and study and self-determination of the study time and place. As the most significant disadvantage of distance learning, students have indicated that it requires self-motivating learners.

Discussion and Conclusion. The research results allow researchers to identify the realities of distance learning in Ukraine consisting in provision students with the access to distance learning at most higher education institutions. Certain prospects of distance learning development in Ukraine such as updating the software, hardware and material resources of higher education institutions, providing the broadband access to the Internet to higher education institutions of Ukraine are highlighted. It has been noted that ensuring the process of obtaining an educational degree (Bachelor's, Master's degrees) at higher education institutions of Ukraine is possible by taking massive open distance courses.

Keywords: distance learning; higher education; survey; trend analysis.

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One of the most promising trends for the development of modern education is distance learning, in particular, distance learning on the basis of modern information technologies. Distance learning meets all the requirements of the new educational paradigm of the information society, namely: mass education for all population categories regardless of their place of residence; open, person-oriented and lifelong learning of people throughout their life.

Distance learning in Ukraine has been implementing for more than twenty years. The state policy in the field of distance learning determines the concept developed in 2000 for the distance education development. According to the policy, distance education is a form of education that is equivalent to full-time, evening, part-time and external education, implemented through distance learning technologies ([Ministry of Education and Science of Ukraine, 2000](#)). In addition, the Resolution of the Cabinet of Ministers of Ukraine # 1494 dated September 23, 2003 approved the "Program for the Development of the Distance Learning System for 2004-2006" ([Cabinet of Ministers of Ukraine, 2003](#)). The adoption of the new "Regulations on Distance Learning" as revised in 2015 ([Ministry of Education and Science of Ukraine, 2015](#)) and the recognition of distance education in the new wording of the Law "On Higher Education" as revised in 2018 ([On Higher Education, 2014](#)) is important for the distance learning development in Ukraine. Distance learning refers to the individualized process of acquiring knowledge, skills and methods of cognitive activity of a person, which occurs mainly through the indirect interaction of distant participants in the educational process in a specialized environment, which functions on the basis of modern psychological, pedagogical and information and communication technologies ([Ministry of Education of Ukraine, 2015](#)).

Currently, the Department of Higher Education of the Ministry of Education and Science of Ukraine, the Ukrainian Institute of Information Technologies in Education, and the special structural divisions of the Ministry of Defence pay special attention to the issues of regulation and organization of distance education. Currently, Ukraine has no single focal point for the development and implementation of state policy in the field of distance education development. For many years in Ukraine there has not been an unambiguous idea of distance learning. The reasons for this are different approaches to its organization at educational institutions, the lack of a common concept and standards. Sometimes it resulted in poor-quality implementation and caused some distrust to distance education in the society ([Karpenko, 2014](#)).

The Paris Communiqué ([EHEA, 2018](#)), concerning the furthering introduction of the European Higher Education Area, states that higher education institutions should prepare their students and help their teachers act creatively in a digitalized environment, and make better use of digital and blended education with appropriate quality assurance in order to enhance

lifelong and flexible learning, foster digital skills and competences, improve data analysis, educational research and foresight, and remove regulatory barriers to open and digital education provision.

Researchers point out that distance learning is one of the trends in the development of information technology in education ([Osadchyi, & Osadcha, 2015](#); [Sysoieva, & Osadcha, 2019](#)) that online learning can be as efficient as learning in traditional classrooms ([Tallent-Runnels et al., 2006](#); [Dean, Stah, Swlwester, & Pear, 2001, p. 252](#)), that distance learning can be a significant approach to responding to the growing pluralism of learner backgrounds, characteristics, or unusual learning needs that may require or benefit from specialized training ([Simonson, Smaldino, & Zvacek \(Eds.\), 2014, p. 128](#)).

Distant learning technologies are used at most higher education institutions of Ukraine ([Zabolotskyi, 2016](#)), but the necessity and feasibility of the introduction and development of remote technology is questionable both to faculty and students ([Osadchyi, Osadcha, & Ereemeev, 2017](#); [Chemerys, Osadcha, Osadchyi, & Kruhlyk, 2019](#); [Osadchyi, Valko, & Kushnir, 2019](#); [Ereemeev, Osadchyi, Gulynina, & Doneva, 2016](#)). The main purpose of this study is to synthesize the real state of distance learning in Ukraine and outline its development prospects at higher education institutions of Ukraine.

LITERATURE REVIEW

Distance learning has been the subject of scientific research since its emergence. The study of various aspects of its manifestation (philosophical, psychological, organizational, methodological, technical, etc.) has allowed the world scientific community to accumulate considerable experience in solving theoretical and practical problems that arise in the process of developing, implementing and developing appropriate systems.

In particular, one of the urgent tasks is to select methodological approaches that can be used to build educational practices in an electronic network environment. According to the analysis of scientific literature and pedagogical practice Noskova T. N., Pavlova T. B., and Yakovleva O. V. have offered answers to the questions: what theories should be the basis in the implementation of advanced digital educational practices, so as not to duplicate the results and transform educational opportunities. How to achieve this? What to strive for? How to take into account the needs of new generations growing up in the electronic environment? ([Noskova, Pavlova, & Yakovleva, 2016, p. 458](#)). Among these digital educational practices the researchers distinguish: online teaching and tutoring; knowledge generation based on digital educational content; interactive formation of skills and development of skills (simulators, virtual laboratories, virtual reality, etc.); cooperation and interaction in educational activities (multi-user learning environments, online educational communities, etc.); productive digital practices (digital storytelling, mental maps, etc.); formative assessment (progress scales, online diaries, ratings,

gamification); control and management of educational activities (learning management systems, network organizers, testing systems, etc.) ([Noskova et al., 2016, p. 462](#)).

Zvavahera P. and Masimba F. are studying the possibilities of using open and distance learning technologies to provide scientific guidance for PhD students. The authors distinguish three levels of readiness of the education system for the application of these technologies: the level of teachers, the level of students, and the level of universities ([Zvavahera, & Masimba, 2019, p. 37](#)). According to researchers, achieving readiness at each of these levels, in particular through the introduction of interactive platforms for the interaction of students and academic leaders, will ensure the accessibility and internationalization of higher education ([Zvavahera, & Masimba, 2019, p. 39](#)).

Distance learning is a growing interdisciplinary field that is affected by changes in technology and pedagogy. In this regard, it is necessary to understand existing trends and problems and take them into account when creating systems of open and distance learning ([Çakiroğlu, Kokoç, Gökoğlu, Öztürk, & Erdoğan, 2019, p. 4](#)). Considering the current state and prospects of distance learning at Ukrainian universities, we have relied on works in which a prognostic analysis of this phenomenon has been performed, as well as a content analysis of scientific sources has been presented.

The results of a systematic review of scientific articles on the problems of open and distance education are presented in ([Çakiroğlu et al., 2019](#)). The authors analyzed 989 articles published in 5 peer-reviewed journals during 2009-2016. The analysis allowed them to conclude that open educational resources and the prospects of students in this field are the most frequently considered. At the same time, insufficient attention has been paid to distance learning technologies, support systems, teaching methods and pedagogical approaches, remote laboratories and virtual environments. In this connection the following problems require the deeper study: the relationship between changes in the education paradigm and approaches to designing and conducting online courses; online teaching skills; the impact of distance learning technologies on teachers, etc. ([Çakiroğlu et al., 2019, pp. 15-16](#)).

The analysis of scientific papers on the organization of online learning in schools has been performed by the authors of ([Arnesen, Hveem, Short, West, & Barbour, 2019](#)). Having examined the corpus of 356 articles for two decades since 1994, scientists have formed the rankings of journals and authors by the number and citation of articles. In particular, they have emphasized that in the early works the main attention was paid to the theoretical problems of online learning. Subsequently, the number of articles dealing with its applied aspects has increased ([Arnesen et al., 2019, p. 19](#)).

The research ([Nage-Sibande, & Morolong, 2018](#)) presents the results of the analysis of the current state and problems of open and distance learning at universities in Africa. The authors note that the development of distance education is limited by such problems as: prejudices, lack of allocated resources, deficiencies in the planning, implementation and monitoring stages,

etc. ([Nage-Sibande, & Morolong, 2018, p. 495](#)). Most universities lack a comprehensive policy regarding open and distance learning, do not allocate sufficient funding for the development of appropriate systems, and do not pay attention to the development of information and communication infrastructure ([Nage-Sibande, & Morolong, 2018, p. 508](#)). In this regard, in order to achieve sustainable socio-economic development and expand access to higher education, the authors recommend universities to change their attitude to open and distance learning and invest in its development.

Similar results have been obtained by the authors of ([Vershitskaya, Mikhaylova, Gilmanshina, Dorozhkin, & Epaneshnikov, 2019](#)) during a survey of students, teachers and the administration of Moscow universities directly involved in e-learning initiatives, as well as information and communication technology professionals and e-learning specialists. In particular, the researchers conclude that the e-learning introduction faces challenges such as: inadequate ICT and e-learning infrastructure; financial constraints; lack of necessary Internet bandwidth, e-learning policies, electronic content ([Vershitskaya et al., 2019, p. 9](#)).

Studies of Ukrainian and Russian scholars also address such problems as: trends in the development of distance education and the possibility of using massive open online courses in the educational process of universities ([Zakharova, & Yudintseva, 2019](#)); problems and prospects of using distance learning systems in the training process of future IT specialists at universities ([Yalova, Zavgorodnii, Romanyukha, & Sorokina, 2016](#)); advantages and disadvantages of using social networks and traditional learning management systems in the educational process of universities as a means of implementing e-learning ([Feshchenko, Mozhaeva, Kulikov, & Zilberman, 2015](#)).

MATERIALS AND METHODS

The analysis of Internet searches, the analysis of scientific literature, questionnaire surveys, ranking of survey results, graphic processing of information, interpretation of survey results have been applied in the study.

Research materials. The analysis of Internet sources included three lines: the analysis of the "distance learning" request popularity in 2004-2018 using the Google Trends service; the analysis of the number of scientific and pedagogical works of Ukrainian scientists available on the Google Academy platform for the "distance learning", "distance education", "distance technologies" keywords in 1995-2018; the analysis of the number of scientific publications (books, dissertations, articles) in the database of the Vernadskyi National Library of Ukraine for the same keywords in 1990-2018. The results have been presented in tabular and graphical forms.

To collect data, we have used the on-line survey, which has been conducted anonymously. In order to find out the realities of distance learning at higher education institutions in Ukraine, we have conducted a survey at 4 different

higher education institutions of different education types: Kherson State University, Kherson State Maritime Academy, Bogdan Khmelnytsky Melitopol State Pedagogical University, Dmytro Motornyi Tavria State Agrotechnological University. The survey questions have been developed taking into account the current state of higher education in Ukraine and have been presented to respondents using the Google Forms service. The received individual data has been processed using Microsoft Office Excel.

RESULTS

According to the data of 2007 the distance learning development state study at 103 higher education institutions, commissioned by the Ministry of Education and Science of Ukraine, the average number of users per computer is 14, while the number of computers directly involved in providing distance learning is 6.9 PCs for one teacher. Software and technical support indicators of distance learning at Ukrainian higher education institutions testify the technical basis availability for the introduction of distance learning to domestic higher education institutions. All higher education institutions that implement distance learning have access to the Internet, permanently connected institutions constitute 94.2%, approximately 800 users per higher education institution use e-mail, 97.1% of the institutions have representative websites, as well as websites of structural subdivisions. The total number of websites that provide permanent access to distance learning resources is 136. The availability of these resources has been demonstrated by 61 higher education institutions, i.e. 59% of the institutions. Electronic libraries have been created at 81 universities, which constitutes in average 78.6%.

Having conducted the analysis of the popularity of the "distance learning" term with the Google Trends service from 2004 to 2018, in all categories, we have determined that the greatest interest in distance learning in Ukraine was observed in June (100%) and August (35%), 2004 . The popularity of the term was not the same in different regions of Ukraine. The search was the most popular in the following regions of Ukraine: Ternopil region (100%), Chernivtsi region (70%), Ivano-Frankivsk region (41%), Poltava region (28%), Rivne region (24%) ([Google Trends, 2019a](#)).

The analysis of the "distance learning" subject popularity from 2004 to 2018 using Google Trends across all categories has shown that the problem of distance learning was particularly relevant in Ukraine in June, 2004 (100%), as well as in February (43%) and December (37%). In 2005, the greatest interest was observed in the following regions: Ternopil region (100%), Chernivtsi region (62%), Ivano-Frankivsk region (41%), Kharkiv region (40%), Poltava region (34%) ([Google Trends, 2019b](#)).

We have conducted the electronic search of Ukrainian scientific and pedagogical works on distance learning in Ukraine. The search has been carried

out in three groups of keywords: "distance learning", "distance education", "distance technology". The search results are given in [Table 1](#).

Table 1. Consolidation of search results in Google Scholar

Years	Distance learning	Distance education	Distance technology
1995-1999	35(7)	14(4)	0
2000 -2004	224	93	11
2005 -2009	1 290	374	89
2010-2014	4 720	1 730	640
2015-2018	3 930	1 520	414
Total	10 930	3 731	1 155

The figures in the [Table 1](#) indicate the number of publications from a separate keyword group for the years 1995 to 2018. Throughout all periods one can find scientific contributions related to the specified topic. It is also possible to state the growth of the number of researches every 5 (4) years, which may be due not only to the increase in the number of problem studies, but also to the increased access to digitized scientific publications.

We have analyzed the number of scientific publications in the database of the National Library of Ukraine named after V. I. Vernadskyi (<http://irbis-nbuv.gov.ua>). According to the same keywords the search has been carried out in the database of theses, the abstract database and the base of book editions and CDs. The results of the search are presented in [Table 2](#).

Table 2. Consolidation of the search results in electronic catalogues of the National Library of Ukraine named after V. I. Vernadskyi

Decade	Distance learning			Distance education			Distance technology		
	Books	Theses	Articles	Books	Theses	Articles	Books	Theses	Articles
1990-1999	0	0	1	1	0	0	0	0	0
2000-2009	71	0	46	25	0	13	1	1	5
2010-2018	32	6	186	1	1	70	2	0	25
Total		342			111			34	

The figures in the [Table 2](#) refer to the number of items for each of the bases (books – book editions and CDs, theses – thesis abstracts, articles – the abstract database). Basing on the scientific activities documented in different time periods, it is possible to state the growth of research on the distance learning subject. The study of the number of publications for each of the keyword groups provides a sample of structured historical knowledge systems that can be used to describe the contribution of research throughout the entire timeframe.

The study of the realities of distance learning in the practice of higher education institutions in Ukraine has been conducted among 102 students. The vast majority (84.2%) of the respondents have indicated that there is a website to support distance learning at the higher education institutions where they study. However, less respondents (68.3%) have indicated that their institution uses distance learning, 13.9% students do not know anything about the usage of distance learning at their institution, 17.8% students have answered negatively.

The following answers to the question "Do teachers offer you to use distance learning technologies in all courses?" have been received: 43.6% of the students state they use such technologies in the majority of courses, 29.7% of the students state they use these technologies in the minority of courses, 13.9% of the student do not know anything about this fact, 12.9% of the students use these technologies at all courses. Therefore, the insignificant number of respondents has indicated that teachers offer the use of distance learning technologies at all courses.

Most of the students (40.6%) who participated in the survey would like to study using the mixed learning technology (combining online, traditional technologies and self-study), 20.8% of the students prefer studying traditionally (lectures and practical lessons in the classroom), 13.9% of the students would like to study in groups (to get the project task and work on the result), 9.9% of the students would like to study on an individual schedule, 8/9% of the students would like to study distantly, 5.9% of the students have pointed out that there is no matter what technology is used.

37.6% of the students responded to the question about the attitude of students to distance learning that distance learning is necessary as a technology; 33.2% of the students would not like to study fully remotely; 18.2% of the students like studying remotely; 5.0% of the students believe that knowledge cannot be obtained remotely; also 5.0% of the respondents consider the distance learning to be unnecessary. Only 1% of the participants are convinced that they need distance learning because they can find time to work ([Figure 1](#)).

Most of the respondents (58.4%) indicate that it is partially uncomfortable for them to work with teaching materials remotely, 37.6% of the students indicate that it is completely uncomfortable, and 4% of the students do not experience inconvenience.

When we have asked if additional explanations are needed for students after theoretical material has been worked out remotely, 55.6% of the students have indicated that it is sometimes necessary, 30.3% of the students have indicated that it is necessary, 14.1% of the students indicated that it is unnecessary.

47.5% of the respondents have answered that it is partially convenient for them to perform practical tasks remotely, 43.6% of the students have answered that it is completely convenient, 8.9% students have answered that it is inconvenient.

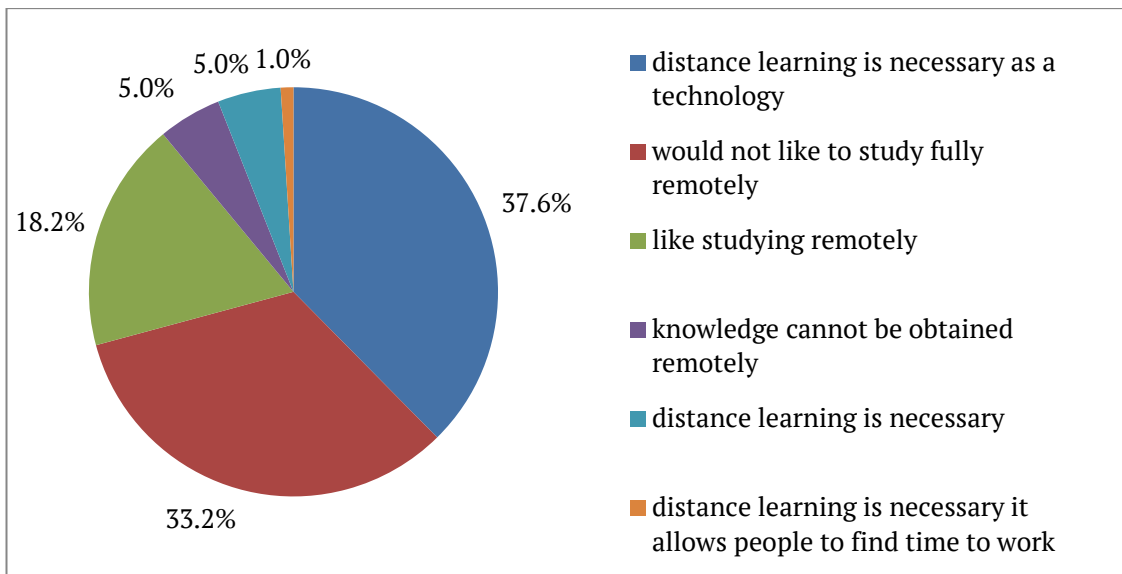


Fig. 1. Student answers to the question "What is your attitude to distance learning?"

When we have asked about the convenience of automated remote testing from the vast majority of students we received 70.3% positive answers. 21.8% of the students have pointed out some inconvenience, and 7.9% of the students think that it is not convenient for them to pass automated testing remotely.

When we have asked students how would they like to have distance learning organized, we received the following answers: to study remotely outside the educational institution (19.8%), to receive only teacher consultations remotely (12.9%), all courses have to be with the remote support (31.7%), to send completed assignments via the Internet (47.5%), to read theoretical material or to view video lectures remotely (53.5%), distance education is not suitable (11.9%), only full-time education is possible (1%) (Figure 2).

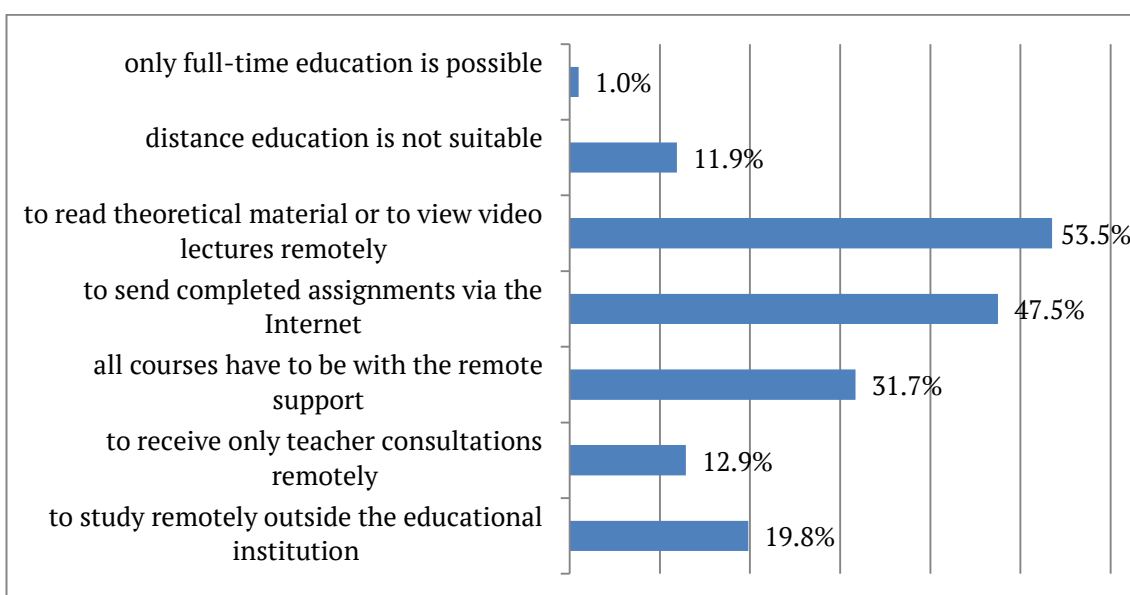


Fig. 2. Student answers to the question "How would you like to have distance learning organized?"

Among the main advantages of distance learning, the students have indicated: the possibility of work and education combination (75.8%), its cheapness (17.2%), absence of strict training terms (35.4%), less pressure (39.4%), self-determination of the time and place of study (66.7%) (Figure 3).

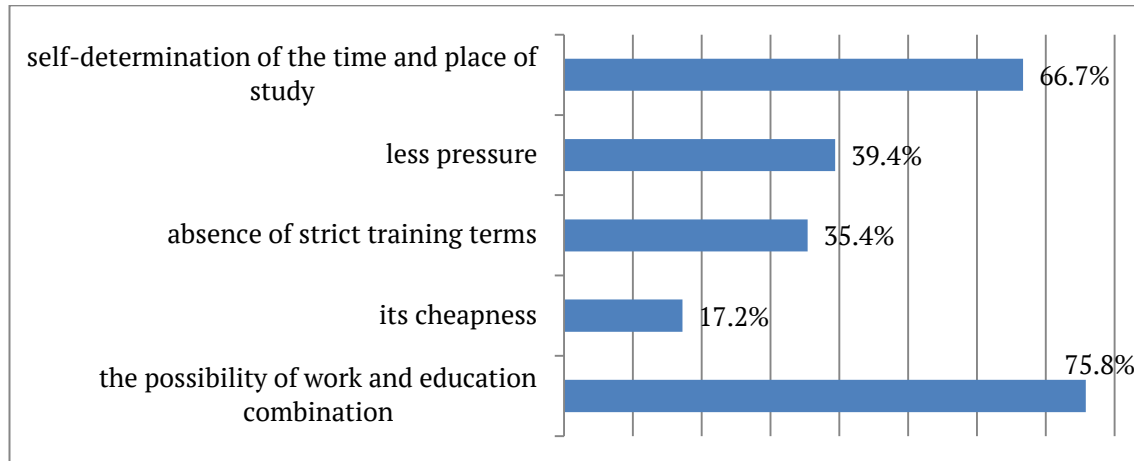


Fig. 3. Student answers to the question "What are the main advantages of distance learning in your opinion?"

Among the main disadvantages of distance learning (DL), the students have indicated: distance learning requires self-motivation (60%), the lack of personal communication in virtual learning (36%), distance learning does not require immediate feedback (9%), distance education must be accredited (8%), distance learning does not allow students to work on oral communication skills (35%), distance learning does not always support all the necessary courses online (32%), distance learning requires constant, reliable access to technologies (38%), it requires regular contacts with a teacher (1%) (Figure 4).

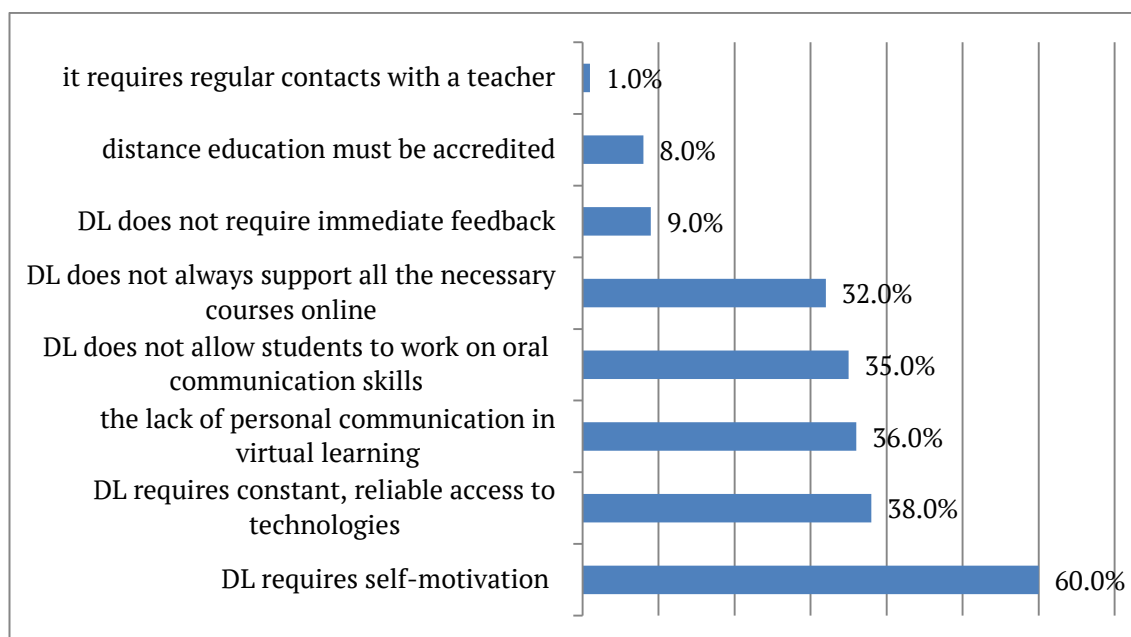


Fig. 4. Students' answers to the question "What are the main disadvantages of distance learning in your opinion?"

Thus, the survey makes it possible to draw the following conclusions: all four higher education institutions where the survey has been conducted have the information technology support of distance learning (websites, access to the Internet), students of all four higher education institutions are familiar with distance education, use this technology, but most of them prefer mixed learning. It is partially uncomfortable for students to work remotely with theoretical training materials and practical tasks, but they prefer automated remote testing. The most preferable aspects of the distance learning technology students are reading the theoretical material and viewing video lectures remotely and sending completed assignments over the Internet. According to the opinion of most students, the great advantage of distance learning is the ability to combine work and study and self-determination of the study time and place. As the most significant disadvantage of distance learning, students have indicated that it requires self-motivating learners.

DISCUSSION AND CONCLUSION

As noted above, the indicators of software and hardware provision of distance learning at Ukrainian higher education institutions confirm that there is a technical basis for the implementation of distance learning at national higher education institutions. However, modern digital technologies require updating of software and hardware and material resources for the implementation of technologies such as virtual and additional reality, artificial intelligence systems, “Internet of things”, next-generation management systems, and natural user interfaces.

All higher education institutions in Ukraine have an Internet connection, but not all are provided with the broadband high-quality access to the global network (broadband access), due to the fact that the level of broadband access penetration remains rather low. This indicator is substantially worsening for remote towns from region centers and cities-millionaires cities. The significant number of Ukrainian cities (especially small ones) still do not have fiber-optic cables, which makes it extremely difficult to develop broadband access ([Dubov, & Ozhevan, 2013](#)). Therefore, an important step in the development of distance learning at higher education institutions of Ukraine is to ensure their broadband access to the Internet.

A number of official documents have been adopted in Ukraine, which fully ensure the implementation of distance learning in the country, organization of qualitative training of specialists of various qualification fields. However, teachers distinguish such obstacles for the development of distance learning as their lack of desire and material interest, lack of computer skills, inadequate computer literacy, and their biased attitude towards innovative technologies ([Gromiak, Vasylenko, Galan, & Chorny, 2011](#)). Most of the teachers at higher education institutions (Puzyriov V. Ye., Rafalska O. J., Korotun O. V., Bukhaichuk K. L., Kukharenko V. M.) remain followers of mixed learning, which

effectively combines traditional and distance learning technologies, but not a full-fledged distance education. At the same time, they are trying to modernize the national education system according to modern standards and needs of integration into the world educational space and continue to introduce modern technologies of distance learning. Therefore, a promising trend for the development of distance learning at higher education institutions of Ukraine is the close collaboration of developers of software products for distance learning, distance education methodologists, and professors of higher education institutions for the strategy development of the new information technology application in distance learning.

Currently, higher education institutions of Ukraine independently organize distance learning with the involvement of state and sponsorship funds, grants, student fees, which adversely affects the pace of implementation of distance learning ([Sharan, 2012](#)). Collaboration of higher education institutions with commercial structures in the field of corporate learning is another promising trend for the development of distance learning in Ukraine. Such cooperation will allow higher education institutions to obtain additional sources of funding, including those ones for the organization of effective training.

Higher education institutions pay proper attention to support of distance learning: separate specialized distance learning subdivisions have been created, there are individuals who are responsible for the informational support of distance learning, distance learning training courses for teachers and students have been organised. However, the peopleware indicator for distance learning remains extremely low: the total number of specialists who directly provide and implement the learning process using distance learning technologies is based on the ratio 2.3 persons to 1,000 students. In addition, the data indicate the significant unevenness of this peopleware: from the total absence of trained specialists for the distance learning organization to a maximum of 320 people, however, this maximum is provided by only 23 teachers per 1000 students ([Ministry of Education and Science of Ukraine, 2007](#)). Therefore, one of the promising trends of distance learning development in Ukraine is the training of specialists in the field of distance education.

The high complexity of the development of distance learning courses complicates the work of teachers and technical staff. The creation of high-quality educational content, interactive multimedia interaction, qualitative multi-level tests takes a lot of time. Therefore, for the development of distance learning it is expedient not only to train specialists how to use remote learning technologies, but also how to develop platforms with intuitive, non-complex software interfaces for creating distance courses, to promote the distribution of qualitative software for the distance learning organization.

The development of the Internet of things, virtual and augmented reality, the proliferation of the artificial intelligence systems and the management systems of the next generation education, the creation of natural user interfaces, encourage the teacher comprehension and elaboration of methods of their application in education, in particular in the distance education. It is

necessary to develop information resources and educational and methodological developments to support new technologies of distance learning at higher education institutions of Ukraine. This is another promising direction in the development of distance learning in Ukraine.

For the past 10 years, massive open distance courses have become widespread. In particular, in Ukraine such courses have been organized by the Problem Laboratory of Distance Learning at the National Technical University of Ukraine "Kharkiv Polytechnic Institute", Taras Shevchenko Kyiv National University, and Luhansk State Institute of Culture and Arts (Voronkin, 2014). In 2014, the Prometheus platform (<https://prometheus.org.ua>) appeared with free online courses, prepared by leading Ukrainian and international experts. The "Critical Thinking for Educators" Prometheus Course has been completed by over 51% of educators. This is the higher percentage of successful completion than in any single major online Harvard or MIT online course (Kapustynska, 2018). Today, with the help of massive online courses, one can already get a master's degree in the most prestigious universities in the world, without leaving their own apartment. Coursera has launched a series of master's degree programs in the partnership with leading universities in the world. Recently, one of the most prestigious universities in the world, the Imperial College of London, has joined this initiative. EdX also has created micromaster's degree programs (MicroMasters) with MIT, Columbia University, and Berkeley University. These programs allow participants to start an online master's degree program and then enroll in a university and finish studies offline (Kapustynska, 2018). Such initiatives are promising trends for the development of distance learning at higher education institutions of Ukraine.

Distance education in Ukraine began developing with independence proclamation in the 1990's, it was introduced into the practice of higher education institutions in connection with the reform of all Ukrainian education systems in the early 21st century, it received a thorough comprehension and practical results during the period of education modernization over the past 10 years.

The analysis of the survey results of student answers of four classical, pedagogical, marine and agrotechnological higher education institutions regarding the practical implementation of distance learning in their institutions allowed to identify the realities of distance learning in Ukraine, that most of higher education institutions provide students with the access to distance learning.

The following prospects of distance learning development in Ukraine are highlighted: updating the software, hardware and material resources of higher education institutions for introduction of new technologies in higher education; providing the broadband access to the Internet to higher education institutions of Ukraine; organizing cooperation of developers of software products for distance learning, distance education methodologists and higher education institution teachers for the development of strategies for the application of new information technologies in distance learning;

implementation of cooperation of higher education institutions with commercial entities seeking ways to improve the qualification levels of their employees in the framework of the introduction of corporate training; provide peopleware of distance learning, training of specialists in the field of distance education, taking into account the current trends in the development of information and pedagogical technologies; development and distribution of platforms with intuitive, non-complex software interfaces for creating distance learning courses and software for organizing distance learning; development of information resources and educational and methodological developments in support of new technologies of distance learning at higher education institutions of Ukraine; ensuring the process of obtaining an educational degree (Bachelor's, Master's) at higher education institutions of Ukraine by taking massive open distance courses.

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