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## The impact of force majeure situations (coronavirus) on the higher education

The COVID-19 epidemic has triggered a negative spiral in the global economy and had a profound effect on the higher education system. As a social distancing technique to avoid community transmission, the abrupt shutdown of universities has switched face-to-face classrooms to online learning platforms. The article analyzes the impact of COVID-19 on the development of graduate and postgraduate education in Kazakhstan. It was found that the main forms of education in a pandemic are asynchronous or part-time education, synchronous and mixed. Four groups of teachers formed as a result of the forced transition to distance learning are characterized: teachers of disciplines that require a significant amount of practical, laboratory work; teachers who actively used digital technologies before the pandemic; teachers familiar with digital technologies; teachers who have not been able to master new tools for organizing learning, teamwork and the expanded use of digital resources. The problems common to most universities are identified: the lack of professionally developed programs for online learning, insufficient funding, and the need for methodological training of teachers to work with students online.

**Keywords:** pandemic; COVID-19; higher education; teacher of an institution of higher education; student; Kazakhstan; distance learning; online learning.

### Introduction

COVID-19 virus was first recorded in late December 2019 in Wuhan, China. It swiftly spread around the globe, and the World Health Organization (WHO) declared it a pandemic on March 11, 2020 [1]. The breakout of COVID-19 had a catastrophic effect on human life and wrecked economy all around the globe [2]. The COVID-19 pandemic has affected all spheres of human activity, and higher education is one of them, that have experienced its enormous impact. Over a billion and fifty-two million students, or about 89 % of the global learners, were impacted as schools and universities throughout the world shut down on April 1, 2020. As of early May, various nations began reducing quarantine restrictions due to declining case and mortality rates [3]. An extremely short time institutions of higher education had to switch to distance or mixed form of education. Quarantine measures caused by the threat of COVID-19 pandemic spread have resulted in necessity of radical transforming the forms and methods of teaching and interpersonal communication, as well the system of organizing educational process.

The pandemic has had a significant impact on the educational and personal habits of students (such as, the shift to online lectures and tutoring, the closure of libraries, the modification of communications for teachers' and administrative support, the introduction of novel assessment techniques, the modification of workloads and levels of performance, etc.) [4-7]; economic position (loss of temporary job, concerns about one's own economic state, one's future education and one's career) [5; 8-10]; and social interactions (shuttered dormitories and thus returning home; no gatherings with friends, university colleagues or family members; no occasions; no vacationing; staying trapped overseas, etc.). In addition to mental and physical wellness (fears, frustrations, anxiety, anger, boredom, etc.) [5; 8-12].

According to previous research, the major drawbacks of distance learning include the absence of social connection, self-isolation, excessive stress and anxiety, and mental health difficulties [13-15]. Ibadildin, et al. [16] point out that the reduction in social contacts led to a lack of motivation, academic interest, and a sense of dissatisfaction. Moreover, as a result of the move to online learning, the amount of time and effort required

to complete home tasks increased to the point that students felt fairly overwhelmed [13]. In addition, study findings reveal that cheating has become frighteningly prevalent in distant education [16].

The findings of the interviews conducted by Ibadildin, et al. [16] indicate that students felt confused working with professors they had never seen or spoken in person. In addition, several participants reported a stressful atmosphere at home owing to noise, siblings, lack of gadgets, domestic duties, and family circumstances, which was also noted in previous research [17].

Despite its many negative effects, the pandemic has also prompted some positive shifts in behavior and outlook, such as an increased focus on personal sanitation, a shift toward healthier lifestyle choices (such as giving up smoking and having to eat more natural, local produce foods), more time spent engaging in physically active pursuits, etc. [18, 19].

There has been an increase in the use of online courses, which became the norm for higher education institutions throughout the coronavirus outbreak. The profound changes brought about by the COVID-19 crisis have brought in the digital world [20]. The continuing paradigm of education has evolved in tertiary education and is demonstrating to be an unavoidable shift to a student-centered strategy in which learning outcomes play the key role and are the primary goal of the educational process [21].

Higher education organizations have been undergoing digitalization for a number of years [22]; it is not a new phenomena. In these institutions, it is a current problem that must be of interest to a variety of education stakeholders; as the capacity to apply ICT in all spheres of life is progressive, universities must prepare future professionals to meet the relevant difficulties and offer answers [23]. In addition, this approach has required the incorporation of sustainable management in order to properly adapt to the changes imposed by innovative technology [24] and the past pandemic. Shamsir, et al. state that “The lack of clear planning frameworks and strategies for pandemic preparedness by institutions of higher education (IHE) has been exposed as a result of the COVID-19 pandemic” [25; 2].

The educational community has accumulated its efforts to ensure the functioning of the higher education system in the context of the pandemic, and in a short time, various educational organizations have conducted studies to analyze the impact of the COVID-19 pandemic on higher education.

**The aim of the article** is to analyze effect of threats and potentials of destabilizing natural circumstances in society on development of educational systems, in particular, higher and postgraduate education, based on the research of educational organizations.

### *Main material*

Higher education structures have treated the crisis with innovative and immediate approach. However, according to the survey results, the impact of COVID-19 depends on the specific education system. As far as education financing is concerned, most researchers are unanimous in the opinion that it is decreasing due to deterioration of the economy in the country and also redistribution of funds for more urgent needs that arose during the pandemic [26].

By analyzing the impact of COVID-19 on the development of higher education in Kazakhstan, we concluded, that despite the difficulties, the system, as a whole, keeps functioning. The transition to a distance form of learning has provided interaction of students and teachers to fulfill educational tasks.

Educational activities are carried out in three formats: asynchronous or correspondence (applicants' study at a time convenient for them in accordance with the terms defined by the program); synchronous: this format involves simultaneous participation of teachers and students in learning process; mixed format implies a combination of synchronous and asynchronous formats, depending on educational needs [27].

Some educational institutions successfully practiced distance learning in quarantine time. However, most institutions carried out their main activities in full-time and / or in part-time format. In this regard, with the introduction of total distance learning, institutions of higher and postgraduate education of the Republic of Kazakhstan had to face a number of obstacles [28].

The first obstacle is related to the technical support, as the absence or improper condition of computer equipment and the Internet (for example, in rural areas) exclude the use of distance education.

While universities have a few fundamental tools to allow a small amount of online learning on-site, extending those resources to accommodate the full student body created substantial problems. The conclusion of the period necessitated the procurement of new software or policy changes. Compared to secondary school, they were at least partially prepared, but the proportion of curriculum designers or technological support workers to teachers was suddenly quite high, and senior leadership may have lacked online learning competence, given that most campuses emphasized face-to-face teaching. Some universities attempted to shift personnel to

support this shift without realizing the role-specific knowledge necessary, while others resorted to mass recruiting for these positions. The learning and instructional support departments on campus provided synchronous and asynchronous instructional videos and workshops, however the implementation differed per institution. Some were more concerned on the technologies, while others were more concerned on the pedagogy of online teaching.

The transition to online has exposed the severe digital gap between those with access to electricity, internet service, information, and gadgets and those without such access. Haßler, et al. [29] emphasize the disparities in access to computers, tablets, feature phones, televisions, and radios across high-, middle-, and low-income states, in addition to between high-, middle-, and low-income citizens within nations. While high-income communities have access to distant emergency instruction through computers and phones, low-income people depend mostly on television and radio. In distant rural locations, the most marginalized communities may not even have accessibility to radio and television. Even in families with these gadgets, there are often insufficient gadgets to fulfill the simultaneous educational demands of several children and parents who may require them for working remotely.

The second one is software, since, even with available technical support, the installation of software for distance education causes difficulties for users.

As shown by data from the Independent Agency for Quality Assurance in Education [30], ZOOM is the most often used platform for remote education. The replies of 79 % of teaching personnel and university employees, as well as 82 % of students, demonstrate this. In addition to ZOOM, institutions actively use Microsoft Teams, Webex, and Cisco Systems. Platonus and Moodle were extensively used by colleges even before the move to a distant teaching and learning model, if the three mentioned tools achieved their special appeal solely because of the outbreak. It is important to consider that many universities use self-developed systems.

The third one is the lack of methodology on distance learning education, as it requires special teacher training. Teaching methods applied for full-time education is not suitable for distance one. Therefore, often all classes are held in the form of one-sided communication on the part of teacher, and independent work on the part of student. Solving this issue is considered to be an urgent task.

Teachers need to explore the potential of online learning platforms and find ways to assist students overcome the challenges and limits of electronic communication while using active, collaborative teaching approaches to guide their students toward developing their own online learning strategies. Teachers need the skills to evaluate student work and give regular feedback in order to effectively administer an online course, which requires students to be self-motivated learners who can act independently. Teachers in today's increasingly digital classrooms must help their students maintain focus on their work, grow in analytical thinking and self-awareness, and reflect on their successes and setbacks before encouraging them to share their knowledge with others.

It is clear that a teacher plays a crucial part in the success of online education [31]. The role of a teacher is expanding in terms of organization, content, etc. as a result of the integration of new technology into the classroom. When compared to traditional pedagogy, the role of a teacher in a contemporary educational environment requires a new set of skills and approaches [32]. It is well acknowledged that educators are experts in their fields however comprehend considerably less about IT and digital pedagogy. This is a problem that prevents online courses from reaching their full potential.

A mastery of one's subject matter and proficiency with computers are not enough to become a great online teacher. The capacity to develop e-learning courses; execute distant and online education; organize effective online contact and cooperation between a student and instructor are all aspects of online pedagogy that one must grasp. Cantamessa [33], Mandernach, et al. [34], Steele, et al. [35], Kilgour, et al. [36], and Green, et al. [37] all stress the significance of social relationships and online conversations in the formation of online pedagogy abilities.

We support the opinion of researchers that teachers as a result of the forced transition to distance education can be divided into four groups [38].

The first group consists of teachers who require a completion of significant amount of practical and laboratory work from students. In most cases, such teachers did not have any serious substitute for traditional teaching methods.

On average, they comprised about 5 % of the total amount of teachers. This group is totally against the use of distance learning and new technologies in the future.

The second group includes teachers who actively used digital technologies (including online courses and resources) during the pandemic. They were able to fastly expand the use of common means of communication

and create digital resources and learning management systems. Their share was about 25 % (in leading universities — up to 40 %). The group generally supports the expansion of distance learning and believes that the quality of online learning can correspond to the quality of offline learning.

The next group is teachers who are skilled in digital technologies (including outside of their professional activity), in information search on the Internet, and e-mail communication. Such teachers (up to 50 % of the leading teachers) quickly mastered new tools, including synchronous learning, but it required considerable effort. Representatives of this group mostly do not support a significant expansion of online learning (including online courses from leading open education platforms), but they admit the possibility of using communication technologies, educational process management systems, and the use of additional digital learning resources in certain cases.

The last group is teachers who have not been able to master new tools for organizing training, teamwork and expanded use of digital resources. They actually switched to distance learning. Their share ranges from 5 to 30 %, depending on the institution. For these teachers, the transition experience turned out to be very difficult. They do not believe in the effectiveness of the distance format, nor in their ability to master new learning technologies.

An important issue is the adaptation of plans and programs to distance education, as well as the adequacy of control measures for the activities of both teachers and students during the quarantine period. Obviously, the forms of control should be adjusted to ensure greater objectivity. The objectivity of control measures (exams, tests, defenses of graduation papers, etc.) requires special attention, so the successful experience of higher education institutions in the countries of the world should also be used by the national education system (the education system in the Republic of Kazakhstan) [39].

Distance education in Kazakhstan also has a number of significant advantages: the opportunity to improve qualifications online (saving time and money, especially when it comes to foreign internships, training, etc.); potential to reach more audiences during conferences, webinars, etc.; possibility to hold joint meetings of departments, councils and promptly address organizational and other tasks [40].

#### *Conclusion and direction for further research*

The purpose of this research was to investigate the experiences of undergraduate and postgraduate students participating in online education during the worldwide pandemic and the influence that it had on many parts of their life. The findings of this research are consistent with those of other studies, which found that the quick transition to online learning had both positive and negative effects.

Thus, the threats and potentials of impact of destabilizing natural circumstances in society on the development of graduate and postgraduate education can vary depending on conditions, as the development of higher education has its own peculiarities in different regions. However, there are also trends common to all institutions of higher education. The transition to distance education has become typical for all regions of Kazakhstan. Most institutions of higher education had the necessary infrastructure, online learning experience and digital technologies in the COVID-19 pandemic to ensure functioning of the educational process.

Regulatory documents have been developed at the national level to switch to a remote mode of functioning. Information support of teachers and students, as well as economic assistance for higher education institutions has been provided. The educational system is also characterized by a loss of financial stability. At the same time, many developing countries had to face the challenge of unequal access to education and insufficient methodological training of teachers. The training of specialists in the field of medicine, technical industry (engineering), culture and arts turned into a problem of larger scale.

This research focused only on the viewpoints of the students of a developing country's higher education system about the effects of the worldwide pandemic. To get a better understanding of how faculty members and university management fared while coordinating the shift to online learning and adjusting to the new circumstances, more study is required. They have the ability to provide an education process in a more comprehensive manner. To properly navigate the digitalized classrooms, some students and teachers will need additional training. In addition, it would appear that the Kazakhstani universities in which the people who took part in this research were enrolled did not place a significant amount of emphasis on the organization of the psychological treatment and psychological health assistance proposals that are essential in these kinds of situations.

We argue that the prospect of development implies development and implementation of a new model of education to flexibly respond to the challenges of the time. Such model is expected to provide for the possibility

of combining traditional interaction between participants of educational process with online developments for distance education.

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### **Форс-мажорлық жағдайлардың (коронавирус) жоғары және жоғары жоғарыдан кейінгі білім саласына әсері**

COVID-19 індеті жаһандық экономикаға кері әсерін тигізді, әсіресе жоғары білім беру саласына ықпалы қатты болды. Адамдардың топтасуын болдырмау үшін әлеуметтік қашықтық әдісі ретінде университеттердің кенеттен жабылуы дәстүрлі оқу процесін онлайн оқыту платформаларына ауыстырды. Мақалада COVID-19 пандемиясының Қазақстандағы жоғары және жоғары оқу орнынан кейінгі білім берудің

дамуына әсері талданған. Пандемия кезінде білім берудің негізгі түрлері асинхронды немесе сырттай оқу, синхронды және аралас оқыту болғандығы анықталды. Қашықтықтан оқытуға мәжбүрлеп көшу нәтижесінде қалыптасқан оқытушылардың төрт тобы сипатталған: практикалық, зертханалық жұмыстардың айтарлықтай көлемін талап ететін пәндердің оқытушылары; пандемияға дейін цифрлық технологияларды белсенді пайдаланған оқытушылар; сандық технологиялармен таныс оқытушылар; оқытуды ұйымдастырудың жаңа құралдарын, командалық жұмысты және цифрлық ресурстарды пайдалануды меңгере алмаған оқытушылар. Жоғары оқу орындарының көпшілігіне тән мәселелер анықталған: онлайн оқытудың кәсіби әзірленген бағдарламаларының жоқтығы, қаржыландырудың жеткіліксіздігі, студенттермен онлайн жұмыс істеу үшін оқытушылардың әдістемелік даярлығының қажеттілігі.

*Кілт сөздер:* пандемия, COVID-19, жоғары білім, жоғары оқу орнының оқытушысы, студент, Қазақстан, қашықтықтан оқыту, онлайн оқыту.

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## Влияние форс-мажорных ситуаций (коронавирус) на отрасль высшего и послевузовского образования

Пандемия COVID-19 вызвала негативную спираль в мировой экономике и оказала глубокое влияние на систему высшего образования. В качестве метода социального дистанцирования, чтобы избежать передачи инфекции в обществе, многие вузы были закрыты, очное обучение перевели на онлайн обучение. В статье проанализировано влияние COVID-19 на развитие высшего и послевузовского образования в Казахстане. Выяснено, что основными формами образования в условиях пандемии является асинхронная или заочная форма обучения, синхронная и смешанная. Авторами рассмотрены сформированные четыре группы преподавателей: общие преподаватели дисциплин; преподаватели лабораторных дисциплин; преподаватели, которые активно пользуются гаджетами; преподаватели, не сумевшие освоить новые инструменты организации обучения. Определены общие для большинства университетов проблемы: отсутствие профессионально разработанных программ для онлайн обучения, недостаточное финансирование, необходимость методической подготовки преподавателей для работы со студентами онлайн.

*Ключевые слова:* пандемия, COVID-19, высшее образование, преподаватель заведения высшего образования, студент, Казахстан, дистанционное обучение, онлайн-обучение.

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