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Conference on Land Economy and Rural Studies Essentials**IMPACT OF THE CORONAVIRUS (COVID-19) PANDEMIC ON
EDUCATION**

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Abstract

In 2019, humanity faced a new challenge and threat called the coronavirus pandemic that has been affecting nearly all societal strata worldwide. A number of governmental measures have been taken to counter risks of the disease. These measures included travel restrictions, mandatory travel quarantines, social distancing, bans on public gatherings, closures of schools and other educational institutions, businesses, self-isolation, calls for people to work at home and curfews. The topic is relevant due to the fact that today humanity is struggling with the coronavirus pandemic. Closures of educational institutions in 2020 was a preventive measure to reduce the spread of the pandemic. In this regard, it is necessary to find out how the coronavirus pandemic has affected the education sector. The paper explores the impact of the previously unknown coronavirus pandemic on education. The paper is an account of events highlighting the problems encountered in education because of the spread of COVID-19. Closures of educational institutions had a negative impact on student performance, opportunities for their growth and social development. Not all heads of educational institutions, teaching staff, students, parents were prepared to switch to online learning, many needed to develop their knowledge, skills, and information and communication technologies. This is just a small list of problems that the pandemic has caused in education. Given a long-term prospect of modern society co-existing with the coronavirus, we consider it important to study the effects on the educational environment in-depth in order to minimize their negative impact.

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1. Introduction

Coronavirus disease (COVID-19), classified as pneumonia of unknown origin, later identified by the International Committee on Taxonomy of Virus as the causative agent of COVID-19 caused by the novel Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). The virus was first identified in Wuhan, Hubei Province, China, in December 2019. The COVID-19 outbreak spread rapidly not only in China but also around the world. Therefore, on March 12, 2020, the World Health Organization (WHO) declared it a pandemic (WHO, 2020). To stop a rapid spread of coronavirus pandemic, some governments around the world took measures like quarantine, isolation, and curfews. The announced measures had a negative impact on business, health, tourism, education throughout the global community.

The coronavirus (COVID-19) pandemic has affected all levels of educational systems. Educational institutions around the world (in 192 countries) either temporarily closed or implemented localized closures, affecting about 1.7 billion students worldwide (UNESCO, 2020c). Many universities had to postpone or cancel all activities in order to minimize public gatherings and thus reduce transmission of the virus. However, these measures entailed negative economic, medical and social implications for students and other educational agents (Esposito, 2020).

Due to suspended classroom training in many educational institutions, the only possible way out of this situation is a transition to online learning (Yamin, 2020). This form of education provides an alternative way to minimize contact, both between students themselves and between students and teachers (students and teachers).

Scientists Onyema et al. (2020) study the impact of coronavirus pandemic on education in general and in individual countries as well as others (Adnan & Anwar, 2020; Dhavan, 2020; Sahu, 2020; Seymour-Walsh et al., 2020). Domestic scientists who research this problem include Mikhalchik (2021), Yakovleva and Koryakina (2020), Danilova (2020) and others.

2. Problem Statement

The coronavirus pandemic has affected every aspect of human life, including the largest educational disruption in history. The pandemic has affected more than 1.5 billion students in more than 190 countries globally. The disruption of education, the negative effects of the pandemic have had and will have serious consequences not only in the field of education, but also beyond. When education systems break down, building a prosperous and productive global community seems to be unfeasible. Given a long-term impact of the COVID-19 pandemic on education, there is a need for research in this area.

Although there is already some activity in the scientific community, many questions remain unexplored, or are characterized by narrowness or locality of analysis carried out. In this regard, the authors consider it urgent to form a scientific basis to study the impact of the coronavirus (COVID-19) pandemic on the sphere of education.

3. Research Questions

Closures of educational institutions in response to the COVID-19 pandemic has shed light on numerous issues affecting access to education as well as broader socioeconomic concerns. As of March 12, 2020, more than 370 million children and young people were not attending schools, colleges and universities due to temporary or indefinite closures across the country, mandated by governments in an attempt to slow the spread of COVID-19 (UN News, 2020; UNESCO, 2020c).

According to the United Nations Children's Fund (UNICEF), the COVID-19 pandemic has affected more than 91% of students worldwide, with an estimated 1.6 billion children and adolescents unable to physically attend school due to temporary closures and quarantines (UNICEF, 2020).

Even when closures are temporary, they come with high social and economic costs. The disruptions they cause affect people in different communities, but their impact is even more serious on disadvantaged children and youth, including interruptions to schooling, poor nutrition, childcare problems and the resulting economic losses for families unable to work (UNESCO, 2020c).

According to research by Studi Economici Dell' Ocse (OECD), school performance is highly dependent on close interactions with teachers (OECD, 2020). This is especially true for students from disadvantaged backgrounds who may not have the parental support they need to learn on their own. Working parents are more likely to miss work when schools close to care for their children, which in many cases results in lost wages and negatively impacts productivity (UNESCO, 2020a).

Online learning has become vital to education as educational institutions seek to minimize the transmission in society (Murphy, 2020). Technology can enable teachers and students to access specialized materials far beyond textbooks. Due to the COVID-19 pandemic, many educational institutions around the world have started delivering classes using video software such as Zoom. The Organization for Economic Cooperation and Development has developed an educational response guide to the Covid-19 pandemic for distance learning (OECD, 2020).

Lack of access to information technology or good Internet connection has been a barrier to continue learning, particularly for schoolchildren and students from low-income families (UNESCO, 2020a). UNESCO recommended the use of distance learning programs and open educational applications and platforms that educational institutions and educators could use to work with learners remotely (UNESCO, 2020b).

Lack of copyright limitations and exceptions can also affect the ability of learners to access textbooks and other materials they need to study. Several initiatives have been taken to provide students and teachers with access to open educational resources. The International Council for Open and Distance Education launched a dedicated website. The site featured webinars providing tips for online teaching and educational resources for teachers. In New Zealand, a group of publishers agreed to ensure open access to their materials in libraries and classrooms virtually.

A similar agreement was reached in Australia, where the Australian Publishers Association, the Australian Library and Information Association and the Australian Authors Society agreed on a series of exceptional measures to permit libraries to provide educational content (Books Create Australia, 2020). A

human rights organization in the Netherlands launched a website that allows teachers to use music and video free in their classrooms.

In general, a gradual spread of coronavirus and associated changes in educational sphere unfolded in the following sequence:

December 2019: Coronavirus (COVID-19) was first detected in Wuhan, Hubei province, China.

January 26, 2020: China was the first country to impose measures to bring an outbreak of the disease under control, including the extension of the 2020 Spring Festival holiday, and became the first country to close all universities and schools across the country.

March 3, 2020: UNESCO released the first global data on school closures and affected students. Twenty two countries on three continents were reported to have taken preventive measures, including temporary closures of schools and universities, which affected 290.5 million students worldwide. In response, UNESCO called on countries to support affected students and their families, and to promote large-scale, inclusive distance learning programs (UNESCO, 2020b).

March 5, 2020: Most of students affected by the COVID-19 emergency were in China, with 233 million students affected, followed by Japan with 16.5 million and Iran with 14.5 million (UN News, 2020).

March 10, 2020: According to UNESCO, one in five students globally “did not go to school due to the COVID-19 crisis” and one in four students was suspended from tertiary education (UNESCO, 2020d).

March 13-16, 2020: On March 13, national governments in 49 countries announced or implemented school closures, including 39 countries that closed schools nationwide and 22 countries that closed schools locally. By March 16, the figure increased to 73 countries according to UNESCO (UNESCO, 2020c).

March 20, 2020: More than 70% of students worldwide were affected by school closures, 124 countries closed schools nationwide (UNESCO, 2020c).

March 27, 2020: Almost 90% of students did not attend classes.

March 29, 2020: National school closures affected more than 1.5 billion children and other students (UNESCO, 2020c).

Mid-April 2020: 1.725 billion students worldwide were affected by school and university closures in response to the COVID-19 pandemic. According to a UNESCO monitoring report, 192 countries imposed nationwide school closures, affecting about 99% of global student cohort.

September 30, 2020: An estimated 1.077 billion students were out of school due to the pandemic. According to UNICEF monitoring, 53 countries introduced school closures nationwide and 27 countries introduced local closures, affecting about 61.6% of students globally (UNESCO, 2020c).

From October 2020: the 2nd wave of coronavirus (COVID-19) hit the world. Most educational institutions continued the distance learning format.

Summarizing the above stages, here is a pandemic chronology in education (Table 01).

COVID-19 prevalence statistics predict the continued relevance of distance learning in the world for an indefinite period, thus confirming the need for research in the field of education in the context of the pandemic.

Table 1. Pandemic chronology in education

Period	Event
December 2019	A previously unknown virus was confirmed.
January 2020	Educational institutions were closed in China.
March 2020	Educational institutions gradually closed worldwide and shifted to distance learning.
April-May 2020	1.725 billion students (99% of the world's student cohort) did not attend school. Distance learning.
September 2020	1.077 billion students were out of school. Some educational institutions opened in-person classes.
October 2020 till now	Most educational institutions continued with distance learning.

4. Purpose of the Study

The paper aims to study the impact of the coronavirus (COVID-19) pandemic on education, to highlight the main problems in education in the midst of the pandemic, and to analyze their consequences.

5. Research Methods

The authors used such general scientific methods as analysis and synthesis; induction and deduction; observation, comparison, measurement and others. The study was based on official data from the World Health Organization (WHO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Children's Fund (UNICEF), and the Organization for Economic Cooperation and Development (OECD). The paper also relies on publications of many foreign and domestic scientists, materials of periodical, scientific, public organizations.

6. Findings

Current realities suggest that the impact of the coronavirus pandemic on education has been negative rather than positive. During school closures, for example, students were slower to acquire literacy than during the normal school year. It was estimated that the rate of improvement in reading skills among US children declines by 66% during school closures compared to active schooling (UNESCO, 2020c). School closures also tended to increase dropout rates, particularly among disadvantaged families. Schools and other educational institutions are also centers of social engagement and human interaction. When schools close, many children and young people lose the social contacts they need for learning and development.

However, it is also possible to mention some of the implications of the coronavirus pandemic for educational stakeholders in a positive way. For example, according to the Teaching and Learning International Survey (TALIS), young teachers, as well as teachers for whom information technology was incorporated into their formal education, used this technology more often in their classroom settings.

However, only 60% of university and schoolteachers received professional development in the field of information and communication technology, and 18% reported a high need for development in this area (OECD, 2019). These numbers highlight the need for educators and teachers to update their skills regularly in order to be able to innovate in their practice and adapt to rapid transformations going on

in the 21st century. This is even more important in the current context, when the COVID-19 health crisis forced educators and teachers to adapt very quickly, especially in countries where they do not necessarily have the pedagogical and technical skills to integrate digital tools into learning.

A complex impact of the COVID-19 pandemic on education over the past year is undeniable, and experts predict a lasting impact. Moreover, this process is different for participants and needs further research. A preliminary summary can now be made of the shaping impact of the coronavirus infection on the education sector, and longer-term consequences can be based thereon. In this regard, it is important to examine the impact of the pandemic from other perspectives. The authors therefore consider it necessary to conduct an in-depth analysis of the processes occurring in the educational environment under force majeure circumstances, including proposals for classifying the impact of coronavirus on education.

The paper touches upon the main consequences of the coronavirus (COVID-19) pandemic on education (Table 02). The authors propose to classify them based on the following characteristics: by nature of impact, by scale, by speed of development, by type and by severity of impact. Thus, the challenges posed by the coronavirus pandemic and its negative impact on education suggest that the global scientific community should consider a strategic response to avert the crisis and build an effective, tailor-made education system.

Table 2. Classification of impacts of the coronavirus (COVID-19) pandemic on education

I. By nature of impact			
<i>Negative effects</i>		<i>Positive effects</i>	
- Closing educational institutions for in-person classes;		- Access to digital technologies and Internet connection in remote areas to provide distance learning;	
- Uncertainty in the current situation for all educational agents;		- Mass innovations in the field of education;	
- Threat to suspend learning for an indefinite period;			
II. By scale (rate)			
<i>Local effects</i>	<i>Regional effects</i>	<i>Global effects</i>	
- Implications for a specific educational institution (school, college, institute, university, etc.);	- Implications for a particular territorial unit (village, city, district, oblast, region, country);	- Implications for the global community;	
III. By speed of development			
<i>Rapidly developing</i>		<i>Fast developing</i>	
- Closure of educational institutions;		- Digitalization of education;	
- Distance learning;		- Provision of remote regions with information and telecommunication technologies;	
- Mastering new means of communication by educational agents;		- Reduced knowledge gained during the pandemic;	
IV. By type			
<i>Economic</i>	<i>Political and legal</i>	<i>Socio-demographic</i>	<i>Scientific and technological</i>
- Reduced student cohort (fee-based programs) due to a decrease in the income of students' families;	- Changes to the educational regulatory framework initiated by national governments;	- Higher demand among applicants for medical degrees due to greater prestige of medical professions;	- Improvement of distance learning;;
- Increased costs of educational institutions for distance learning (servers, hardware, etc.);	- Restrictions on access to education for foreign students (closed borders);	- Lack of access to distance learning tools in low-income families;	- Increasing digital literacy of the population;
- Higher demand for		- Age restrictions on the use of distance learning;	- Need to update technical training means;
		- Inability to study in some	

technical means of communication for training purposes;	specialties that require face-to-face attendance;	
V. By severity		
<i>Very acute (catastrophic, crisis)</i>	<i>Acute (critical)</i>	<i>Moderately acute (tense, conflict)</i>
- Low literacy of the population; - Lower skills in all jobs;	- Decline in literacy rates; - Decline in qualifications in a number of professions;	- Likelihood of declined literacy; - Likelihood of declined skills in some professions;

The proposed classification provides what the authors consider major examples of the effects of the COVID-19 pandemic on education. This list may be expanded and aligned as events evolve in relation to the spread of the coronavirus.

7. Conclusion

It is clear that the coronavirus (COVID-19) has challenged the level of preparedness, flexibility and adaptability of all educational institutions worldwide in responding to similar global crises. Yet, on the other hand, the pandemic has served as an effective “agent of change” or “trigger” facilitating the rapid adoption of e-learning and digital learning in such classically resilient educational institutions. Hence, it can be argued that although emergency distance and digital learning was initially introduced as a safety and security measure for the school and student community, it ultimately changed the learning environment, both in schools and in higher educational institutions. Therefore, it is important to review the lessons learned from current experience so that educational institutions are better prepared for a possible extension of urgent e-learning, as the coronavirus pandemic is not over yet.

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