

Usage and effectiveness of educational platforms in Kazakhstan during the Covid-19 pandemic

Maxot Rakhmetov†, Aigul Sadvakassova†, Galiya Saltanova‡ & Akgul Yessekenova‡

L.N. Gumilyov Eurasian National University, Nur-Sultan, Kazakhstan†
Kh. Dosmukhamedov Atyrau University, Atyrau, Kazakhstan‡

ABSTRACT: The world has been hit hard since the spread of the Covid-19 pandemic. This has led to big changes in Kazakhstan, with some sectors experiencing major difficulties, including education. At this time, students were forced to on-line education. However, at some universities, students have found it difficult to access the required technologies and resources. For the majority of students living in remote areas of Kazakhstan, access to on-line communication has become a serious problem. In this situation, many platforms have been used for quality knowledge transfer. Hence, the objectives of this study were to determine student perceptions about on-line education during the pandemic. The results show that students responded positively to assessment items, including ease of access, timing and relevant learning material. They highly appreciated the opportunities created by their teachers, increased interaction, exchange of questions, opinions and answers, which actively involved them in the learning process. The prevalence of particular types of educational platforms has also been determined.

INTRODUCTION

Currently, the world is still in the grip of the Covid-19 pandemic, which has affected all areas of life and economy [1]. Covid-19 was first reported in Wuhan, China, in January 2020 [2], but quickly spread to other countries.

The Covid-19 pandemic had brought about a major change in the education system, and especially at its onset, many schools and universities were forced to close their doors. In March 2020, the World Health Organisation declared Covid-19 a world-wide pandemic. As a result of governmental decisions at that time, 1.6 billion students in more than 190 countries and on all continents had been adversely impacted by lockouts and closures. The closure of schools and other educational institutions around the world affected 94% of students, 99% in low- and middle-income countries.

The impact of the pandemic on education, and particularly the initial closure of face-to-face (F2F) on-campus learning has put great pressure on the whole system, forcing educational institutions to make significant changes to continue their service provision. These changes relate to e-learning that influenced the growth of distance learning and digital platforms implementation, as well as crucial and much-needed innovations in the field of education [3].

On-line platforms have been used in almost all developed countries. Distance learning tools are selected in such a way that they were understandable and convenient for students. By using on-line platforms, teachers have the opportunity to conduct lessons in real-time mode. For example, in France, an existing distance learning programme *Ma classe à la maison* (my classes at home) was made available to all students in primary and secondary schools [4]. In Greece, teachers conducted virtual classes with on-line learning tools [5].

Television programmes were yet another popular teaching tool in many countries as some of them provide educational content enabling students to continue their studies. Live broadcasts have also been found to be a way to reach students who do not have sufficient resources to study on-line.

With the growing demand for information and communication technologies (ICT) in higher education and their continuous progress, lecture-based classes may now seem outdated strategies. There is a significant shift in instruction which is no more teacher-centred, but student-centred aiming to develop an active learner. Maintaining an active learning environment not only focuses on learners' engagement in the process, but also on enhancing their learning skills, specifically critical thinking. The concept of critical thinking in an on-line context has not yet been comprehensively researched, despite its significance to the pandemic-induced changes in learning mode. New frameworks are needed to improve learning competencies and performance in an on-line context [6].

The only-line only mode of teaching has particularly affected those disciplines that rely on F2F exchanges of comments and opinions between the teacher and student, while focusing on the task at hand - as is the case in architectural

drawing. This issue is addressed in an article by Makowska, who highlighted the need to ensure that key issues for freehand drawing and painting are addressed during on-line classes through the right selection of topics [7]. The author also analysed the outcomes achieved during the remote learning period, and presented students' comments regarding their on-line learning experience. This article focuses on the possible impact of remote learning on the quality of freehand drawings produced by students. The analysis includes the effectiveness of the various feedback methods, taking account of the various level of drawing skills demonstrated by students [7].

In Kazakhstan, distance education has been implemented using the following three main approaches: on-line technology (autonomous on-line courses or virtual departments, universities using the Internet); distance learning based on case technologies; distance learning based on TV technologies [8].

RESEARCH METHOD

The impact of the pandemic on the higher education system is specific in different parts of the world, hence it differs from country to country. However, the general vector of these changes can be traced: all universities in the world were forced to adapt to changes in the shortest possible time, engage significant financial and human resources to accelerate digitalisation, and often to make swift decisions without considering the possible consequences. The form of distance learning, types of technical means for its implementation, assessment of students' knowledge acquisition, holding of final examinations and the recruitment of applicants for the next academic year turned out to be critical issues that required immediate solutions and action.

Global Transition to Distance Education

The pandemic has shown that distance education can compete with traditional education. Moreover, it has become a driver of a global shift towards on-line learning. Despite the fact that the distance form of education was not so popular in some countries until 2020, today's reality shows that this form of education is already a necessity. Although no one can in advance guarantee the consequences and results of on-line learning, there is no doubt that they will be widely visible in the short term [9].

The effective implementation of on-line learning requires a large amount of time and resources, as well as support from the main stakeholders interested in the development of quality on-line education. Consequently, universities will have to cope with the following primary tasks in the current situation:

- Development of strategic planning of the university, taking into account the associated risks to predict the short-term and long-term consequences of the pandemic and the expected economic downturn [10].
- Development of a support system for students and teachers by providing them with the necessary equipment, organisation of trainings and training seminars within the framework of on-line education, creation of an own platform for the exchange of experience between teaching staff, methodological support in adapting programmes to on-line education forms.
- Changing the procedures and criteria for assessing knowledge in accordance with the new format of training and pedagogical approaches [11].
- Close co-operation with other universities at the national and international level for the exchange of experience and resources.

Over the years, statements about relevancy in the future have also been made in regard to non-educational enterprises; for example, about traditional shops that in a few years' time could be a thing of the past if replaced by e-shops. However, the traditional shops are still in business, although the number of e-shops has multiplied many times over and is still growing. Even traditional stores have their own Web-based versions, from which the whole business profits. This analogy also points to the fact that teachers will increasingly have to use e-technology as there no substitute for technology in any form.

E-learning Modes

E-learning modes can be classified as presented in Figure 1.

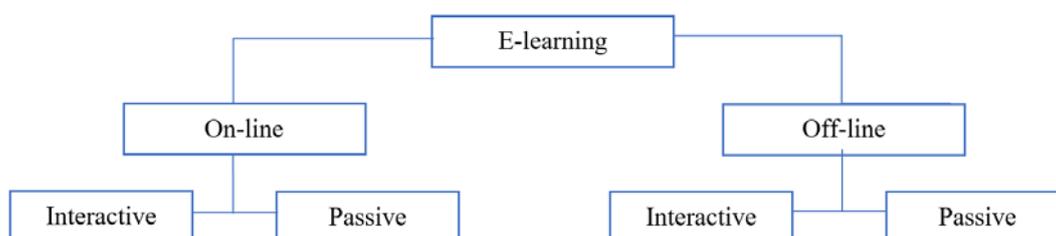


Figure 1: E-learning learning modes.

At present, *blended learning* is very often used, which is a loose combination of traditional teaching and some form of e-learning, most often the off-line passive method.

In deciding on the most effective and efficient mode of learning under a specific set of circumstances, an important role is played by regular satisfaction surveys of student and teaching staff including also the quality of on-line education. The results of such surveys help universities make changes to educational programmes and improve the quality of education and services provided. Therefore, the results of this study can provide some input for other universities in their decision-making on the implementation of distance education and the quality of education during a pandemic. Moreover, they could also be a resource for current and future research [12].

As part of this study, two questionnaires were prepared:

- 1) For university undergraduates;
- 2) For other university students.

Each questionnaire consists of 25 questions - closed and open. The questionnaires were compiled on the Google Forms platform and sent to the undergraduates, teaching staff, and other university students by e-mail.

In total, 120 responses were received from two groups of respondents: from undergraduates and teaching and other staff of universities (30 persons) and from other students (90 persons). Three universities located in Kazakhstan took part in the study. Based on the responses received, general trends in the development of distance and on-line education were identified, and recommendations for further development were developed.

RESULTS AND DISCUSSION

The most popular platform used for distance education is the cloud-based Zoom communication app, as can be seen in Figure 2. Its popularity is evidenced by answers of 79% of the teaching staff and undergraduates, and 82% of the other students. In addition to Zoom, universities are now actively using platforms, such as Microsoft Teams and Webex Cisco. It is important to emphasise that the above-mentioned three programs have gained their special popularity mainly due to the pandemic, while learning platforms, such as Platonus and Moodle had been actively used by universities long before the transition to a distance teaching and learning format.

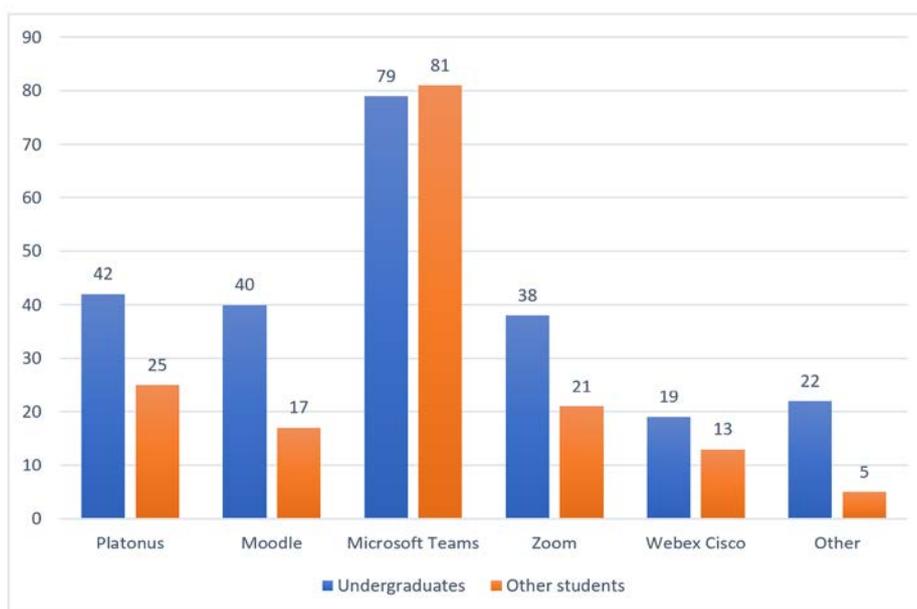


Figure 2: Question: *What programs and platforms does your university use in the process of distance education?*

In general, it can be noted that all universities have successfully adapted to the forced changes and have rapidly transitioned to distance education due to the fact that most of them had already provided such a service to certain groups of students prior to the pandemic. Moreover, the services and materials already provided on educational platforms were well developed, so after the onset of the pandemic, several universities have moved towards more innovations and structural remodelling.

The Impact of the Covid-19 Pandemic on Various Areas of Education and Training

Table 1 presents the respondents' answers to the question about the degree of the Covid-19 impact on each of the items listed in the left-hand column. (Scale: 1 - least impact; 10 - most impact).

Table 1: Answers of undergraduates and other students - compounded responses.

Activity	Score	1	2	3	4	5	6	7	8	9	10
	%	%	%	%	%	%	%	%	%	%	%
Teaching		19	10	9	6	14	6	9	14	4	13
Education/Learning		19	4	7	11	15	7	10	12	7	13
Rating (current)		25	16	7	4	18	6	5	2	9	12
Final grade (examinations)		24	14	9	6	15	6	3	5	9	12
Student support		29	8	8	7	17	4	4	10	6	12
Scientific activity		18	7	14	8	21	8	2	6	8	12
Creative activity		24	7	9	7	17	6	5	9	5	16
Dissertations/final alumni projects		20	6	10	4	21	14	10	2	8	10
Organisation of practice		19	3	7	0	28	1	6	9	9	17
Admission of new students		39	7	7	6	20	2	5	2	8	8

In regard to teachers, the collected data indicate that they believed that the Covid-19 crisis had the greatest impact on areas, such as teaching, learning and the organisation of practice. The least influence, according to the teaching staff was exerted on creative activity.

The findings on teachers do not extend to other respondents, as at the same time, students were generally more tolerant of the impact of the Covid-19 pandemic on their learning. However, among all survey items with the most impact, the highest proportion of the students and teachers answered that the greatest influence was exerted on the organisation of practice.

The fact that the overwhelming majority of respondents, both among faculty and among students, answered that the Covid-19 pandemic had the greatest impact on the organisation of practice may point to the difficulties of organising distance education for certain specialties; for example, medical, technical and creative disciplines. The transition to a distance format in practice-oriented universities may have a negative impact on the assimilation of knowledge in some of those disciplines.

Replacing practical lessons with a video demonstration does not solve the problem of developing practical skills. Thus, it can be assumed that the transition to distance learning will continue to have the greatest impact on universities that train specialists in the field of engineering, medicine and art.

The Main Advantages of the Distance Form of Teaching/Learning

Among the teaching and other staff, the development of students' ability to think and the increase in their independence were highlighted as the advantages of the transition to distance education.

In terms of personal and professional development, the teaching staff noted the training in digital skills and digital literacy, and the opportunity to engage in creativity and self-development by increasing free time available to teachers who did not have to commute to the campus, engage in F2F teaching, etc.

Speaking about the quality and content of education, the teaching staff observed the enhanced quality of the educational materials, and the use of modern software and hardware making e-education more effective. New technologies enabled the visualisation of information, thus making it bright and dynamic, and the creation of the educational process by itself, taking into account the interaction of the student with the learning system.

Students, in turn, noted the development of independence and responsibility for the results of their learning, increased free time and access to the on-line library.

Both groups of respondents highlighted the time-saving benefits teaching/learning at home, hence not wasting time on travel to the university campus.

The Main Disadvantages of the Distance Form of Teaching/Learning

The teaching staff often noted that distance education lacks adequate personal communication and social interaction, without which the corresponding social competencies cannot be developed. In particular, some educational functions may not work well, emotionality may be diminished and motivation affected - all of which negatively impact on developing communication skills so much needed in human interactions both in university studies and future work.

Also, the teaching staff noted that the opportunities for practice-oriented training and experimental work in natural sciences faculties have decreased.

Technical issues were noted as a separate item - some of the teaching staff were not satisfied with the quality of Internet access and proctoring software, the increase in working time at the computer, with a large flow of students, no ability to control all those present in real time in the classroom.

In addition, among the answers, psychological discomfort was emphasised, which stemmed from the fact that not only students, but also outsiders could be admitted as lecture audience. The atmosphere thus created was not conducive to establish the necessary level of contact with students.

Students also pointed out that the physical discomfort resulting from long computer sessions, the lack of real contact with teachers, the difficulty of participating in general discussions that involved all students in the educational process were disadvantages in distance learning.

Some students emphasised the difficulty in self-expression in distance learning, the lack of opportunities for creative activity.

It is important to note that many students indicated the lack of social life as the main disadvantage of switching to distance learning.

CONCLUSIONS

The pandemic has forced the global academic community to recognise distance and on-line learning as the main form of education. All university teachers and students from all over the world have been forced to overcome difficulties in a relatively new direction for them, while simultaneously contributing to the fight against the spread of the virus. This study attempts to demonstrate how Kazakh universities have adapted to a new form of education and what difficulties they have encountered in the implementation of that education.

According to the results of the survey administered to teachers, undergraduates and other students, the greatest impact of the Covid-19 crisis was on the organisation of practice for all groups of the respondents, and on teaching and learning for teachers and some students. It should be noted that universities provided adequate, and often excellent, support in organising training courses for both teaching and other university staff, as well as for students. Moreover, some universities conducted student satisfaction surveys and provided on-line counseling.

Since the pandemic has caused significant damage to Kazakhstan's economy as a whole, some universities were forced to reduce the salaries of teaching staff and employees. However, it has been established that the majority of universities have retained the salaries of their employees. In the survey, some students also noted that in most cases, the cost of education had not changed with the transition to distance learning.

Regarding the difficulties in implementing distance education, the majority of the respondents indicated that interruptions in the operation of the educational platform were the most basic problem. The lack of necessary technical equipment and the violation of academic integrity were also considered as types of difficulties faced by the teaching staff. Moreover, respondents emphasised the importance of social interaction and that the lack of F2F communication had a negative impact on the development of communication skills.

In general, the remote format not only presented these difficulties, but also required the ability for quick adaptation of all participants, which significantly increased the workload.

Despite the difficulties that the pandemic has created in education, it is crucial to highlight the benefits and opportunities of distance learning. Some surveyed students noted that they had more opportunities to keep in touch with their teachers, review lectures and regularly monitor their progress in their personal account. They indicated that they had become more independent in planning their daily routine. Some teachers noted their increased engagement in creative activity and self-development due to more time available to them. Teachers also observed that the use of modern technologies makes the presentation of materials and teaching more effective.

During the pandemic, distance education platforms have become a key tool for implementing the learning process. As the results of this survey show, before the pandemic, universities in the country actively used such platforms as Platonus and Moodle, and during the pandemic, some universities developed their own platforms, while the rest used such well-known platforms as Zoom, Microsoft Teams, Webex Cisco and others.

REFERENCES

1. WHO, WHO Director-General's Opening Remarks at the Media Briefing on Covid-19 (2020), (11 March 2020), 27 November 2021, 2021 <https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020> .
2. Yushchik, E., Savelyeva, E., Zdor, D., Cozac, E. and Smirnova, Z., On-line testing in computer science as an opportunity to enhance the independent work of higher education institution students. *World Trans. on Engng. and Technol. Educ.*, 19, 4, 378-383 (2019).

3. WHO, Update on Coronavirus Disease in Indonesia (2021), 22 January 2022, <https://www.who.int/indonesia/news/novel-coronavirus>.
4. Piguillem, F. and Shi, L., Optimal Covid-19 quarantine and testing policies (2020).
5. Amir, L.R., Tanti, I., Maharani, D.A., Wimardhani, Y.S., Julia, V., Sulijaya, B. and Puspitawati, R., Student perspective of classroom and distance learning during Covid-19 pandemic in the undergraduate dental study program Universitas Indonesia. *BMC Medical Educ.*, 20, **392**, 1-8 (2020)
6. Kaddoura, S. and Al Hussein, F., On-line learning on information security based on critical thinking andragogy. *World Trans. on Engng. and Technol. Educ.*, 19, **2**, 157-162 (2021).
7. Makowska, B., Teaching freehand drawing on-line to architecture students. *World Trans. on Engng. and Technol. Educ.*, 19, **1**, 41-47 (2021).
8. Rauzana, A. and Dharma, W., The effectiveness of on-line learning at an Indonesian university during the Covid-19 pandemic: students' perspectives. *World Trans. on Engng. and Technol. Educ.*, 20, **1**, 71-75 (2022).
9. Sadvakassova, A. and Serik, M., Cloud technologies in educational system of republic of Kazakhstan. *J. of Theoretical and Applied Infor. Technol.*, 95, **11**, 2434-2441 (2017).
10. Serik, M., Nurgaliyeva, S. and Balgozhina, G., Introducing robotics with computer neural network technologies to increase the interest and inventiveness of students. *World Trans. on Engng. and Technol. Educ.*, 20, **1**, 33-38 (2022).
11. Safri, N.M. and Sheikh, U.U., Issues and challenges of technology-enhanced learning during the Covid-19 era: a case study. *World Trans. on Engng. and Technol. Educ.*, 20, **2**, 89-94 (2022).
12. Orazbayev, B., Moldasheva, Zh., Orazbayeva, K., Makhatova, V., Kurmangaziyeva, L. and Gabdulova, A., Development of mathematical models and optimization of operation modes of the oil heating station of main oil pipelines under conditions of fuzzy initial information. *Eastern-European J. of Enterprise Technologies*, 6, **2** (114), 147-162 (2021).