

**Ministry of Education and Science of the Republic of Kazakhstan**

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**«Approved for Defense»**

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**«24» May 2021**

**MASTER'S THESIS (PROJECT)**

**«Effectiveness of Distance Learning During Covid-19»**

**Program 7M03132 - «Business Psychology»**

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**Nur-Sultan, 2021**

**M. Narikbayev KAZGUU University**

**EFFECTIVENESS OF DISTANCE LEARNING DURING COVID-19**

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## **Introduction**

In November last year, a virus appeared in an unremarkable Chinese town. No one knew anything about this disease. Even when the number of infected in the Middle Kingdom exceeded more than a hundred, no one in the rest of the world, or even in China itself, did not attach much importance to this virus, believing that it would pass quickly. But no one even suspected that this "fleeting" disease would have a strong impact on such areas of life as the economy, tourism, sports, and especially education. Starting in March 2020, each country, one by one, began to implement distance learning. It is worth noting that some countries at the very beginning only suspended training, hoping that the disease will disappear soon. Nevertheless, in the end, faced with real events, they were forced to follow the rest to switch to distance learning. Our country has managed to stand out among all countries, the fact that the transition to online occurred literally immediately after the appearance of the first case of infection, we can say before the spread of the virus. Such preventive measures were, without exaggeration, unexpected for everyone. However, what effect did this transition have on the quality of giving and receiving knowledge?

The closure of educational institutions due to preventive measures against the spread of COVID-19 has affected the education and functioning of all involved and benefiting education systems in the world. Although the process of transferring training to a distance or online format has already become part of many educational institutions in different parts of the world. This format is very convenient for students, as it has several notable advantages, for example, home schooling, especially good for students from other cities, and also as a plus, you can note the lack of transport costs from home to school and university and back. But a number of factors related to the quality of educational institutions, teachers, parents, and students, combined with changes in their emotional states, are considered factors that contribute to the impact on the quality of online learning, teacher performance, and student knowledge and skills.

The purpose of this study is to study the effectiveness of distance learning, or rather online learning. The topic of the study is very relevant during the pandemic and will be relevant much later, since you can be sure that online learning will remain partially in the education system even after the pandemic. For example, universities will not be required to attract foreign teachers to our country, since they can easily conduct classes directly from their homeland through platforms such as Zoom, which is undoubtedly convenient for both sides. In addition, although this study will address online learning in educational institutions, the results will also focus on solving problems in training professionals in organizations.

The results would help to correct the shortcomings of online learning, if any, and help to increase its effectiveness. And of course, as I mentioned earlier, the online format will remain in education in any case, even after the pandemic is gone, so the results based on the opinions of students will help to perfectly combine the online and offline learning format.

### **Hypothesis:**

Online training is not inferior to offline training in terms of efficiency.

And in order to confirm or refute the hypothesis the following research questions were raised:

- 1) What are the disadvantages of online learning in terms of applying and obtaining knowledge?
- 2) How much has the academic performance of students improved or deteriorated compared to the usual format of study?
- 3) What impact does online learning have on the mental health?

### **Methodology**

This study assesses the impact of distance learning during quarantine caused by COVID-19 on student performance, as well as the impact of this learning format on the mental psyche of students. The research is based on qualitative data. An ethnographic study design based on in-depth interviews was applied. Convenient sampling methods for data collection were used for the study. The main reason for this choice is the relatively short time that was given for the study, and this sample is famous for its simplicity and method of collecting data in an especially short time. Also, a convenient sample is chosen by researchers when it comes to interviewing or polling students (which was the main method of collecting data in this study), which is clearly demonstrated in the literature review. Data collection was based on interviews. The interview was originally planned to be conducted in a distance format through the Zoom platform, as this was the only way out at the time of the study due to the quarantine measures taken in Nur-Sultan. In addition, the question was again about saving time, in which the remote interview greatly contributed. For interview, were selected 10 students from different universities of Nur-Sultan. While it should be noted that there was no goal of choosing students from one particular faculty. The benefit of this decision was that the study touched on a comparison of academic performance in those subjects that students took before and after the integration of quarantine (2nd semester of the 2019-2020 academic year), and it was the lack of a goal of choosing students from a particular faculty that contributed to the fact that was to compare academic performance in different subjects and courses. The interview itself was semi-structured, there was a certain list of questions, but without any prohibitions in changing them or in composing new questions right during the interview.

## **Literature Review**

As mentioned earlier, distance learning has a number of advantages. Undoubtedly, this is the presence at the lecture, wherever you are, whether you are at home, at work, at the university, in a cafe, the lecture and lessons are available to you anywhere, it is enough to have a gadget like a smartphone, tablet or laptop. And of course, foreign students can study at universities in other countries while in their own country. This leads to the following advantage-reduced costs. Students and schoolchildren do not spend money on transportation to the educational institution and back home, nor do they spend money on food. And of course, the most important plus is the relatively free time. During offline training, students must attend the lecture and the only thing they can do is listen to the lecturer and gain knowledge. During distance learning, students can simultaneously engage in other activities during the lecture, such as working or doing homework on another subject, etc. As you can see, the advantages are quite significant, and it is worth recognizing that this type of training has good prospects. But can the effectiveness of training be considered an advantage and is it better than the usual format? Therefore, there are many opinions on the issue.

For a better understanding of the literature review, it will be divided into 2 sections, The first section of literature review will examine the opinions of different experts on distance learning during the pandemic, and distance learning in general. The second section will examine research based on student's opinions about online learning, as well as the analysis of academic performance.

First, we will begin with opinion Y. A. Baskakov and O. M. Soboleva (2010) about online education. They believe that such an online learning format as a video conference is a good alternative to the usual learning format. A significant advantage of videoconferencing, in their opinion, is the ability to simultaneously see and hear your interlocutor on the screen with the creation of the effect of direct communication, to work simultaneously with several audiences of students located in different geographical locations: to read lectures, conduct seminars and practical classes, to monitor knowledge. But they identified several disadvantages of online learning, for example, increased requirements for teaching in the distance learning system. If the teacher does not own information resources, he cannot use the resources; therefore, the presentation of information and the quality of teaching deteriorates. Also, a significant disadvantage is the reduced discipline, for example, students have a much greater chance to write off on test papers in the online format than in the usual training format, since online control is much more relaxed, and students have at hand Internet resources from which they can easily take information. Such a problem could be solved with the Proctorio program, but it is difficult to use. And the last drawback is virtual communication. Yes, students can communicate via video

conference, but this, according to the authors, is still worse than live communication and causes psychological discomfort.

Jiří Zounek (2013) in his short work highlighted the main advantages and disadvantages of distance learning. According to the author, in addition to the convenience of distance learning, which I indicated earlier, it also has a significant advantage in storing of information. In the usual format of teaching, students constantly have to keep notes of lectures manually, and the records themselves are quite inconvenient to store, and may well disappear. Such a disadvantage of the online format is deprived. In the distance learning format, it is much easier for students to keep records in the cloud storage, to which they constantly have access, or for example, they can record a video lesson and review them if necessary, it is enough to have an Internet connection. A significant disadvantage according to Jiří Zounek (2013) is the lack of knowledge of the use of online learning, students often find it difficult to use various time management tools, presentations, text processing, collaboration, and other tools for personal learning. Learning with technology can also cause negative dissatisfaction among students who lack the motivation and ability to organize the workload and learn on their own. Some students may require strict and detailed guidance from teachers; however, when implementing e-learning solutions, teachers usually expect students to be more active, self-organized, and independent. Therefore, for unmotivated students with poor learning habits, technology can lead to lower productivity and worse learning outcomes. Moreover, students can sometimes feel isolated and abandoned in a virtual environment. Another important problem of online learning is the problem of communication and information overload. Too much contact and constant communication through various channels and services can greatly distract students from focused, focused learning and problem solving. Incorrectly, structured and delivered instructions can lead to further overload of information and training (for example, in mixed e-learning courses). It can be assumed that a sharp increase in the load is one of the factors that cause plagiarism and electronic forms of fraud.

Shivangi Dhawan (2020) highlighted the main and significant advantages and disadvantages of learning during the pandemic. He believes that the development of online education is a panacea in absolutely any crisis, whether it is a pandemic like a corona virus, or a natural disaster or just bad weather. According to the author, online learning has a huge potential, thanks to several impressive advantages. One of the advantages is that online learning is focused on students and offers more flexibility in terms of time and location.

Online training allows us to customize our order according to the training time. In addition to flexibility, it implies variations in the conduct of lessons. Many online tools and applications are available, which is essential for an effective and efficient learning environment. Educators can use

a combination of audio, video, and text to connect with their students during this time of crisis to maintain a human approach to their lectures. This can help in creating a collaborative and interactive learning environment where students can immediately give feedback, ask questions, and have fun learning.

But there are disadvantages that play a significant role in reducing efficiency. One of the disadvantages is the lack of personal attention. Students lack two-way interaction, which is sometimes difficult to implement through the screens of computers and smartphones. The learning process cannot reach its full potential until students begin to practice what they are learning. Sometimes online content is only theoretical in nature and does not allow students to practice and learn effectively. E-learning has certain disadvantages in the form that it can hinder communication between the student and the teacher, that is, direct communication and human communication are lost.

Flexibility in time and place, while this is the power of online learning, these aspects are fragile and create challenges. Frivolous student behavior in terms of time and flexibility can cause a lot of problems.

Manijeh Sadeghi (2020). Identified the main disadvantages of distance learning. Although distance learning offers more people the opportunity to get a higher education, according to the professor, it is not deprived of disadvantages, and there are quite a lot of them:

High probability of distraction. In the absence of teachers for personal communication and classmates who could help with constant reminders of unfinished tasks, the chances of being distracted by something and missing deadlines are very high. Students need to remain motivated and focused if they want to complete a distance learning course. Distance learning is not the best idea if the student is inclined to postpone things for later and can not meet the deadlines.

Complex usage and technology. The author explained that any student who wants to enroll in a distance learning program should invest in equipment, including a computer, a webcam, and a stable Internet connection. There is absolutely no physical contact between students and teachers, as the training is conducted online. This over-reliance on technology is a serious disadvantage of distance learning. In the event of any software or hardware problem, or any situation, the class will stop, which may interrupt the learning process. Moreover, the complex nature of the technology used in distance learning restricts online education only to students who are computer-and technology-savvy.



Lack of social interaction. Students will often study alone, so they may feel isolated and miss out on the social physical interaction that accompanies attending a traditional classroom. Moreover, they do not have the opportunity to practice the lessons orally. The lack of physical interaction in the educational process can cause a lot of problems. Distance learning restricts students to classes and online learning materials only. Although students can interact through chats, this is not comparable to communicating in a traditional format.

Difficulties in communicating with teachers. If students have problems with assignments or have questions about a lecture in a traditional classroom, it is usually quite easy to talk to the instructor before or after the lesson, or schedule online meetings at other times. However, when students take distance learning, it will be more difficult for them to contact their instructor. While they can send an email, it definitely won't bring them the immediate response they would get if they could sit down with their instructor.

Olga Evdoshenko (2020) discussed in more detail the main disadvantages of distance learning in Russia, as in the CIS as a whole, compared to the traditional format that is familiar and understandable to all students.

Many people single out flexibility as the advantage of distance learning. However, this feature is not typical for the CIS system, since online classes are held according to the usual schedule, compiled by schools and some universities. Therefore, this fact is more of a disadvantage than an advantage. In the conditions of general self-isolation, it is worth considering that students, even at home, do not always have the opportunity to join a conference video lecture at a certain time. The experience of distance learning in other countries where this format of training is much more widely practiced and is familiar, for example, the United States, shows that universities encourage asynchronous submission of material, when students view the topic of the lecture at any time convenient for them and send completed tasks by the specified deadline.

Also, the author, in turn, considers the problems of distance learning, which can negatively affect the quality of education:

Emotional and psychological problems: domestic educational system inherent in a "live communication", when the addition of the teacher and student are nearby and the other students stare at a glowing screen all the time classes is not usual for students - all this leads to a certain discomfort not only the learner, but the learner, not only emotionally, but also physiological.

Methodological problems of teaching that are not adapted to the remote format of teaching, to the status and rights of a teacher working remotely, to the criteria and formalization of the assessment of knowledge obtained remotely.

Technical problems: - related to the lack of Internet access in all corners of all countries, especially the CIS: for example, in rural and provincial areas, tasks are simply posted on the doors of schools (This is very important point especially in countries like Kazakhstan). In addition, the author also includes difficulties in mastering computer programs by students, and what happens more often with teachers. Despite the age of high digital technologies, for many people, working with previously unknown formats causes difficulties and requires training and technical support.

Also, a significant problem in the author's opinion, which is worthy of attention, which was manifested in distance learning, is the objectivity of academic performance. In the current conditions, it became difficult for teachers to determine the correct level of knowledge of the material passed. According to the teachers' observation, students who scored low marks in the usual training format, during distance learning, pass tasks for high scores. The reason, apparently, lies in the high chance of reading and using Internet resources during the control. In addition, the reason for this phenomenon can be considered that some people lose the constraint that they experienced with the traditional training format. For them, the absence of other students nearby is a comfort zone that promotes the disclosure of abilities that could not be manifested earlier.

Djalilova K. M. (2020) describes the advantages and disadvantages of distance learning as follows. First, she, like the previous authors, notices the availability of this format. By studying remotely, students can gain knowledge from anywhere in the world. Students can study at home or on a trip, in a cafe or in the office at the workplace - in general, in any place where there is even the slightest Internet access. Most importantly, the distance format has a potential in future of allowing people to get an education at any university in the world. This accessibility is the main advantage of distance learning. The second advantage highlighted by the author is flexibility. In the process of distance learning, the student learns most of the material independently. Thus, he is free to choose the time for classes and perfectly combine study with work or training. This form of training goes well with work. As a rule, the time of online training can be easily adapted to almost any work schedule. For people who prefer to live on a non-standard schedule, distance learning is the best option. The third advantage, and a bit controversial, is the relative saving of money and time. If we do not take into account that the cost of training in many universities around the world, and especially in Kazakhstan, has not decreased in any way, then for the most part distance learning is cheaper than full-time. This is due to the fact that organizations that provide training services do not need to rent premises, buy furniture and equipment, and maintain a permanent staff of teachers.

Fourth, distance learning gives a person a certain set of knowledge and skills. Only the simplest online course requires the acquisition of new programming skills, as students learn to navigate various learning management systems and programs. As part of their online courses, the participation skills learned by students are used in many professions, including creating and sharing documents, including audio / video materials in assignments, completing online courses, and so on.

The disadvantages of online learning, according to the author, are primarily the restriction on the choice of faculties. Unfortunately, not all disciplines can be studied remotely. In some cases, you can not do without practical training under the guidance of an experienced mentor. Remotely, you can study history or literature, become an excellent designer or programmer. But it is impossible to become a pilot or a surgeon. In addition, there is such a phenomenon in the education system as educational, industrial and pre-graduate practices, which are also impractical to conduct remotely. But here the author notes that everything could be solved with the help of virtual reality technologies, but even in our time-this is a rather expensive way of learning. Secondly, it limited personal communication. Full-time training is valuable not only in terms of knowledge. An important element of offline learning is personal communication. The lack of live communication can greatly affect the psychology of any student, even introverts. Third, the fact that distance learning gives a person a certain set of knowledge can be considered not only a plus, but also a minus. Studying remotely, a person loses many of the positive "side effects" of academic education. For example, the process of taking notes of long lectures trains the speed of writing, develops mechanical memory and teaches you to select the most important fragments from the flow of information on the go. All these skills are very useful in everyday life, but distance learning is not.

Also, in the process of distance learning, you may encounter unforeseen circumstances that will hinder you. For example, at the most inopportune moment, your lights may turn off or your computer may fail. And the Internet may be cut off during an important online seminar, and there's nothing you can do about it. Distance learning makes you dependent on technology.

Finally, the lack of constant supervision and control on the part of the teacher is another very negative point. In the process of distance learning, students have to make their own curricula, and then monitor their implementation, constantly struggle with the desire to relax and postpone work for later. In live learning, there is constant monitoring on the part of the teacher, who helps in certain situations, monitors the correctness of the student's performance of the task, and in some moments controls the mood of the students.

The above section described the authors' opinions about online learning were analyzed. As you can see while reading the review, almost all the authors have the same opinion about the advantages and disadvantages of distance education. Earlier, the authors' opinions about online learning were analyzed. But what do the results of research based on interviews and analyses show? What is the attitude of students and teachers to distance learning? How online learning affected on students' performance?

Enes Beltekin & Ihsan Kuyulu (2020) conducted research on 594 respondents who were university students, of which 139 were students of private universities, and the remaining 455 students were educated at the Faculty of Sports Sciences and higher schools of Physical education and Sports of state universities. It was found that the majority of participants negatively assess the effectiveness of the distance learning system as part of their responses to proposals on the effectiveness of the distance learning system. As a result, the distance learning system could not be as effective as the classical face-to-face training, and was not effective enough. Many students expressed their dissatisfaction with online learning due to the loss of motivation to study. An important factor is also that students do not recommend studying in this format and do not consider it a good alternative to classical education. But it is worth noting that most of the respondents were students of sports education, and as many people know, sports is a fairly contact, active and team type of activity, where live communication plays a huge role, which is why students have such a negative attitude.

But a similar study was conducted by their relatives Mustafa Tevfik Hebecci, Yasemin Bertiz, Selahattin Alan (2020). Their study included, which was also based on an interview, 20 students and 16 teachers involved in distance learning. There are already slightly more conflicting opinions between students and teachers, but still most are dissatisfied with online learning. This study, conducted at the higher education level, found that students have problems preparing for distance learning and courses. In this study, students who were not satisfied with distance learning explained the reason for their dissatisfaction as a result of a lack of understanding of the subject, the fact that the teacher was inadequate, inadequate time and lack of infrastructure.

Also worth mentioning is a study conducted by All and Singh (2020). In this case, students are already more relaxed about distance learning, preferring it to classical learning. But they are not satisfied with the online experience due to the lack of live communication. It turned out that some students said that they did not understand the subject of the lessons and were not satisfied with the teachers. The problem mentioned here can be divided into two problems that arise in students and teachers. It is believed that the problem may be caused by students not being able to learn enough or adapt to the process, as well as the inadequacy of teachers in some areas. Looking at it from a

different perspective, the teacher plays a big role in providing an interactive environment where students can participate in the learning environment. One in four (26%) attended online classes much more often than they previously attended face-to-face classes. The high attendance of online classes can be explained by various reasons. First, the most obvious thing is that attending online classes requires less additional effort and time, both for students and teachers. Secondly, with the reduction of personal contacts with professors and classmates, students began to appreciate this opportunity more and tried not to miss online classes with professors, especially according to the researchers, the number of classes with the transition to online decreased compared to the usual training mode, since many lectures were recorded in advance.

A sociological study in a number of universities in Yekaterinburg, Chelyabinsk, and Moscow was conducted by 3 researchers: E. V. Grunt, E. A. Belyaeva, and S. Lissitsa (2020). The aim of the study was to study the main challenges faced by universities during the pandemic and the prospects for further development of distance education in Russian higher education. The study found that during the total transition to remote work in the context of the pandemic, higher education faced a number of challenges, the most important of which are: demotivation of students to study, low level of student satisfaction with the cost of training, as well as dissatisfaction with their chosen specialty and fear of future employment.

The study itself showed that the abrupt and unexpected transition to online training was quite painless, for example, 80% of the respondents had no technical difficulties. They did not have to buy additional software and hardware. One of the important outcomes of the entire study is that the survey more than 70% of the participants' academic achievement and grade point average for discipline do not differ compared to offline training, and 18% of the respondents assess went into decline, the cause of which is a large increase in jobs in all courses and disciplines. Also, despite the fact that the majority of respondents, according to them, did not deteriorate the average scores for studying online, they still believe that the quality of education with the transition to online mode has deteriorated. The reason they singled out is that they did not master the disciplines in full, despite the fact that the number of tasks given has increased much more.

Students were also asked about the obvious shortcomings of online education. In the survey, the main disadvantage of the students were highlighting issues such as the inability internship (which of course is the closure of many organizations and businesses during the pandemic), the complexity of laboratory work and experiments at home and the associated the lack of necessary equipment at home to complete tasks. And also the main problem of students is the influence of different situations on learning, the main of which is the situational Internet connection, which tended to let students down. And a few issues worth mentioning, as it is common for all the students from

around the world, one of which is the disparity between the quality of education with the cost of learning, one of the major problems of most students. 76% of respondents expressed low satisfaction (2.5 points out of 5) with the high cost of training, despite the complete transition to distance learning. The discomfort is caused by the problem of digital communication. Both educationally and normally, online communication is significantly different from offline communication, it forces you to give answers to the teacher's questions without seeing the teacher and his emotional response (since in my personal experience, most students, and sometimes even teachers, have a favorite tendency to sit at a lecture with the camera turned off).

The last of the main problems is the fear of students and teachers before the professional future. The reason for this fear is the uncertainty in the labor market that appeared during the pandemic: increasing unemployment, the crisis in the service sector, lower wages, and a change in the list of popular professions. As for the teaching staff, all the teachers noted that they were afraid of a reduction in the rate or dismissal in connection with the transfer of their courses to distance learning.

Of course, the study also revealed the advantages of online learning the ability to instantly access the available information, as well as independent time planning.

In a review of a previous study, one of the main problems that students reported in the survey was a large increase in the volume of assignments that teachers give. The study, which was conducted by representatives of Lomonosov Moscow State University - Irina Poluekhtova, Olga Vikhrova, Elena Vartanova (2020), also considered this problem. In general, this study stands out from the previous ones considered in the literature review because it was conducted remotely during the general isolation, for example, a questionnaire (open questions) was sent out via e-mail to respondents who were journalists. The research topic itself was focused on determining the effectiveness of online training for professional training of journalists. The survey revealed that, as in the previous study, the volume of tasks for future journalists also increased. According to the researchers, the increase in the academic load and the time spent on training is primarily associated with an increase in the number of independent classes. According to the students, 80% of the time was spent only on independent work, for example, writing assignments, studying educational materials, as well as mandatory reading of fiction and recommended academic reading. One of the main results of this study that was revealed is that, the attendance of classes among students has increased.

Now, the effectiveness of online learning will be considered. Some students are ambivalent about the effectiveness of distance learning: for example, 40% of respondents believe that the

effectiveness of distance learning has decreased, while 36% believe that this is not the case, and the other 24% found it difficult to answer.

The obvious advantage of online learning, which has received the maximum number of positive ratings from students, is of course greater freedom in managing your time, examples of which were mentioned at the very beginning of the literature review. Among the advantages evaluated by the students is also comfort and convenience.

Among the shortcomings, the students identified a sharp increase in the educational process, which was mentioned earlier. According to the students, the training has become self-learning, as the role of the teacher has been significantly reduced. The second very serious drawback is the deterioration of relations. If the lack of communication with fellow students is most likely a psychological discomfort, then the lack of direct contact and live communication with professors is directly related to a decrease in the effectiveness of the educational process, since students said that the online format does not allow them to receive live feedback from professors and teachers.

Texas researchers (2021) presented a study using mixed methods to find out whether students developed learned helplessness and mental health problems associated with switching to online learning technology in the second half of the spring 2020 semester due to the COVID-19 pandemic. Using qualitative interviews and a survey of 106 respondents, they found that a relatively small number of students directly experienced learned helplessness with the transition to online learning. But they also found that many students struggled with mental health issues due to their isolation and environment after quickly transitioning from in-person to fully online learning. Isolation has been found to be an important contributor to mental health problems during a pandemic among undergraduate students. Most of the students who took part in the survey felt that the interaction available to them during the semester only in online learning was not enough for them to feel connected. This lack of proper communication, combined with other stresses and difficulties of online learning, can lead to increased stress and poorer overall mental health.

However, there are also studies where students and teachers, in addition to the negative aspects, also express positive features of the online format.

For example, in a study conducted by the Masters of Education Management, Graduate School, Kristen University in Indonesia Bernadetha Nadeak (2020), an interesting conclusion was made: in distance learning, students feel much more comfortable asking questions and expressing their opinions in a lecture forum that is held on the Internet via social networks, video conferences or via messengers. Also, according to students, homeschooling helps them by allowing them not to feel the pressure from other people that they usually feel when they learn face-to-face in lectures.

The physical absence of lecturers also allows them not to feel awkward when expressing their opinions. The absence of physical barriers and the limited space and time make it easier for students to communicate. In addition, online learning eliminates the feeling of awkwardness, so students can freely express their thoughts and ask questions, which is an undoubted advantage of distance learning.

Online distance learning using the Internet can also contribute to students' independent learning. Learning without the direct guidance of teachers contributes to the fact that students independently search for information about the course materials and tasks that are given to them. For example, some of the activities that a student performs independently in distance learning are reading many reference books, online articles, scientific journals, or discussing with colleagues through instant messaging applications.

But despite such significant advantages of distance learning, it has the same significant disadvantages. For example, one of the disadvantages is that the completely different location of the lecturer and the student during the training makes the lecturer unable to directly control the activities and training of students during the lecture process. There is no guarantee that students will actually pay attention to the lecturer's explanations. Students are most often distracted from online lectures, which happens much less often in face-to-face processes, thus the loss of concentration leads to a decrease in efficiency. Also, as a result of the survey, another significant drawback was identified. Most students have difficulty understanding the course materials presented on the Internet.

The material, which is mostly reading material, cannot be fully understood by students. Students assume that simply reading the material and completing tasks on it is not enough, they need an oral explanation directly from the teacher about some complex material. Communication with teachers via video conferencing applications cannot provide a detailed explanation of the material being discussed. And based on the last listed drawback, it should be concluded that interaction with lecturers becomes very important in online learning, since it can reduce the psychological distance, which, in turn, will lead to better learning.

It was previously stated that with the transition to the distance format, student attendance has increased dramatically. The results of the study (V. Shenoy, N. Vijay, S. Mahendher. 2020), based on the responses of interviews with 20 teachers, also show this trend. Initially, there was quite a lot of dissonance in the faculties about the participation and presence of students in lectures during isolation. When teachers started teaching classes online, they were shocked to see that student attendance was 20 times higher than in regular classes, and the percentage of attendance was close



to 100%, which undoubtedly delighted the teachers. The most remarkable thing is that the teachers understood that the students would be very much in need of social communication, so the ISBR Business School took the initiative of cooperation over coffee online and shares its thanks every Friday at 17: 00 during the quarantine period. This helped the students maintain their emotional "tone" at a high level during the quarantine period. Also, according to the professors, online is much better than offline, as both teachers and students can focus on their family.

Also, to analyze the academic performance of students in distance learning, a study was conducted (Khusanov K., Kakharov R., 2020). The article examines the impact of the pandemic-related quarantine on the organization and quality of the educational process in higher education institutions in Uzbekistan. In this study, such research methods as a systematic approach, data analysis, and statistical analysis of results were used. To study the impact of the pandemic and quarantine on the educational process, two universities were selected: the Turin Polytechnic University in Tashkent (TPUT) and the Namangan Institute of Civil Engineering (NamISI), an institute located in the Ferghana Valley, the most densely populated region of Uzbekistan.

The study was decided to be conducted on students of these 2 universities and on different subjects. In the first study, in which the University of TPUT participated, it was decided to choose a subject - "Linear Algebra and Geometry". It was conducted on the 2nd year students.

The results show a generally low average student attendance both before the quarantine and during online lessons caused by the pandemic (20% -40% and 3% -10%, respectively). At the same time, there is an even greater decline in attendance during the quarantine period (-17% -30%) due to additional issues related to the pandemic. TPUT University students from the regions, which account for more than 80% of the total student population, were returned to their places during the quarantine, and they encountered poor internet infrastructure in the regions. This fully manifested itself during online exams: students were often unable to connect to the exam server. In order to solve this important problem and ensure a more successful online learning process, TPUT teachers, in addition to online learning using the Telegram app, created chat groups on academic disciplines that were used to discuss online questions and problems that students faced while studying the subject. The effectiveness of this method of discussion and additional support for students is also illustrated by the number of participants in such chats. So, in the subject of LAG, the number of chat subscribers was 342 (83.6%), and the majority of participating students were active there during the entire period of study and exams.

When studying the quality of online learning, the results of the exams in the subject "Linear Algebra and Geometry" for 2019 and 2020 were selected for comparison.

Scores	Number of students	18	19	20	21	22	23	24	25	26	27	28	29	30	30+	Average score
2019	42	28	2	4	1	1	0	4	1	0	0	0	0	1	0	19.429
2020	85	43	7	0	0	23	2	0	8	0	0	0	1	0	1	20.224

Students' academic performance was assessed on a scale of 18 to 30 + points. In the summer control session of 2019, 42 students successfully passed the exam, and in the summer session of 2020-85 students. As you can see, the performance in distance learning (20,224 points) shows a higher score compared to the period before quarantine (19,429 points). The average final exam score increased by 0.8 points, or 4%.

#### Online training in NamISI

Three groups of 4th year students in Engineering Technology (S1) and Language Practice (S2) were selected for the study during the 1st semester before the pandemic and in the 2nd semester. Students' academic performance is evaluated on a scale of 0%-100%. The analysis of the table shows an average increase in academic performance during the pandemic by 8%. Moreover, the increase in academic performance was observed both in technical subjects (S1,+6) and in humanitarian subjects (S2, +5.2).

Period		S1			Average of S1	S2			Average Of S2	Total Average
	<b>Groups</b>	13	14	15		13	14	15		
	<b>Number of students</b>	20	16	15		20	16	15		
<b>Before Quarantine</b>	<b>Assessment (%)</b>	69	69	72	69.8	71	72	76	72.7	71.3
<b>During Quarantine</b>	<b>Assessment (%)</b>	80	72	75	75.8	74	81	79	77.9	76.9
<b>Total</b>	<b>Difference (%)</b>	+11	+3	+3	+6	+2	+9	+3	+5.2	+5.6

## **Results**

During the interview, the main shortcomings that hinder the future potential of online learning were clarified. The most noticeable and important disadvantage of distance learning from a psychological point of view is the lack of live communication with people. From a technical point of view, the main drawback is the dependence on a good connection with the internet. According to the students, the Internet connection in Kazakhstan is not good enough to conduct lectures comfortably and without technical errors. But in terms of academic performance, the online format has succeeded more than the usual learning format. All students, without exception, have increased grades in the subjects they took, both in a live format before the quarantine, and remotely during the quarantine. But unfortunately, there is a strong negative impact on the psyche and character of students. It turned out that the online format contributes to the appearance of isolation in the character of students who were more sociable and supportive of other people. In addition, in most cases, there is an increase in laziness due to physical inactivity during quarantine.

### **1) What expectations did you have after the news of the introduction of quarantine in studies?**

All of the respondents had no idea how the classes of this format would be conducted and therefore they experienced some worries about this. Their lack of understanding of online learning can be justified by the fact that none of the respondents has ever had to study online. In addition, they experienced anxiety due to not knowing how long the quarantine would last. But in addition to some excitement and uncertainty, the respondents also noted that they experienced a certain joy that they now have to study at home.

### **2) And what are your final impressions of more than a year of distance learning?**

All respondents have negative impressions of distance learning. During the beginning of the quarantine, they were happy with their studies at home, as they had a huge amount of free time. But every day, each of the respondents began to experience discomfort associated with the lack of live communication with their friends, classmates and teachers. But at the same time, the respondents appreciated the learning process itself. According to them, they memorized a lot more information and gained more knowledge through online learning than they could get in the usual lecture format. Perhaps the reason for this phenomenon, according to them, is that they passed lectures while at home, in comfortable conditions and conveniences, which contributed to the attendance of all online lectures, as well as an increase in time for studying the material, since instead of wasting time, for example, on trips, they spent it to study.

### **3) What do you think made distance learning less effective?**

Absolutely all of the respondents identified the main drawback - the lack of live communication. From their point of view, they often lacked emotional contact and support from other people. A less significant disadvantage highlighted by students is the dependence on a good connection to the Internet, for example, the respondents often had situations when they left the class due to a poor Internet connection.

### **4) How would you rate the work of the teachers?**

Students evaluated the work of the teacher in 2 periods of time: at the beginning of the quarantine and later. In the first months, it was difficult for students to study, since the teachers themselves did not have the experience and technological knowledge to conduct lectures in an online format. Half of the students surveyed noted that at the beginning of the quarantine, there were moments when teachers did not even know how to include presentations in platforms, so they just had to listen to the teacher's speech. Therefore, they assessed the work of teachers at the beginning of the quarantine rather negatively. But this was only a temporary problem, the teachers subsequently acquired the necessary skills each time. In addition, the students felt that the teachers were becoming more confident in teaching. Accordingly, the students appreciated the work of teachers after the initial stage of quarantine.

### **5) What advantages of online learning can you highlight?**

The first advantage that the students identified was a huge amount of free time. They did not have to travel from home to university and back, and besides that, spend time in a live presence.

The second advantage is flexibility and convenience. The students liked the fact that they could connect to classes from anywhere, it was just enough to have a good Internet connection.

### **6) Do you have an example where online has helped improve your grades?**

It is worth noting in advance that it was customary to take grades for the 2nd semester of the 2019-2020 year of study as an example, since the quarantine began in the middle of the semester, so it was easy to compare. Absolutely all of the respondents had undoubtedly higher scores than the usual format. In particular, 7 respondents had higher marks for "participation" in discipline. The reason for this was that, being behind a laptop or smartphone screen, they felt more confident; it was easier for them to participate in the discussion.

**7) What was your mental state during online learning, when you were forced to study separately from your fellow students and acquaintances?**

As mentioned earlier, all students felt uncomfortable being away from other students and teachers. Even 2 of the respondents, being introverted by nature, lacked a lively pastime with their fellow students.

**8) How did the transition to online format affect your character?**

The online format had a negative effect on 3 students from a psychological point of view. In early June, when the quarantine was eased, these 3rd students noticed that it became more difficult for them to communicate with people, compared to the time before quarantine, and they themselves became more withdrawn in nature. A possible reason for this is that loneliness or remoteness from friends contributed to the fact that they can say "forgotten how" live communication. Also, 8 respondents, according to their statement, have become much lazier compared to the time before quarantine. The reason is very simple - since the students had to be at home all day, they became less mobile, which contributed to their laziness.

## **Conclusion**

Distance learning shows the same effectiveness as conventional learning when it comes to academic performance, where students say they have greatly improved their grades. In addition, distance learning has shown its effectiveness in encouraging students to be active at lectures, since online they do not feel the pressure of being behind the screens of their devices. Online is effective as offline learning when it comes to academic performance. However, it is important to understand that learning is not just about academic performance. Training, regardless of which institution it takes place in, whether it is at school, university, in an organization or in business, it acts primarily not only as the development in terms of knowledge and skills, but also the development of a student as a person. Everyday live communication with their classmates at school or on an internship give a person the necessary basis for the development of his character, you can literally say educating a person. From this point of view, unfortunately, distance learning loses to the usual format. Indeed, students get a huge base of knowledge and skills in both formats equally well, but distance learning loses in the development of personality, forming in student the desire for isolation and what is most harmful – develops laziness. Therefore, despite the good academic performance that the interviewed students demonstrated during their studies before and after the integration of quarantine, unfortunately, distance learning can't be as a complete alternative to live learning in all areas. However, at the same time, distance learning can potentially prove itself well if it will be combined with the usual format of learning, where all the best from both sides will be combined, and each other's shortcomings will be eradicated. For example, it is not excluded that the courses will consist of half of both distance lectures and regular ones. In this mixed format, students will be able to have enough free time and save their resources due to the presence of online lectures on certain days, but at the same time, they will develop morally and will not become lazy, since offline lectures will allow them to maintain live communication and physical activity at the proper level.

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