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DISTANCE LEARNING THROUGH THE MOOC PLATFORMS

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Abstract.

Relevance: studying in a pandemic was a challenge for education, which was not ready for the mass introduction of online platforms in the system of conventional (formal) learning. However, Massive open online courses or MOOC platforms have become an active learning tool in many countries over the last ten years. Examples of successful online education practices in Ukraine are the Online Platform of Non-Formal Education, the Prometheus platform of open public online courses, and the Educational Era online education studio.

The purpose of the study is to review the capabilities of MOOC platforms in the context of distance learning.

Methods: analysis and synthesis; generalizations, methods of mathematical statistics.

Results: an overview of educational online platforms, their content, accessibility and variability. It is established that the MOOC platforms today are an effective means of organizing distance learning, which are able to ensure the formation of an individual learning trajectory for students.

Conclusions: the reserves of the global innovative educational environment create opportunities for vocational education institutions to review their capabilities and organize effective distance learning for students through MOOC platforms. The latter contain effective tools (video lectures, test and graphic constructors, web resources, etc.) to ensure the productivity of learning and feedback between teacher and student.

Keywords: *distance learning, open educational resources, mass open educational online courses, MOOC.*

Introduction. Distance education in a pandemic has become a challenge for education. The world was not ready for such a rapid transition to distance learning. However, a structured online education space has already been developed with the help of MOOC platforms. They became the saving tool for the national education system, which provided the necessary conditions for distance learning of pupils and students.

Sources of research. Fundamental scientific researches of distance learning are presented in scientific researches by O. Borzenko, S. Denysenko, B. Lytovchenko, O. Oliinyk, V. Ustymenko, G. Chornous and others. These authors define distance learning as an organizational innovation and a priority for the development of the modern education system. However, a comprehensive study of the capabilities of MOOC platforms in terms of distance learning in the domestic pedagogical science is not presented enough.

Purpose of the article: to review the possibilities of mass open online platforms (MOOPs) in the context of distance learning.

Methods: analysis and synthesis – to determine the status and level of development of the research problem; generalization – to formulate conclusions and recommendations on the prospects for the use of MOOC platforms in terms of distance learning; methods of mathematical statistics – to build infographics on the research topic.

Results and discussion. One of the priority areas of the modernization program of secondary and higher schools is recognized as distance learning. In 2000, the Concept of Distance Education Development in Ukraine was adopted, the Ukrainian distance learning system – UDL System and the Ukrainian Center for Distance Education (UCD), centers and laboratories on the basis of higher education institutions were created.

Distance learning is successfully used in higher education, in professional training and retraining, raising and improving the professional level of specialists, for self-education. At the level of vocational education institutions, distance learning is a new thing.

With the development of a global innovative educational environment, distance learning has received favorable conditions for its development, associated with the rapid creation and dissemination of content. Thanks to information technology, the path from the author of information to its consumer has been significantly reduced. Traditional sources of knowledge – books, conferences, magazines, etc. require a significant amount of time for the information to reach the end user. The global innovative educational environment is able to create knowledge in real time. This type of content is called an open educational resource (OER).

With the unlimited spread and availability of technology, OER has significant potential to create a community of users who use, share and constantly supplement open educational resources with information, thereby improving the content of education (Benkler, 2005). This process is two-way: the creation of information-rich content allows you to keep OERs up to date and create new open educational resources (Petrides, Jimes, 2008). The advantage of OER as a source of educational content is that joint temporary working groups (ad-hoc groups), which participate in the regular and meaningful saturation of OER, are more effective than individual authors. In addition, OERs may contain personal recommendations, reflect the values and practical experience of the authors. At the same time, open educational resources become social and turn into mass open online courses (MOOCs).

Open Internet sources announce that MOOCs provide an opportunity to study with teachers from the world's leading universities – people who have weight in academia, join a multinational student group (in discussion forums) and obtain a document confirming the successful completion of the course. The largest online platforms present videos and evaluate the acquired knowledge. The difference is what courses are offered and who reads them and how (popular online course platforms (MOOC).

In the countries of the European Union, learning with the help of MOOC-platforms is the leading form of acquiring knowledge, skills and abilities in the distance learning system. MOOCs have gained considerable popularity in the last 5 years: 2014 is considered to be the year when MOOCs changed the world (Na T., 2014). This is due to the rapid increase in the number of students who have taken online courses around the world. According to the report "By The Numbers: MOOCs in 2018", in 2018, 20 million new users registered (By The Numbers: MOOCs in 2018). For comparison: in 2016-2017, this figure reached 23 million people.

The five most popular online courses are: Coursera, edX, Udacity, Khan Academy, Codecademy. Table 1 provides general information on MOOC providers on the number of students / courses and the cost of training. The data presented in *Table 1* and Figure 1 are presented based on the results of the annual reports (2017-2019) of the MOOC platforms on their work.

MOOC providers offer about 630 specializations of 10 different types. The vast majority of them belong to Coursera and edX. In 2018 alone, more than 120 new specializations were introduced. Regarding the distribution of courses by subject, 40% of them are business and technology *(Fig. 1)*.

Examples of successful online education practices in Ukraine include the online platform for non-formal education, the platform for mass open online courses Prometheus, and the online education studio Educational Era.

Table 1

General characteristics of MOOC providers (according to online platforms)

Provider	Number of students, million people*	Number of courses	The cost of the course
Coursera	22	3100	free, certificate $ 49
edX	< 1	2200	Free, or certificate and study credits – depending on the course and university
Udacity	2	72	Free, for limited access, $ 150 per month – for extended access,
XueatangX	6,2	1400	Free, for limited access
FutureLearn		1 000	
Khan Academy	1,2	4300 (відео)	Free
Codecademy	24	556	Free

* includes all students who have started the course, even if they have never completed it

The online platform of non-formal education is implemented with the support of DVV International in Ukraine, the International Center for Non-Formal Education and the Ukrainian Association of Adult Education in order to:

– to promote public awareness of educational programs implemented in Ukraine;

– establishing communication between those wishing to study and educational institutions;

– awareness of the value and development of lifelong learning culture;

– creating conditions for the full realization of the potential of the individual and increase its social, civic activity and responsibility.

The Prometheus mass open online course platform is the first and largest project to introduce blended learning technology for adults in Ukraine. The mission of the platform is to make the best courses from the world's leading teachers, universities and organizations accessible to all. To date, there are 755,120 registered users on the platform, 1 904 013 – course entries, 229 253 – generated certificates and 145 634 users with certificates.

EdEra online education studio became famous in the spring of 2014, when two students of the Faculty of Radiophysics decided to create an online course in physics, inspired by the world's best practices. The desire to introduce a culture of quality educational product in Ukraine has been embodied in online courses, textbooks, special projects. EdEra is now a bridge between expert authors and users, numbering nearly 9 million. There are 19 online courses on the platform; 11 interactive textbooks filled with theoretical videos and educational texts from online courses; 10 special projects containing dynamic videos, theoretical materials, test examples and a forum to discuss learning.

All courses (60 of them) presented on online platforms are formed in five main areas *(Fig. 2)*.

Practically oriented online platforms for teachers, students and their parents "NaUrok" and "Vseosvita", which presents a series of webinars on the development of critical thinking of students, personal competencies, the use of innovative technologies in the educational process of the school, etc .; Internet conferences dedicated to modern educational trends and psychological and pedagogical aspects of teacher work; competitions and Olympiads for pupils in academic subjects. The intensity of the creation of online platforms and training courses for teachers is caused by the reform of the education system in Ukraine, namely:

1) approval of a new Standard of Primary Education, the main idea of which is the focus on the acquisition of competencies by students, not just knowledge. Therefore, in the 2018/2019 academic year, all educational institutions conduct lessons according to the new Standard, which requires the teacher to acquire new competencies and improve the professional level;

2) creation of an inclusive educational environment, which requires the training of teachers who will teach children with special educational needs in inclusive classes of regular schools;

3) motivating the conditions for true teacher autonomy. The updated Law on Education allows for various forms of in-service training – each teacher must study for at least 150 hours over 5 years. Where exactly – he will choose for himself. This will stimulate them to learn new teaching methods and form critical thinking of students;

4) recognition of formal, non-formal and informal education as three main forms. Thus, the state recognizes that such education has a right to exist, and its results can be recognized. However, procedures have yet to be written for this;

5) implementation of the formula 4C of the Program of the Educational Alliance "Partnership for Learning
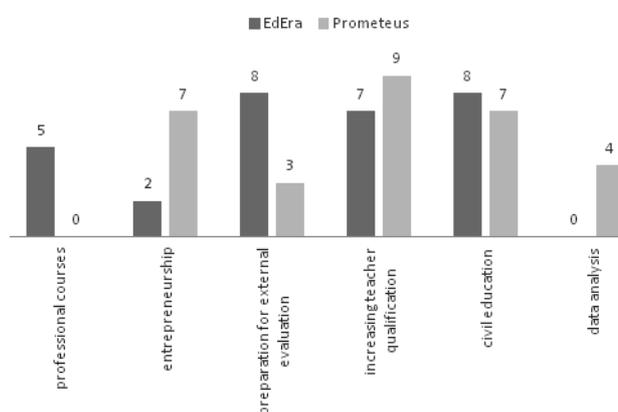

Fig. 1. Distribution of MOOCs by subjects (according to online platforms)

Fig. 2. Distribution of courses of online platforms Prometheus and EdEra

in the XXI Century": creativity, critical thinking, cooperation and communication skills. It is these knowledge and skills that will be needed in the future by both the student and the teacher *(Figure 3)*.
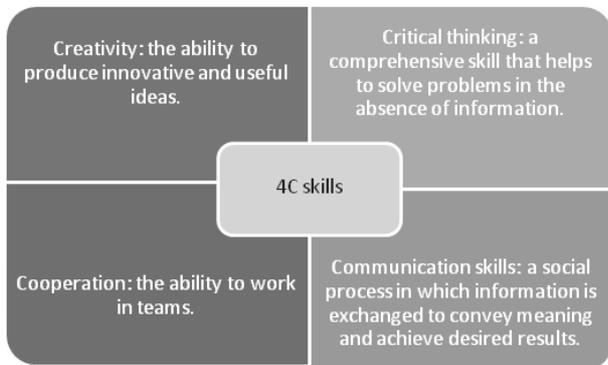

Fig.3. 4C personality skills of the XXI century

Conclusions. Thus, the review of the proposed programs, content, availability and variability of MOOC platforms indicates the possibility of their use in distance learning in vocational education institutions. Reserves of the global innovative educational environment create opportunities for vocational education institutions to review their capabilities and organize effective distance learning for students through MOOC platforms that contain effective tools (video lectures, test and graphic constructors, web resources, etc.) to ensure learning performance and feedback. language between teacher and student.

Prospects for further research include a review of the features of the use of MOOC platforms in the teaching of special subjects in vocational education institutions.

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ДИСТАНЦІЙНЕ НАВЧАННЯ ЗАСОБАМИ MOOC-ПЛАТФОРМ

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Реферат.

Актуальність: освіта в умовах пандемії постала викликом для освіти, яка виявилася не готовою до масового впровадження онлайн-платформ у системі звичного (формального) навчання. Проте Massive open online course (масові відкриті онлайн-курси) або MOOC– платформи за останні десять років вже встигли стати активним засобом навчання в багатьох країнах світу. Прикладом успішних практик онлайн-освіти в Україні можуть слугувати Онлайн-платформа неформальної освіти, платформа масових відкритих онлайн-курсів Prometheus, студія онлайн-освіти "Educational Era".

Мата дослідження – здійснити огляд можливостей MOOC-платформ в умовах дистанційного навчання.

Методи: аналіз та синтез; узагальнення, методи математичної статистики.

Результати: здійснено огляд освітніх онлайн-платформ, їх змістової наповненості, доступності та варіативності. Встановлено, що MOOC-платформи на сьогодні є дієвим засобом організації дистанційного навчання, які здатні забезпечити формування індивідуальної траєкторії навчання здобувачів освіти.

Висновки: резерви глобального інноваційного освітнього середовища створюють можливості закладам професійної освіти переглянути свої можливості та організувати ефективне дистанційне навчання здобувачів освіти засобами MOOC-платформ. Останні містять дієві інструменти (відео-лекції, тестові та графічні конструктори, вебресурси та ін.) для забезпечення продуктивності навчання та зворотного зв'язку між викладачем та учнем/студентом.

Ключові слова: *дистанційне навчання, відкриті освітні ресурси, масові відкриті освітні онлайн-курси, MOOC.*