

# Problems of Distance Learning in Specialists Training in Modern Terms of The Informative Society During COVID-19

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## Summary

The article considers the training of specialists in education in the conditions of distance learning. It is lights up the advantages of distance learning and determined the characteristic features of distance learning of students training in the implementation of these technologies in the educational process.

The article focuses on the main aspects of computerization of studies as a technological breach in methodology, organization and practical realization of educational process and informative culture of a teacher. Information technologies are intensive involved in life of humanity, educational process of schools and higher educational establishments. Intercommunication is examined between the processes of informatization of the society and education.

### Key words:

*information technologies, distance learning, education, teachers training, informative culture of teacher.*

## 1. Introduction

In 21th century information became an important strategy of the humanity, without which not a single country of the world can do. Ukraine, as a young independent state, aspires to increase level of informative culture in its citizens. Therefore, in Ukraine, professional preparation as well as professional competence of a teacher of informatics is developed, which is not only the guarantor of high level of informative culture of a man but also a mortgage of introduction of new information technologies in all spheres of activity of the society.

In the modern world intensive information technologies implemented in life of humanity and in its activity is observed. Informatization gets more active to be applied in the educational process of schools and higher educational establishments. Intercommunication is improved between

the processes of informatization of society and education. Preparation of specialists which possess the newest computer oriented technologies presupposes the increase of level of knowledge of the society and global informatization. The mass use of facilities of computer technique has become the ordinary phenomenon in the modern world. Today a computer stands on the table of a scientist, a man of letters, an economist, a manager and others [2].

Distance learning in world practice is one of the established forms of learning. It is in demand by society, it is popular. Distance learning is the most democratic form of education that allows educating the general public. Distance learning methods are used in free economic education, in school education, in the system of teacher training, in the system of management training [10].

The central problem of development of the system of education is teacher training, where a teacher was, is and remains the main person.

However many teachers feel considerable difficulties making program development, in particular at the construction of informative models, adequate processes and phenomena which are studied, analysis of relationship of cause and effects, construction of the logically grounded conclusions as a result of researches and supervisions [9].

## 2. Analysis of recent research and publications

The philosophical theories of transition of the society to application of information technologies are studied by M. Amosov, D. Bellom, Z. Bzhezinskiy, N. Viner, V. Glushkov, I. Masuda, I. Sukhanov, E. Toffler, also get subsequent development of research as far as the problems

of informatization of a society V. Kasatkin, M. Kastells, D. Tapskott, I. Ursul, O. Shevchuk etc.

In higher educational establishments such scientists as R. Gurevich, M. Zhaldak, study the problem of preparation of teachers of informatics, U. Krasuk, M. Moshel, P. Stefanenko, O. Spirin etc. Having analyzed the problem of studies of informatics of future teachers we have arrived at the conclusion that problem is insufficiently developed, introduction of experience of foreign countries in particular. The following prominent scientists have dealt with the problems of distance learning:

- Richards-Schuster K., Ruffolo M., Hiltz B [20] lights up the innovative usage of mass open online courses, which at the same time require the involvement of various resources, investment in time, quality organizational support and awareness of the consequences of their passage by students;

- Zhang J., Lou X. Zhang H. [23] consider the study of the correlation between the flow of attention and productivity in different open educational resources, in particular, the authors found that understanding the patterns and dynamics of the flow of attention can positively affect the profitability of educational resources and prevent student overload;

- Zhang J., Sziegat H., Perris K. [24] describe the impact of educational resources and mass open online courses on the status of elite universities, in particular, substantiate the strategy of using educational resources to improve the quality of teaching and increase the global reputation of educational institutions.

- Semenikhina O., Yurchenko A., Sbrueva A., Kuzminskyi A., Kuchai O., Bida O. [21] present the results of quantitative analysis of open educational resources in the field of information technology. The study is based on the study of the content of ten platforms that provide access to open educational resources. The analysis and generalization of Internet sources to determine the popularity of educational platforms and resources on them. Quantitative data analysis was performed to determine the relative share of IT courses by various parameters: the relative share of IT courses in general and on each platform in particular, the language of instruction, quantitative content by thematic areas.

- Kuzminskyi A.I., Bida O.A., Kuchai O.A., Yezhova O.V., Kuchai T.P. showed the role of information support for educators as an important function of the system of postgraduate education [16].

- Kuzminskyi A., Kuchai O., Bida O.. revealed the possibilities of using the Polish experience of training

specialists in computer science in the system of pedagogical education of Ukraine [17].

**The aim of the research.** The purpose of the article is to consider the theoretical foundations of training in free economic education in the context of distance learning, which became too relevant during the introduction of quarantine in the conditions of COVID-19.

### 3. Research methods

A set of complementary methods was used to solve research problems: system-historical, logical-historical, chronological and diachronic; functional and structural analysis, which includes various subsystems; systematization and generalization of the processed materials for formulation of conclusions, recommendations and definition of ways of the further development of distance learning.

### 4. Research results

Presently in Ukraine information and telecommunication technologies found such three main directions of their usage in an educational process:

- the study of technologies which require the active use of computer (graphics and text editors, work in computer networks); study of the specialized technologies (creation of music, computer constructing and animation, modeling and making-up and others).

- the study of informatics as science which examines informative and logical models;

- use of computer as hardware in the study of basic sciences. Practice of work in educational establishments of different levels of accreditation testifies that the use of informative possibilities of the most modern technologies, as well as their various combinations in an educational process creates a technological breach in methodology, organization and practical realization of educational process during the study of different disciplines on all of levels of the system of education, including education.

Nowadays in the system of formation of the developed countries including ours, we pass to individualization of studies. It has become possible due to the wide usage of facilities of information and of communication technologies in education. In this connection the picture of readiness of man changes to implementation of professional functions and social roles. From the point view of higher professional education readiness to professional activity is:

- 1) a capacity to master new technologies in the professional sphere, considerable increase of level

of independent activity and readiness to making a decision;

2)

2) mobility and adaptiveness to the new requirements (a labour-market needs specialists, which has disciplinary knowledge, is able to quickly change specialization, to make effective and justified decisions in dynamically variable terms, to work in policultural environments);

3) increase of solidity of education under conditions of permanent growth of level of the newest technologies of modern production, automation et cet.;

4) having a good command of information and communication technologies in general and in the professional sphere in particular.

For this reason preparation of a future teacher must be directed to the personal development of students, to their achievement of certain level of culture of thinking, a number of personality qualities, salient as professionally important practically for any type of professional activity (responsibility, communicativeness, self-control, professional self-appraisal which is the important component of professional consciousness), and also to the development of capabilities (cognitive, communicative, and organizational). However much these qualities can be effectively and valuably formed within the framework of traditional educational environment and traditional educational process it is necessary to inculcate such forms and technologies in which an accent is made on independent educational activity of students (for example, projects and studies are problem oriented) [15].

Application of the computer in an educational process is related to the creation of new informative environment. Informative society is able to exist only under the conditions of high informative culture of his component population. Forming this informative culture requires in our opinion computerization of educational process both at middle and in higher school.

The use of computer in an educational process is carried out in three basic directions. It is an object of study, a means of studies and a means of broadening of intellectual possibilities of man. Application of new information technologies (NIT) in education entailed certain euphoria which did not fully realize the hope. It is therefore expedient to analyze convincing proofs of efficiency of NIT in comparing to the traditional forms of studies.

It is not simple to introduce NIT. It is impossible to put under a doubt efficiency of computer technique in widening intellectual possibilities of man, expedience of study of computer as a technological top of the time, use of computer as a means of studies. A doubt gives a positive answer for a question – whether the existent system of teaching students helps in a complete measure to master all advantages of

microelectronic revolution, compensating the irretrievable loss of traditional «non-computer» knowledge and skills. A computer today appears as a factor of change of ways, techniques, methods and maintenance of education [13].

Informatization of educational process requires growth of amount and quality of not only computers but also effective means of intercourse with them, powerful educational environments, tools of program, modern video technology, accessible to the wide circles of users. For this reason forming bases of informative culture of a teacher must presuppose forming the skills of the practical usage of the already developed programmatic facilities (menu-systems, control the system, graphics and text editors by bases information but other), mastering the system of knowledge of the functional logical structure of present computer facilities [9].

Nowadays, the pandemic has led to significant changes in the field of education around the world, it has caused educational problems in Ukraine. At the beginning of the quarantine in the spring of 2020, all educational institutions in the emergency mode switched to distance learning.

The vast majority of countries have closed all educational institutions for at least some time, and in some areas education has stopped. According to UNESCO, [6] as of April 2020, all schools were closed in 191 countries, home to more than 90% of all students on the planet.

According to a survey by the International Association of Universities [12] 60% of higher education institutions reported that COVID-19 has increased virtual mobility and / or online learning as an alternative to the physical mobility of students.

Substitute services - online courses - are gaining more and more strength. The popularity of educational platforms such as Coursera, edX and FutureLearn has significantly increased. In 2020 alone almost 32 million new users registered on these platforms, which is more than twice as many as in 2019 [5].

As noted by scientists [21], over the last decade the number of open educational resources provided by university repositories and project sites has increased significantly. According to Class Central statistics [22], a free catalog of online courses, in 2018 alone more than 11.5 thousand courses from more than 900 universities were offered (Fig. 1).

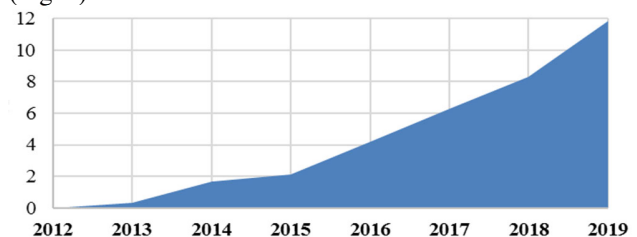


Fig. 1. Dynamics of the number of courses on open educational resources by research «By The Numbers: MOOCsin 2018» [22]

During the implementation of quarantine under COVID-19, public and international organizations partially took over the functions of state and local authorities. With the support of the Ministry of Education and Science, public and international organizations developed information and methodological materials and recommendations for participants in the educational process. For example, the NGO "Smart Education" has prepared a manual "Organization of distance learning at school. Guidelines" [19], and, in collaboration with UNICEF, developed distance biology lessons on COVID-19 [7]. EdEra has developed a free online course "On distance and blended learning formats" for teachers and school leaders [1]. International organizations provided informational and educational support.

Google has provided educational institutions with free access to all tools and services G Suite for Education [18]. The methodological basis for work on the distance form of education requires the maximum involvement of students in active learning, which increases their motivation to carry out professional training by means of distance learning; speed of feedback, constant presence of the teacher, systematic consultations, creation of a special forum for communication between the teacher and students; great interaction between students and students and the teacher, which contributes to the satisfaction of students from learning.

Ukraine has also conducted information campaigns such as "School, we are ready" to inform teachers, school leaders, students and parents about recommendations for safe and lifelong learning in COVID-19 in the 2020-21 school year.

Ukraine is implementing lifelong learning programs, in particular through the creation of the All-Ukrainian School online platform [3], for distance and blended learning for students in grades 5-11.

Currently, the Ministry of Education and Science plans to offer new TV lessons, which are being developed by Osvitoria NGO in cooperation with the Ministry of Digital Transformation and will be broadcast on a free platform. [4]. The introduction of distance technologies in the educational process is aimed at a deeper understanding of the educational material; formation of such competencies as: communicative (direct communication by means of a network), informational (search of information from various sources and possibility of its critical comprehension), self-education (ability to study independently). As practice shows, if a student does not learn to make decisions independently, determine the content of their educational activities and find ways to implement it, he will not be able to master a particular

discipline. In addition, distance learning performs an educational function – contributes to the formation of leading personality traits: activity, independence, self-improvement, creativity [8].

The necessity of informative culture formation in distance learning for future teachers predefines that the informative providing of educational process changes in higher education establishment and schools, an informative infrastructure is formed, the network of informative bases of knowledge, electronic educational and interscientific communications broaden. Moreover, the process of informatization of pedagogical education initiates:

- improvement of methodology and strategy of selection of maintenance, methods and organizational forms of studies, educations which answer a task of development of a future teacher in the modern terms of informative society;
  - planning and realization of the scientific and methodological systems of studies, oriented to development of intellectual potential of students, on forming abilities to obtain knowledge, redo information;
  - creation and application of facilities of new information technologies, systems of informative exchange, which provide the functions of collection, production, accumulation, storage and passing information [14].
- The level of informative culture on the whole influences on professional teachers training, consequently, a process influences on education [9].

The use of computer networks in Ukraine has a number of implicit advantages before already existent technologies of studies, the major of which are:

1. Expansion of informative resources of subjects of computer network. Connecting to the global computer network, for example such as the INTERNET, enables users to get free access to the enormous arrays of information, in particular educational software, modern computer programs, catalogues of the best world libraries, various databases and others.
2. Possibility of the considerable in-plant of teacher training, as a basic acting person of an educational-educate process. Global computer networks enable not only to apply a considerably wider spectrum of educational materials in teaching activity but also utilize the wide informative resources of computer networks for the professional growth, to support close creative copulas with the colleagues, and in a prospect - to promote the qualification by the controlled or distance studies on the special programs.

3. Additional educational possibilities are prepared for students. Participating in the robot of global computer networks enables them to accomplish one of the most essential tasks – the increase of “computer literacy” of students, working out methods by which it is possible to utilize possibilities of global networks. Moreover, a user gets a unique possibility to utilize various on-line tutorials, join correspondence courses which are conducted nationally, and foreign educational establishments, to get remarkable linguistic practice in intercourse at on-line conferences and, eventually, to join a global dialog with students and teachers of the whole world.

One of the main advantages of computer networks is the use of modern facilities of the computing engineering as a universal instrument of processing various information. Especially valuable from the point of view of studies is work in a computer network, which is practically impossible without the intensive use of the numerous application programs (text and graphic editors, spreadsheets, bases given), that, sure, will stimulate them deep study [11].

## Conclusions

The effectiveness of pedagogical support in the process of distance learning is achieved by the following conditions: the presence of computer literacy, accounting for psychological patterns of perception, memory, attention and age of students, their individual and personal characteristics, creating psychological comfort, including the ability of the teacher to dialogue by means of information technologies, to find individual approach to students, realization of specially organized self-control of students and systematic control of teacher on generalization of knowledge provided at development of the corresponding educational programs, possession of skills of independent work, maintenance of effective interaction of all components of distance learning system.

Consequently, the development of the system of education in Ukraine is related to all of modern aspects of informatization of educational process. These aspects are: humanitarization of education, activation of educational activity, humanizing of educational process, intensification of intercourse of teachers and students and gaining specific weight of independent, research character of educational activity, fundamentalization of knowledge and granting the results of studies of practical meaningfulness, integration of educational objects and differentiation of studies in accordance with individual queries, inclinations and capabilities of students, providing basic levels of knowledge in different spheres.

## References

- [1] About distance and blended learning formats (2020) URL: <https://courses.ed-era.com/courses/course-v1:MON-DECIDE+1+2020/about#developers>].
- [2] Alekseev O.M. (1998) End-to-end design and computer training in the system school - college - university. Problems of education: Scientific and methodical collection / Col. aut. K. : IZMN, Issue. 13. 87-94.
- [3] All-Ukrainian school online (2020) URL: <https://lms.e-school.net.ua/>
- [4] All-Ukrainian school online-2: when will start broadcasting lessons and what will change in the project (2020) URL: <https://life.liga.net/poyasnennya/interview/vseukrainskaya-shkola-onlayn-2-kogda-nachnut-translirovat-uroki-i-cto-zmenitsya-v-proekte>.
- [5] Bakirov V., Ogarkov M. (2020) A pandemic can forever change higher education. Mirror of the week. January 16., URL: <https://zn.ua/ukr/EDUCATION/pandemija-mozhe-nazavzhdiz-miniti-vishchu-osvitu.html>
- [6] COVID-19 education response: Preparing the reopening of schools: resource paper (2020) URL: <https://unesdoc.unesco.org/ark:/48223/pf0000373401?web=1>
- [7] COVID-19: lessons for students in grades 6-10 (2020) URL: <https://nus.org.ua/covid19/>.
- [8] Datsenko G.V., Suzanskaya Z.V. (2017) Distance learning as a means of stimulating self-education. Distance learning as a modern educational technology: materials of the interuniversity webinar (Vinnytsia, March 31, 2017) / ed. L.B. Lishchynska. Vinnytsia: VTEI KNTEU, 17-20.
- [9] Fundamentals of new information technologies in teaching: A guide for teachers / Author. col. ; For order. Yu.I. Mashbytsia / Institute of Psychology. G.S. Kostyuk Academy of Pedagogical Sciences of Ukraine. K. : IZMH, 1997. 264.
- [10] Glukhovska N.A. (2016) Problems and prospects of distance learning in the system of training future professionals in the context of European integration. Current issues of pedagogy, psychology and vocational education. №2. 67-71.
- [11] Gurevich R., Podolyanchuk S., Gurevich I. (1998) The use of computer networks in educational institutions. Pedagogy and psychology of vocational education. № 3. 83-92
- [12] International Association of Universities (2020) URL: <https://www.iau-aiu.net>
- [13] Klepko S. (1998) Integrative potential of computer science and computer science in the educational process. Pedagogy and psychology of vocational education. № 2. 35-43.
- [14] Kolomiets A.M. (2007) Information culture of primary school teachers: Monograph. Vinnytsia: VSPU, 379.
- [15] Kravtsova A.Yu. (2007) Modern trends in the training of future teachers of computer science. Information technology in education: congress of conferences. ITO-ROI. [http://www.ito.edu.ru/sp/SP/SP-0-2007\\_12\\_11.html](http://www.ito.edu.ru/sp/SP/SP-0-2007_12_11.html)
- [16] Kuzminskyi A.I., Bida O.A., Kuchai O.A., Yezhova O.V., Kuchai T.P. (2019) Information Support of Educationalists as an Important Function of a Postgraduate Education System. Revista Românească pentru Educație Multidimensională. Volume 11, Issue 3. 263-279.
- [17] Kuzminskyi A.I., Kuchai O.V., Bida O.A. (2018) The use of Polish experience in training specialists in computer science in the system of pedagogical education of Ukraine. Information technologies and teaching aids. Volume 68. №6.

- 206–217.  
<https://journal.iitta.gov.ua/index.php/itlt/article/view/2636>.
- [18] More on UNESCO's COVID-19 Education Response (2020)  
URL:  
<https://en.unesco.org/covid19/educationresponse/consequences>
- [19] Organization of distance learning at school (2020) URL:  
<https://mon.gov.ua/storage/app/media/zagalna%20serednya/metodichni%20recomendazii/2020/metodichni%20recomendazii-dustanciyna%20osvita-2020.pdf>
- [20] Richards-Schuster K., Ruffolo M., and Hiltz B. (2019) “Innovating Practices to Prepare Students for Graduate School: Lessons From a Social Work MOOC” *Journal of Social Work Education*, 55(2), 314-326.
- [21] Semenikhina O.V., Yurchenko A.O., Sbrueva A.A., Kuzminskyi A.I., Kuchai O.V., Bida O.A. (2020) Open digital educational resources in the field of IT: quantitative analysis. *Information technologies and teaching aids*. Volume 75, №1. 331–348 <https://journal.iitta.gov.ua/index.php/itlt/article/view/3114>
- [22] Shah D. (2018) By the numbers: MOOCs in 2018. URL: <https://www.class-central.com/report/mooc-stats-2018/>
- [23] Zhang J., Lou X., Zhang H., and Zhang J. (2019) Modeling collective attention in online and flexible learning environments. *Distance Education*, 40(2), 278-301.
- [24] Zhang J., Sziegat H., Perris K., and Zhou C. (2019) More than access: MOOCs and changes in Chinese higher education. *Learning, Media and Technology*, 44(2), 108-123.