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Innovation in Education and Educational Innovations in Conditions of Covid-19 Pandemic in Ukraine

In this article we will focus on the impact of COVID-19 on the educational market and the ways in which online studying can serve as a tool for international and national educational programs. We will also learn and compare the ways of educational institutions in the U.S. and Ukraine that were forced to carry out a massive experiment in proving online education promptly.

Keywords: educational innovation, technology, sustainable development, infra-structural development, innovation development, crisis management.

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Introduction

World pandemic of the coronavirus disease 2019 (COVID-19) caused global transitions in most important areas of wellbeing of the society. World health organizations, NGOs along with business structures and governmental institutions faced the necessity of finding new ways for maintaining sustainable development. The pandemic caused a global crisis, especially for the countries with high level of poverty, out-dated health systems and sanitation. At the same time a basic necessity in education requires a global cooperation and exchange of experience in proving effective measures for

providing safe educational programs offline and implementing tools for on-line learning.

The aim of the article is to explore ways of innovative development of educational institutions for providing safe learning process by implementing online tools and building up international collaboration with higher educational institutions.

For achieving this goal, we will need to learn general data regarding the online education industry in the United States, analyze it as a whole structure, identify the main characteristics of the market, the opportunities in the sector, describe the ways and tools to access the online market.

Discussion

The World Health Organization (WHO) officially declared the outbreak of COVID-19 a public health emergency of international concern on 30 January 2020. The WHO issued a new 2030 agenda for sustainable development, where it emphasizes that for achieving the sustainable development goals balancing three dimensions of sustainable development: economic growth, social inclusion and environmental protection [1].

COVID-19 pandemic shows that sustainable development goes beyond national strategies and requires international dialogue and cooperation.

Educational issues must be addressed in national strategies of the countries in order to provide educational programs in most safe and efficient way.

A lot of scientific works are devoted to the research of organizational aspects, marketing, management, fundraising and endowment of educational institutions. In Ukraine, this problem has been studied by such scientists as I. Alyoshina, I. Varyash, I. Kuklina, V. Klyuev, A. Pavlutsky, O. Radzetska, O. Skrypniuk, M. Tarasova and others [3, 4]. Fundamental to this issue are the works of V. Alexander, I. Ansoff, B. Asherwood, L. Bertlis, N. Bris, K. Klotfelter, F. Kotler, M. Mescon, R. Strechmts, J. Hood, M. Trimarchi and others [5, 6]. The aspects of pandemic COVID-19 and sustainable development goals is studied by Kristin Heggen, Tony J. Sandset, Eivind Engebretsen from Centre for Sustainable Healthcare Education in Norway.

Impact of COVID-19 on International Mobility in the United States

To get an idea of the magnitude of the study abroad source market in the United States, according to the latest Open Doors report on international mobility, in the 2017/2018 academic year there were 341.751 American students abroad, which represents a growth of 2.7% compared to the previous year [7]. Due to the effects of the COVID-19 pandemic, this positive trend will be affected in the 2020/2021 academic years by the restrictions on international student mobility as a result of this health, economic and social crisis. Thus, many universities in

the United States are cancelling their student exchange programs for the fall semester, so their students will not be able to participate in study abroad programs at foreign universities [8].

However, it is observed that the interest of American students to study abroad remains high, as 84.7% of the participants in the 2020 Snapshot Survey of Diversity Abroad are still interested in traveling abroad for their studies in the future [9].

On the other hand, in this same survey, 72% of students say they do not have fears and insecurities about traveling abroad in the future. On the other hand, from the point of view of the reception of international students, 88% of the educational institutions of the United States participating in the survey carried out by the Institute of International Education (IIE), foresee that the enrolment will be reduced for the 2020/2021 course. Furthermore, it is projected to fall by 25% without taking into account that this number had already been falling since 2016, with a fall of 10.8% [8]. Globally, some experts believe that the positive trend in the number of international students will take at least 3 years to recover [10].

One of the main reasons of significant decrease of the number of international students in the US is visa and flight limitation, especially from countries most affected by COVID-19 that the administration of United States ought to apply.

Now, let's consider the educational system of United States of America. It covers preschool education, second-

ary school, higher education. Corporate education and some specific vocational studies and courses can be also included in general educational system of the U.S. (Fig. 1).

Before obtaining higher education, students in the United States go to primary and secondary school, which combined lasts 12 years. Therefore, they correspond to the first twelve grades. Similarly to Ukraine, primary school (or "elementary school"), starts at the age of six. After studying for five or six years the children attend secondary school.

Secondary school has two programs: "middle school" or "junior high school" and the second is "high school." The students obtain a diploma or a certificate when graduate from high school. After graduating from 12th grade, American students can go for higher education in colleges or universities.

Corporate education refers to the companies that provide education primary for adults, mostly focused on their employees of a certain company. In the United States companies are interested in investing in training for staff, because market is constantly developing and requires new skills from employees. We can also call it a proactive corporate behavior, as the companies apply innovative approach in such way.

There are some partnerships between educational institutions and business representatives provided on social bases. It is frequently practices to send managers who represent certain business or industry as members of the board of trustees at educational institutions. Also, prominent managers from business can undertake respectful position of teaching in the university, which also enhances the links between the university and business. Some organizations provide programs and grants to scientists and welcome them in the laboratories and production premises of the producers and innovation driven entities.

Universities may receive equipment from corporations, thus introducing the students to the latest tech-

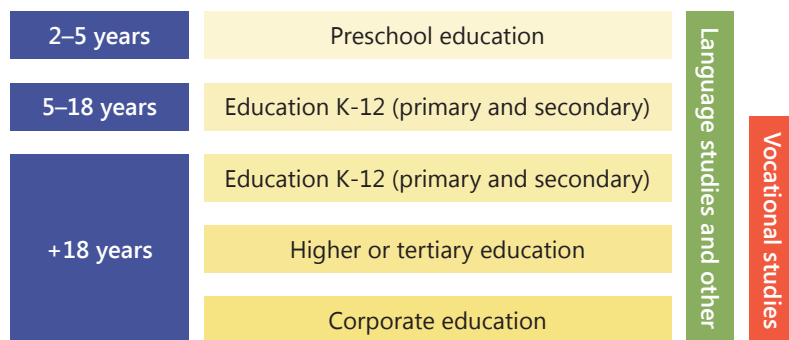


Fig. 1. Educational levels in the United States of America [7]

nology and better understanding of the industry development.

We should also mention that students are welcomed to pass their practice or internship in their potential employer. At the same time this is beneficial for corporations that have access to new human resources and can invest in the future employees [8].

In comparison with the U.S. educational system, Ukrainian students start going to school at the age of six. After graduating from school from ninth or eleventh grade they can enter a technical/medical school for incomplete higher education or a university for complete higher education, respectively (Fig. 2).

Similarly to the U.S. educational system, there are practices and internships and internships for students in Ukraine. Students at different universities can choose to go for practice to the company from private sector or state entity. In fact, by the Ukrainian Law the students, who obtained their education on state's expense and were provided with monthly scholarships, must work for the state during three years.

There are four levels of accreditation according to the status of higher education institutions:

- the first level is a technical school, a school, other higher education institutions equal to them;
- the second level is a college, other higher education institutions are equivalent to it;
- third and fourth levels (depending on the consequences of accreditation) — institute, conservatory, academy, university.

Bologna Process is implemented in Ukraine and considered as a national education system in universities of the state. Therefore, the diplomas are equal to the European ones. Now, let's consider educational and qualification levels of higher education in Ukraine structured in a table.

We should note, that non-governmental organizations (NGO) play an important role in educational sphere. They provide scholarships, help people with disabilities, organize training course, summer camp for children and other activities.

There are many contests and grants for the students in Ukraine. One of the most prominent and active non-government foundations in educational sector is the Victor Pinchuk Foundation, which is an international, private and non-partisan philanthropic founda-

tion based in Kyiv. The goal of Pinchuk Foundation is to empower future generations to become the change makers of tomorrow. To achieve this goal, the foundation has developed a variety of projects, built strong partnerships in Ukraine and worldwide, and keeps investing in three main areas [12]:

- in people, to boost human capital,
- in society, to promote social responsibility,
- in the world, to foster a more integrated world.

We should note two main projects of The Victor Pinchuk Foundation that carry our educational activities: Zavtra. UA and WorldWideStudies. The programs are aimed at the young generation, mostly students from third grade and higher.

Among active non-profit non-governmental organizations, we should mention The Institute of Ukrainian Studies. The mission of the organization is to promote inclusive society in Ukraine by engaging people with disabilities to active social life and educational activities concerning the protection of their rights. In its daily activities our NGO organizes projects aimed at increasing cooperation with local youth, ensuring active participation of young people in local life, especially youth with disabilities and youth with fewer opportunities. Regarding international department, they have partnerships in most of the countries in Europe and Caucasus. Their participants regularly take part in Erasmus+ training courses and youth exchanges [13].

As an example of cooperation between social area, business and government is worth to highlight the information about a quickly developing educational NGO called GoCamp. It is the biggest volunteer program in Eastern Europe that gives children the opportunity to learn English with foreign volunteers in Ukraine [20].

GoCamp is also about educating a new generation of Ukrainians, teaching them 21st century skills, active citizenship and breaking cultural barriers. GoCamp Global Office is an NGO aimed at fostering informational, polit-

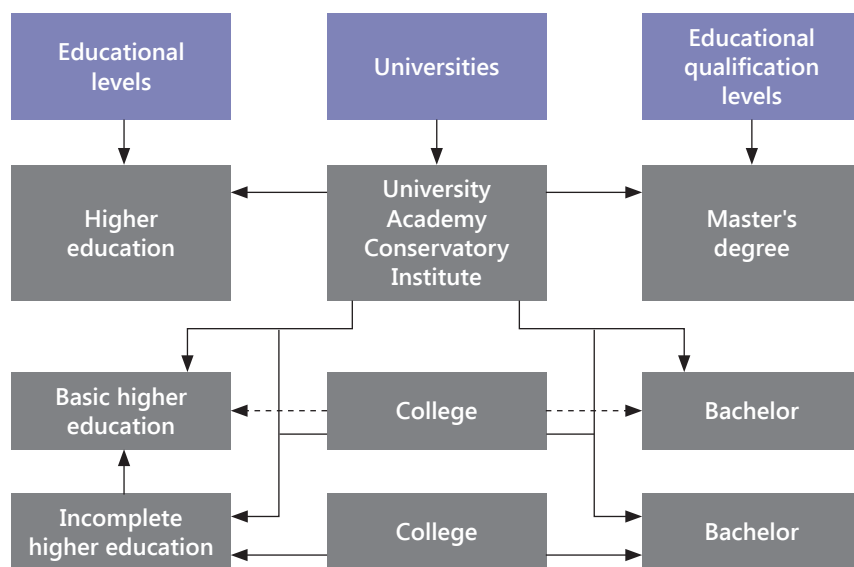


Fig. 2. Educational levels in Ukraine [11]

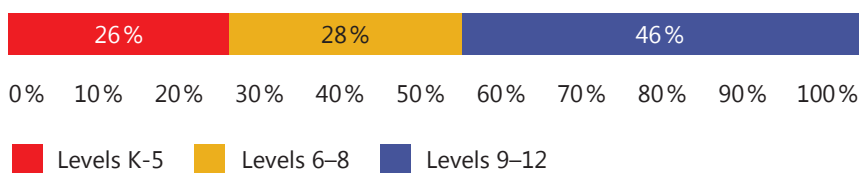


Fig. 3. Distribution of kindergarten, elementary and secondary students over total students with a full-time online school in U.S. [14]

ical, economic, cultural and social integration of Ukraine into global community, as well as internal integration. This NGO initiates and implements projects that promote internal and external integration into global context and creating a framework for educating the new generation that shares the values of the free world. GoCamp Achievements are: 800 volunteers from 65 countries of the world; 1356 schools-participants of GoCamp; 144.000 children from all over Ukraine [20].

Now, let's draw our attention to online education. The students with disabilities or those who for personal reasons chose home education, quite frequently preferred having online classes.

Before the Covid-19 epidemic, the main reasons why American students from kindergarten, elementary and middle school to high school were receiving online education were temporary causes such as illnesses, accidents, behavior problems, and other causes such as frequent changes of address or having professions that require a lot of dedication (athletes, actors, etc.). However, in high school, the main reason was the delay with respect in understanding the material in comparison with their classmates [7].

Nowadays, there are a large number of online platforms used for classes, among which the most popular in U.S. and in Ukraine are Zoom, Skype, Microsoft Team and Google video/conference platforms. In China, where Google and many other platforms are blocked, the most common class teaching platforms are MOOC (Massive open online course) and Tencent [15, 16, 17].

Let's have a close look at Google Meet, more popular among corporations and universities' studies, and

Zoom, which is more popular for secondary schools' pupils (Fig. 4):

In terms of core features, the leading platforms offer very similar products, which we will compare in the Table 1 [15, 16, 17].

Now, we can make a ranking based of most important features that the users receive from the applications for learning motives. We will analyze the characteristics evaluated by the scale where the highest point is 10 and the lowest point is 1.

As we can see from the tables 1, where the highest level is 10 and the lowest is 1, the applications for online video calls include such basic capabilities:

- video conferencing;
- digital audio calling;
- instant messaging;
- screen sharing;
- call recordings and transcripts;
- virtual/blurred backgrounds.

Therefore, most of the significant distinctions are in call length and participant limits, and special features. In future article we should study more thoroughly international programs possible for adaptation in Ukraine and Ukrainian tailor-made programs such as Shkola, Prometheus and others.

Conclusions

In this article we explored different options for innovative development of



	Google meet	Zoom
Free Option	Yes	Yes
Price range (monthly)	6–25\$ per user*	14.99–19.99\$ per host
Maximum participants	Up to 250	Up to 1.000**
Platforms supported	Windows, MacOS, Android, iOS	Windows, MacOS, Android, iOS
Call Recordings	+	+
Screen Sharing	+	+
Group Messaging	+	+
Integrations	Other Google services, Skype, Pexip Infinity	Workplace, Salesforce, Google services
Other Features	Encrypted calls	Polls, whiteboard, encrypted calls

* All advanced Meet features are now included at no additional cost for all G Suite subscriptions until September 30, 2020.

** Support for 1.000 participants requires Large Meeting add-on.

Fig. 4. Comparing Google Meet and Zoom [16]

Table 1. Comparing video/conference platforms

Name	Ease of set up	Users friendly	Target audience	Brand awareness
Google Meet (Hangouts)	8	7	Mostly users of Google services, corporate clients	8
Skype	6	9	Business and private individuals, mostly adults	9
Zoom	7	8	Younger users, mostly students and pupils	7
Apple FaceTime	9	9	Users of Apple products	6
Join.Me	5	6	Businesses, organization, entrepreneurs	5
GoToMeeting	7	9	Targeted at people and entities who need to do business presentations, meetings and collaborations	4

educational organizations in order to provide learning process safely in the conditions of pandemic. We learned that most educational institutions opted for online education. In this study we considered the online education sector as a temporary solution to the COVID-19 crisis and as a market with potential for the development in nearest future both as a substitute of traditional face-to-face education, and as an alternative way of studying. We analysed famous available online learning platforms in the world after which the authors made a comparison of the most popular tools for online conferences and meetings.

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Інновації в освіті та освітні інновації в умовах пандемії COVID-19 в Україні

У цій статті ми зосередимося на впливі COVID-19 на ринок освіти, а також на тому, як онлайн-навчання може стати інструментом міжнародних та національних освітніх програм. Ми також вивчимо та порівняємо практики освітніх закладів США та України, які були змушені провести масштабний експеримент з оперативної реалізації онлайн-освіти.

Ключові слова: освітні інновації, технології, сталий розвиток, інфраструктурний розвиток, інноваційний розвиток, антикризове управління.