

Published by the decision of the Scientific Council  
of Khachatur Abovian  
Armenian State Pedagogical University



Department of Philosophy and Logic  
named after Academician Georg Brutian



# W I S D O M

Special Issue 3(4), 2022

PHILOSOPHY OF EDUCATION



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ASPU Publication  
YEREVAN – 2022

# INVESTIGATION OF THE EFFICIENCY OF DISTANCE LEARNING IN THE CONDITIONS OF THE PANDEMIC

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*Abstract:* In recent decades, the education system has been influenced by digital technologies, changing it. These changes had certainly been studied long before the pandemic, but the full transition to online learning occurred precisely in 2021 during the lockdown. The article analyzes and describes the trends in higher education that have tangibly and significantly affected its effectiveness under the conditions of the coronavirus pandemic. The tendencies that have been discussed and predicted by the scientific community require a deeper understanding from the standpoint of real pedagogical practice in order to resolve the consequences of the global educational crisis. The authors are convinced that education will not be the same as it was before the pandemic. We should evaluate the forms of online education and explore the motivation for learning since the education of the future depends on the search for new forms.

*Keywords:* educational tendencies of higher education, digital learning technologies, education efficiency, forms of distance education.

## Introduction

In recent decades, there have been global changes in information technologies, which are reflected in the rapid growth and evolution, in the openness of information resources for knowledge and even in a change in the thinking of entire generations of young people. These changes directly affect the field of education (Aznar-Díaz, Torres, Alonso-García, & Rodríguez-Jiménez, 2019; Tarman & Kilinc, 2022; Garcia, 2021). In the scientific literature, this is observed in the search for new concepts of modern education and theoretical understanding of the changes in the modern world (Evans-Amalu & Claravall, 2021; Isi-

dro & Teichert, 2021; Kim, Coenraad, & Park, 2021; Akhmetshin, Vasilev, Zekiy, & Zakieva, 2021). In addition, it is possible to claim that we are moving into another era - the era of digitalization (Erbilgin & Şahin, 2021; Pogosyan, 2021; Ilomaki, Paavola, Lakkala, & Kantosalo, 2016). A person lives in a constantly changing environment and always makes decisions about the interpretation of multi-valued information at all levels, depending on different types of contexts (Chernigovskaya et al., 2020).

In addition to general civilizational trends, in 2020, the whole world faced a new challenge in the form of a pandemic. Changes have occurred in all spheres of society. Unprecedented restric-

tive measures have been introduced to preserve the life and health of people around the world. With the emergence of the COVID-19 epidemic, the termination of formal training at universities and the closure of countries to combat the virus had a serious impact on higher education (Schleicher, 2020). In this regard, changes that have taken place in the field of education, and especially in the field of higher education, are of particular research interest. In many countries, there has been a transition to distance learning. The article discusses the features of adaptation to digital learning in Russia. The Moscow Polytechnic University is taken as an example of this change-over. For this purpose, a face-to-face expert survey of teachers and an online survey of students studying at the University were conducted.

The purpose of this article is to study various forms of distance learning at a university during the pandemic and identify tendencies and prospects of development.

To achieve this goal, the following research questions have been posed:

1. Are students equally involved in learning in terms of live participation in different forms of remote and face-to-face classes?
2. Has isolation affected the psychological state of students and, as a result, their motivation to study?
3. What forms of classes allow students to keep motivated in the process of distance learning?
4. Are there any global and systemic trends affecting the entire learning process?

## Theoretical Background

Having studied the literature on the subject of study by modern authors, we identified a number of tendencies significantly affecting the education system. First, there has occurred a civilization change. A new type of civilization has emerged – a digital one and, accordingly, digital culture. The acceleration of historical time was mentioned by S. P. Kapitsa, who described models of a future reality, noting that our sense of time has fundamentally accelerated over the past 20 years (Kapitsa, 2004a). “The model does not directly show what the cyclical nature of world development will be like after the transition. One can only assume that the structure of time and the duration of the cycles will be associated with

a deep restructuring of the development of mankind after the transition” (Kapitsa, 2004b).

Although Alvin Toffler proposed a classification of three civilizational waves, and his book gave quite a reliable forecast for the nearest future, now scientists are talking about the fourth civilizational wave – a digital one (Toffler, 1980). Why can't the transition be called a third wave? Because there is a significant difference – the psyche of generations is changing, the dynamics of mental cognitive processes is changing under the influence of the digital environment (Dudukalov, Terenina, Perova, & Ushakov, 2021; Martínez, Arutyunyan, Karabasheva, & Yesturliyeva, 2020; Belousova et al., 2021). As for perception, there are obvious preferences for visual, simple, concise and rather superficial information. This is crucial for higher education, one of the teaching tasks of which is the delivery of fundamental knowledge and the continuation of fundamental scientific research (Ward, Duke, Gneezy, & Bos, 2017).

Secondly, we live in an era of growing social connections. Physiologically, the number of possible connections could previously be described by the Dunbar number – the permissible number of social connections proceeding from the size of the brain. Among monkeys, there are about 50 individuals (of whom 3-4 are in the inner circle). Among humans, there are from 130 to 200 people (of whom 12-15 are in the inner circle), and a person of the 21<sup>st</sup> century has thousands of connections. Thus, we are witnessing the collapse of social structures – hyper nets in society, hyper nets in the brain and the restructuring of these networks.

It turns out that the restructuring of the number of social networks cannot but affect the quality of thinking, and in our time, born in a new technological era, there are children with a new “type of brain”.

Thirdly, the effectiveness of training is significantly affected by the lack of authority and verification of information.

Kapitsa emphasized that “humanity is a non-linear, strongly interacting system, embraced by cultural, intellectual interaction”. We are all dependent on each other, and this is a fact. That is, intellectual interaction and the role of intellectuals is enormous. And the main question is who will control the interaction in the digital space and what goals will be set. Why is it important?

It is because, in our time, authorities are almost completely lost, and vertical relations have ceased to work as they had done before. Such examples are known to every teacher, and in the field of public relations, this can be clearly seen in the media. But verification of the acquired knowledge is in close connection with authority and reliance on the source. These tendencies practically impede learning since such basic elements of social interaction as infection and imitation are undermined. If there are no standards, who is it to look up and what aims to pursue? Undoubtedly, there is a need for communication; this is confirmed by all scientific studies of recent years. Thus, we can assert that the need for knowledge and learning remains. The problem is the lack of communicative skills due to the loss of authorities and verified information. Teachers note that students tend to express their own opinions and fiercely defend the rights to this position, which is sometimes very naive and prevents them from constructing the system of relationships as a system with common ideas.

In public educational communities, this trend has been called “social autism” or “digital autism”, which is an insufficient level of development of skills, abilities and knowledge among people with a healthy nervous system, i.e. a kind of intellectual deprivation. That is, we are not talking about a medical problem, not about the autism of mentally ill people, but about autism as the main line in the behaviour of a physiologically healthy person. This problem or trend has not yet received scientific substantiation, but in practice, it is obvious not only as a pedagogical problem but also as a problem of society.

Back in 1997, the amount of screen time was equal to the amount of time we spent on personal socialization. When the iPhone was introduced in 2007, screen time made up 8 hours, while face-to-face communication took less than 2 hours (Sigman, 2009). Digital (social) autism is a situation when young people cannot maintain long-term psychological contact with each other, and they are not interested in the inner world of another person, and other people have become replaceable for them because they do not see the value of each of them as an individual. The main problem of social, digital autism is the lack of long-term social plans.

Fourth, there is currently a problem of content conflict.

We know that biologically the brain, as the most energy-consuming organ, tends to save energy. Therefore, when choosing information, we prefer the one which is easy to understand, emotionally charged and, accordingly, less energy-consuming. How can fundamental educational content compete with the most primitive one, which is entertaining, for example? The linguistic way of world cognition has transformed into the image-oriented one.

The congestion of the information space with these kinds of useless images is obvious, and we are talking about memes, emojis and other pictures that do not carry information and waste our energy resources.

In addition, the location of the phone, and its physical closeness to us or being in an inaccessible place, affects the amount of working memory and fluid intelligence.

Studies show that we get stupid when we have a phone nearby. And we get smarter, i.e. the working memory capacity and fluid memory increase, when it is in another room (Ward, Duke, Gneezy, Maarten & Bos, 2017). What is more, these cognitive aftereffects are the highest for those who are most dependent on smartphones

This problem is raised today in modern works by such researchers as Saenko N. R. (“Understanding in the context of remote training”) (Saenko, Panova, Tjumentseva, & Baturina, 2021), Jamali Kivi, P. (“The comparative effects of teacher versus peer-scaffolding on EFL learners’ incidental vocabulary learning and reading comprehension: a socio-cultural perspective”) (Jamali Kivi et al., 2021), Shurygin, V. (“Learning management systems in academic and corporate distance education”) (Shurygin, Saenko, Zekiy, Klochko, & Kulapov, 2021), Tsvetkova M. (“Organizing students’ independent work at universities for professional competencies formation and personality development”) (Tsvetkova, Saenko, Levina, Kondratenko & Khimmataliev, 2021). Many works have been written about computerization as an educational process and the effectiveness of introducing this phenomenon into the educational process. This question has been raised many times (Korotaeva, 2020; Abramova & Korotaeva, 2019; Hoe et al., 2021; Balganova, 2021), but with regard to the issue of transferring education completely to a digital format,

which is due to the situation of the pandemic, such a situation in education has developed for the first time in the history of pedagogy. The studies of scientists who are analyzing the effectiveness of learning with the help of digital technologies, such as works by A. E. Godenko (Godenko, Boyko, Gadgiev, & Filimonova, 2021), are of special interest. He claims that the flow of students is decreasing every year due to the current situation in different countries (Corvid-19 virus pandemic). The observations of E. P. Panova and E. V. Otts in the field of project activities, which have also been digitized during the pandemic, are also interesting (Panova, Tjumentseva, Koroleva, Ibragimova, & Samusenkov, 2021; Otts et al., 2021).

Many researchers reflect both on the possibilities of such an experience and on the results of it (Semikina & Semikin, 2019; Vasilyeva, Boikov, Erokhina, & Trifonov, 2021; Otts, Panova, Lobanova, Bochamnikova, Panfilova & Panfilov, 2021; Krylova, Zhundibayeva, Kadyrov, Talaspaóeva, Fatkiyeva & Sabiyeva, 2020; Achayeva & Subbotina, 2015; Shmalko & Rudakova, 2021). There have appeared a few works that sum up the first results of the progress of students who took courses in a digital format. When creating educational content, one must clearly realize and understand not only the mechanisms of its perception but also the threats to the health of its users. It is this problem that is raised today in the modern works of such a researcher as Tyumentseva (Tyumentseva, Kharlamova, & Godenko, 2021). The role of a teacher and his or her functional role in the new digital reality today is also becoming an important subject for discussion in modern pedagogy.

## Methods

This study has been conducted to explore the characteristics of digital distance learning during the pandemic. Our research was conducted before the pandemic and during the pandemic. The purpose of this research is to study various forms of distance learning at a university during the pandemic and identify tendencies and prospects of development. Therefore, one of the objectives of the study was to describe the features of distance learning through the eyes of the parties in

involved in the process: teachers and students. This goal was achieved by conducting quantitative analysis and formulating possible recommendations for improving the learning process. Thus, the study was aimed at studying the opinions of both students and teachers.

## Research Design

The study is based on the view that the effectiveness of full-time and distance learning has a number of significant differences. To assess the effectiveness of distance learning at Moscow Polytechnic University, a study was carried out in the period 2019-2021. In our opinion, maintaining a high level of motivation among students is the main task of any educational technology. Involvement in the educational process, emotional assessment of the learning process and its result is also important.

Therefore, to assess the effectiveness of training, the following criteria were introduced:

- The general level of student's motivation to learn
- Satisfaction with the learning process
- Attendance of different types of classes
- Academic performance in the final examination

The research was carried out in 2 stages:

Stage 1 - before the introduction of distance learning (before the pandemic).

Stage 2 - one year after the introduction of distance learning.

In the future, the authors plan to conduct a study at the 3rd stage – the stage of students entering full-time education or combined – full-time and distance learning.

The study of forms of classes and trends in higher education in the digital era involves the use of a number of scientific general philosophical principles and research methods, such as comparison, analysis and synthesis, induction and deduction, analogy, dialectical, systemic, structural-functional methods, as well as value-semantic, competence-based and other approaches, including the concepts of S. P. Kapitsa, E. Toffler and others, which allow us to describe the global trends in modern higher education. To achieve this goal, monographic works of leading foreign and Russian scientists on the problems of

the digitalization of education were used.

As for the collection of empirical data: our own study has been conducted on the basis of the Moscow Polytechnic University in the form of a survey (questionnaire and expert survey) with subsequent processing of the results by classical methods of mathematical and statistical data processing by means of program SPSS (IBM).

1. Are students equally involved in learning in terms of live participation in different forms of distance and face-to-face classes?
2. Has isolation affected the psychological state of students and, as a result, their motivation to study?
3. What forms of classes allow keeping students motivated in the process of distance learning?
4. Are there global and systemic trends affecting the entire learning process?

## Population and Sample

In the study, 250 students of the Moscow Polytechnic University and 25 teachers as experts acted as respondents. The students were divided into groups according to the following criteria: full-time/extramural learning, employed / unemployed, students with predominant humanitarian disciplines/students with predominant mathematical and technical subjects. A sample of students who study in different courses, receive education either in full-time form, or take non-resident instruction courses or part-time forms of study, as well as students doing either course in humanities and technical fields, will help to form a more objective opinion about the consequences that have developed under the influence of distance learning in the sphere of education. The questionnaire prepared in Google Forms was used to cover all students.

Table 1.

<i>Respondents</i>	<i>Number of respondents</i>	<i>Percentage ratio</i>
Students	120	100%
<i>MPU</i>	120	100%
<i>Academic groups:</i>		
Course 1	13	11.11%
Course 2	11	9.4%
Course 3	10	8.55%
Course 4	8	6.8%
“Russian Language and Literature”	14	12%
“History”	17	10.3%
“History and Social Studies”	17	18.8%
<i>Academic groups:</i>	20	17.1%
Course 1		
Course 2	12	10.3%
Course 3	15	12.8%
Course 4	13	11.11%
<i>Course 5</i>	9	7.7%
	13	11.11%

## Data Collection Tools

The researchers conducted an expert survey orally. The conducted expert survey made it possible to identify the criteria for the effectiveness of training and formed the basis of the questionnaire, with the help of which students of the Moscow Polytechnic University were interviewed.

The questionnaire included 25 questions that were aimed at identifying students' motivation for learning in the form of involvement in a certain form of classes and at identifying preferences for a particular form of classes, which, in our opinion, indicates the effectiveness of training. The questionnaire consisted of two parts. The first part clarified the general level of students' motivation for learning and satisfaction

with the learning process, as well as the possibility of applying the acquired knowledge at the university in the chosen professional career. In the second part, the students assessed the quality of the electronic educational resource by means of which they were mastering a course in a pandemic situation, as well as the popularity and attendance of various types of classes and forms of control. In the third part, we assessed the emotional state of students and the impact of isolation on this state and, as a result, on the motivation of students to learn.

Further, a descriptive analysis was used, which revealed the degree of students' active participation in various forms of distance and face-to-face classes and their preferred forms of classes, which, according to an expert survey, allow maintaining interest in the subject area and student motivation in the process of distance learning.

Purposeful sampling was used in the expert survey, which means that the researcher relied on their judgment in selecting participants for participation in the study. The participants of this study were permanent teachers of the humanities at the Faculty of Basic Competencies of Moscow Polytechnic University. Each of the interviewed experts has extensive teaching experience and has been working in higher education for at least 5 years. The survey was conducted face-to-face. The questions were open-ended and served the purpose of collecting key information for the subsequent compilation of a questionnaire for students.

An online survey method was used to survey the students. The students' accessed survey questions in Google Forms. Although the participation rate in the survey and the enrollment of students was 30% of the number of all students of the faculty, we believe that wide student participation in the survey was achieved. Thus the data are reliable. Each question was marked as required on the Google Forms questionnaire. Some of the questions were answered on the Likert scale, and the rest on the author's scale. Each student answered the questions in full.

### Data Collection

The study was conducted for a year and a half, from 2019 to 2021. In the first stage of the study,

an expert survey was conducted, which made it possible to formulate research questions and identify criteria for evaluating the effectiveness of various forms of classes. In the second stage, a questionnaire was developed, and the size of the sample sufficient to represent the data was calculated. In the third stage, the survey was conducted within a week in compliance with all ethical standards of sociological surveys (objectivity of information collection, confidentiality, anonymity). In the fourth stage, the obtained data were processed and analyzed using SPSS (IBM). The responses received during the survey were analyzed using the SPSS program (IBM). The survey responses were loaded into the program, and the students' names were coded. The possibilities of the program allowed us to analyze each issue.

### Data Analysis

The reliability of the study is based on the representativeness of the sample size, the variety of sources of information, the combination of quantitative and qualitative analysis, and the statistical significance of experimental data. SPSS was used to perform the descriptive analysis, and Excel was used to present the charts.

### Findings

The tendencies that have significantly influenced the effectiveness of higher education in recent decades and have manifested themselves even more clearly in the context of the coronavirus pandemic, which spread widely throughout the world in early 2020 and affected all areas, especially education, have been described. The trends that were discussed and predicted by the scientific community require a deeper understanding from the standpoint of real pedagogical practice in order to resolve the consequences of the global educational crisis. The COVID-19 pandemic has shaken the very foundations of education: its ability to be. The authors are convinced that today it is important to rethink the problems of the new digital, online and pedagogical potential of modern education.

The analysis of modern scientific research literature resulted in the author's firm conviction that now we are at the point of no return, and ed-

education, the way it had been before the pandemic, will no longer exist. We should evaluate the forms of online education and investigate the motivation for learning since the education of the future depends on the search for new forms.

The article presents an analysis and generalization of the main trends in the field of education thanks to the work of leading Russian and foreign scientists and educational theorists and the results of our own research on students' motivation and the effectiveness of various forms of

distance learning.

Long before the coronavirus pandemic, digital technologies had affected the education system and the higher education system in particular. Obviously, higher education has radically changed in terms of content, forms of study and efficiency.

As for the first question, we should compare the pre-pandemic and post-pandemic students' preferences in terms of forms of study (Fig. 1 and Fig. 2).

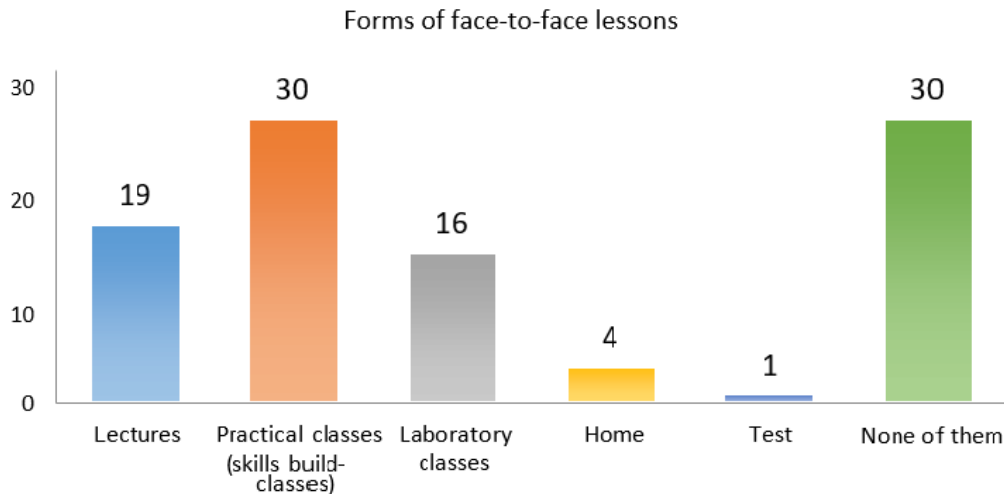


Figure 1. Student Preferences of Face-to-Face Learning.

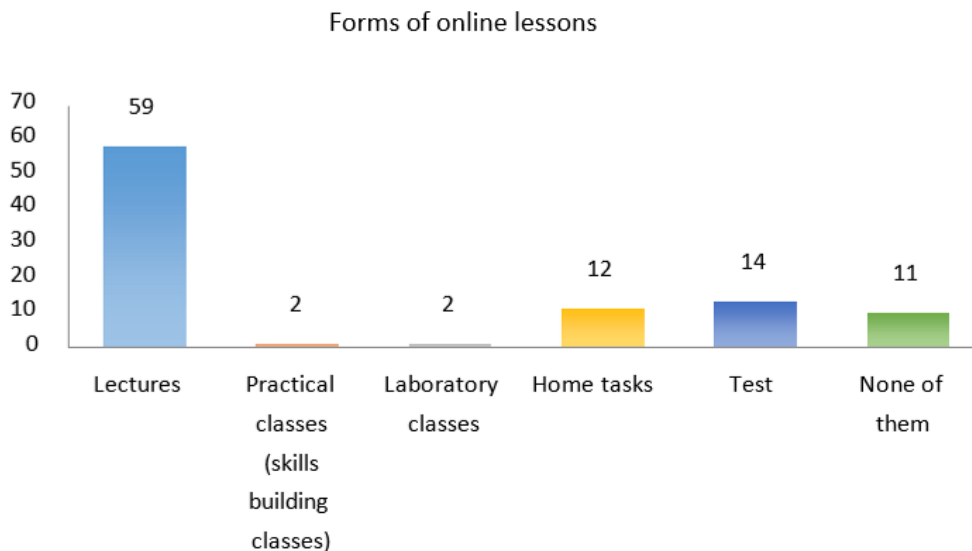


Figure 2. Student Preferences of Online Learning.



We discovered a significant difference in preferences in forms of activity. Firstly, before the introduction of distance learning, about a third of all students surveyed indicated that all forms of teaching had not met their expectations.

After the introduction of quarantine and the transition to distance learning, the situation of dissatisfaction with the forms of education changed significantly. Only 11% of the respondents indicated that all forms of learning did not meet their expectations.

*In terms of the second question, we are going to note that the level of interest in theoretical knowledge in the format of lectures changed significantly. We noted an increased interest in these particular forms of distance learning. More than half (59%) of the respondents identified lectures as a priority form of training.*

Since the forms of conducting lectures were quite diverse, *dealing with the third question, we decided to identify the most effective format in*

terms of popularity among the audience.

The most effective format of lectures turned out to be the format of webinars involving instant feedback and oral dialogue forms of communication (Fig. 3).

The student's choice of lectures with written chat was due to the time of the lesson; this form was chosen by employed students or students attending evening classes. Speaking about the reasons for their choice, they noted that such lectures on humanities can be compared to podcasts and are convenient to listen to on the road.

As for the written word, the relevance to the final examinations should be noted; this format is convenient for the revision of oral lectures and was in demand when taking tests and preparing for oral exams.

Video recording of lectures is the most unpopular form of classes; they were only demanded by employed students who did not have time for lectures in real-time.

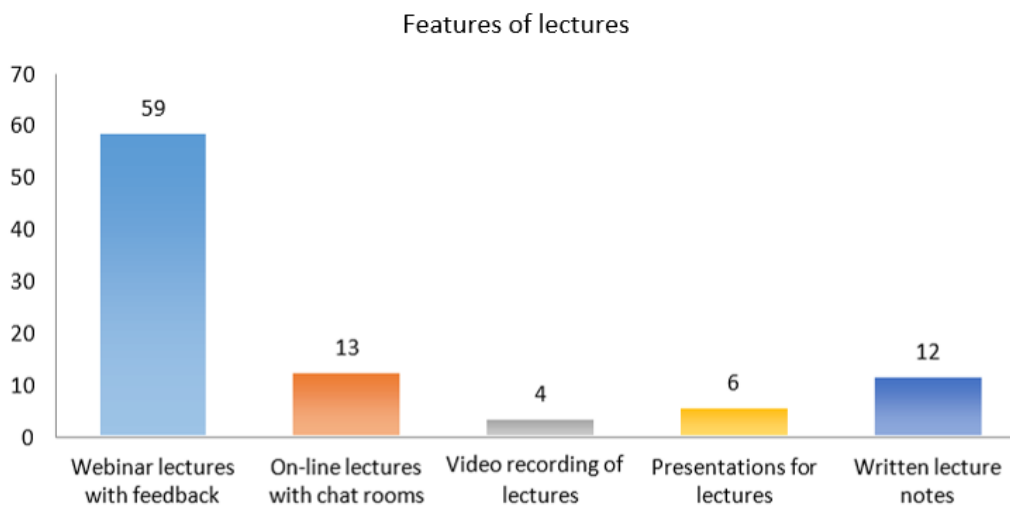


Figure 3. Assessment of Special Conditions for Conducting Lectures.

The question of the form of lectures has not yet been fully analyzed by us; in the future, we plan to expand the range of criteria for the effectiveness and popularity of lectures for a deeper analysis. For example, it is of interest to analyze the video sequence in lectures, composition, and time. It will be important to analyze the content and preferences in terms of the humanities and the exact sciences.

During the study, students noted that in a number of exact science lectures, they lacked the

functionality of the available programs for feedback. Since it was impossible and inconvenient to make calculations orally, they needed not only the format of their screen demonstration but also the format of an instant written response on the general screen.

In addition to lectures, we analyzed practical skills-building classes. The analysis of the effectiveness of practical training gave us the following results.

First, in the structure of the distance learning

course, practical training was the least preferred form of class.

We observe a rapid drop in students' interest, namely, from 51% to 30%, and if we exclude the final assessment in the form of tests, then the drop is from 50% to 16%. Undoubtedly, such a

loss of "popularity" in practical classes when transferring to a distance format requires a deeper and broader understanding (Fig. 4).

Let us consider the popularity ratings of on-line classes in terms of specific types of classes among students.

Students' preferences in terms of practical training

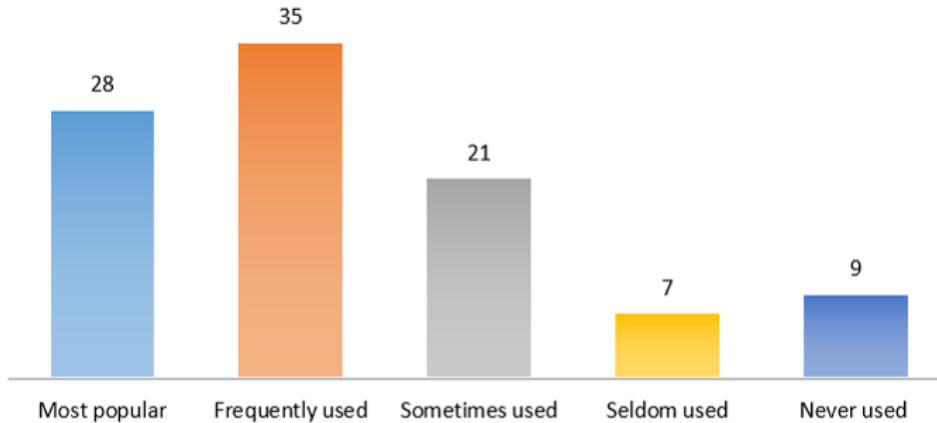


Figure 4. Students' Preferences in Terms of Practical Training and Forms of Webinars.

Practical classes in the format of webinars (video conferences) were used most often and

were quite popular with students (Fig. 5).

Student preferences of home tasks

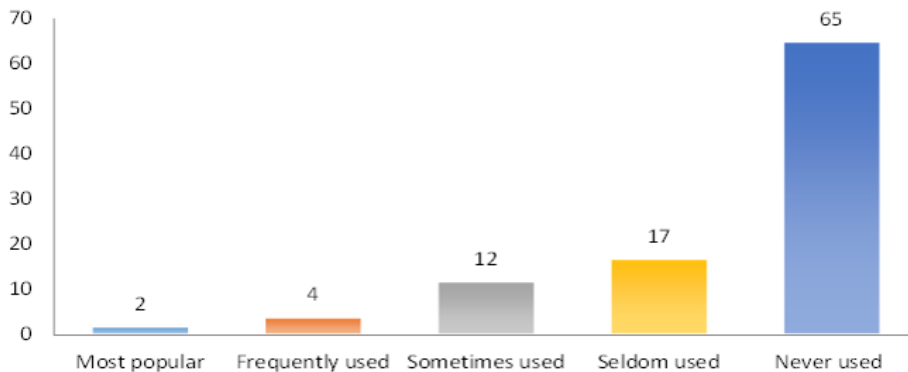


Figure 5. Student Preferences of Home Tasks.

Practical exercises in the form of homework were the most unpopular. According to the survey, there is a direct relationship between the use of this form of teaching and the requirements of

the teacher. But the result of the free choice of students is shown in the diagram. We should add that homework has never been popular (Fig. 6).

## Student preferences of tests

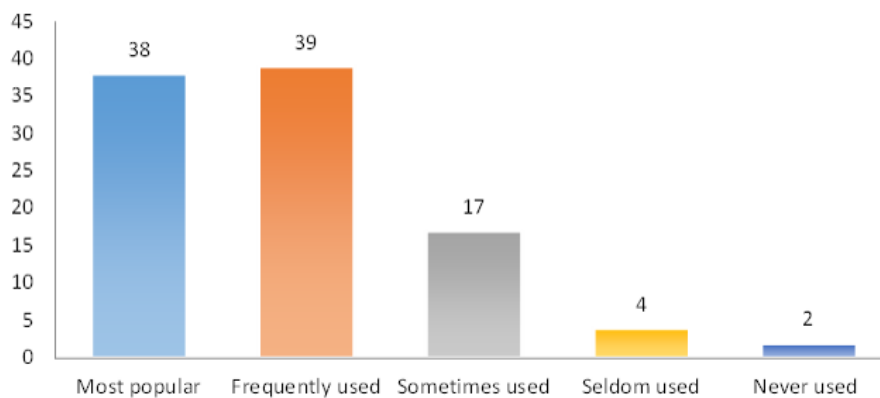


Figure 6. Student Preferences of Practical Training in the form of Test.

Practical classes in the form of tests gained particular popularity during the period of distance learning and proved to be one of the most frequently used forms of testing students' knowledge and skills. At the same time, it is considered the biggest disappointment from the point of view of teachers.

The problem is that the keys to the tests instantly appear on the Internet, and the teachers do not have a real picture of students' residual knowledge. It is not possible and reasonable to resolve the issue by constantly changing the bank of questions.

In our opinion, the effectiveness of training can be increased by combining tests with project activity. We are planning a particular study on the forms of control for a more detailed study of this problem because it is the unconventional and creative approach to practical classes and forms of control that are the key to building and maintaining the educational hierarchy of relationships and to establishing a reputation of the teacher and university.

Furthermore, we also want to note that the analysis of the impact of the teacher's personality on the effectiveness of distance learning was of particular interest to us. Over the past decades, there has been a heated debate in the academic community on this very topic.

The transition to distance learning is even called "tendencies of dehumanization of the educational system". In this article, we would also like to present the results of the analysis regarding the influence of the personality of a teacher on the effectiveness of training, which relates to Question 4.

To successfully work in a digital environment, a teacher needs to develop the concept of a course, write a script, create a visualization model, knowledge management and communication model, select control tools, etc. Is it possible for one person to perform all these functions? And should all the mentioned skills be characteristic of a modern teacher?

It is no coincidence that in online universities, where the production of online courses is on stream, the roles of a producer, director, account manager, methodologist, graphic designer, quality control specialist, and expert are distributed among different people. But in a real ("traditional") university, should one person, a teacher, fulfil all these roles? (Alekseeva & Alekseev, 2021).

As for the positive emotions from distance learning, they correlate with students' full-time employment, being far from the place of study and with work in a different sphere not related to the course taken at University (Fig. 7).

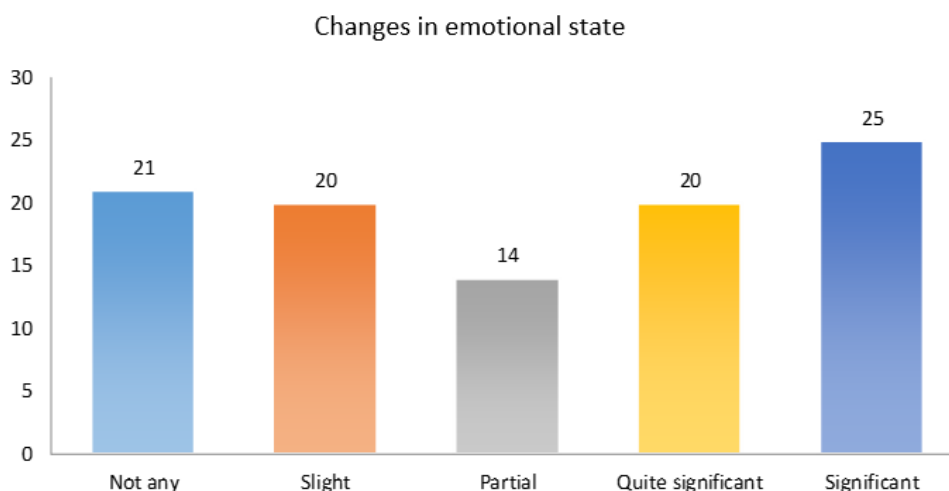


Figure 7. Changes in the Emotional Sphere of Students During the Year of Isolation.

What are the students' expectations from distance learning in terms of introducing some elements of distance learning on a continuing basis? (Fig. 8)

Regardless of students' employment in full-time jobs regardless of the form of education, we received a reliable and clear answer in terms of students' expectations regarding the forms of classes that they would like to introduce into the educational process on an ongoing basis. They are as follows: 30% of the respondents would like to have lectures which are convenient to listen to in a car, on public transport, or at home at

any time. 63% of the students surveyed wished to retain the forms of control and academic performance assessment in a distance format, but 100% of the teachers interviewed are against such an element in distance learning. As practice has shown, answers to tests are instantly becoming available to students due to the Internet, which is a significant problem for international students with a low level of language proficiency. The distance learning statistics of these students are excellent, but their speaking skills have deteriorated significantly over the year.

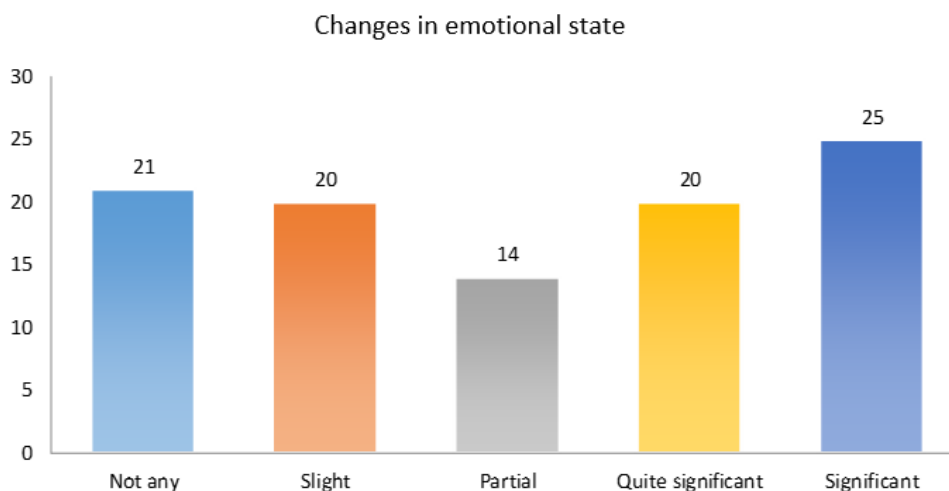


Figure 8. Students' Expectations Regarding Distance Learning Elements.

There is an interesting assessment by students of the personality of a teacher and expectations

from a teacher before the isolation (Fig. 9, Fig. 10).

## The influence of the teacher's personality on motivation to study

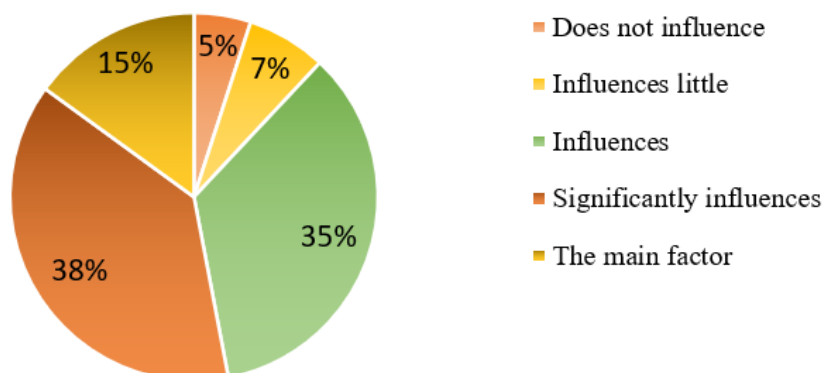


Figure 9. Human Factors and Motivation to Involve in Educational Process before Isolation.

According to the results of the study, before the lockdown, a teacher was able to act as a learning motivator very successfully. 88% of the respondents pointed out the influence of the

teacher's personality on the educational process. It should be noted that this can be both positive and negative motivation.

## The influence of teacher's personality on the learning motivation

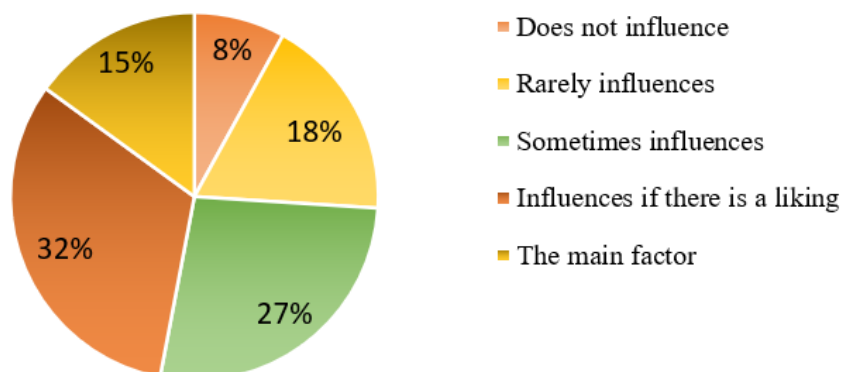


Figure 10. Human Factors and Motivation to Involve in Distance Educational Process During Isolation.

An expert survey of teachers showed that in the process of distance learning, the problem of maintaining extrinsic motivation was the primary and most obvious one. Experience shows that it is not always possible to increase motivation through the use of gaming technologies. Obviously, these methods are extremely standardized and formalized. Effective cognitive motivation is always personalized and contextual (Ableev & Kuzminskaya, 2021).

The findings obtained from data analyses should be presented in line with the aims of the study. Tables and figures can be used to display the results of the analyses. The findings section should deal only with presenting the results and should not include a discussion of the findings. Subheadings in line with the sub-goals of the study can be used. Sub-headings should be flush left, in italics and with each word capitalized.

## Discussion

Online learning practices are our reality and undoubtedly a long-term educational trend. The communicative component of teaching and learning is being transformed, which makes it necessary to include in the structure of all courses a liberal arts curriculum, which forms knowledge about the peculiarities of thinking of a modern person, develops skills for constant change, fosters the ability to learn and resist stress.

Accordingly, this study will help to draw conclusions about what is new and interesting for us regarding the possibility of distance learning and what new horizons are opening up for humanity in the future, but at the same time, the article analyzes the problems faced by both students and teachers in the learning process. These problems reduce the quality of education, make it less effective, and thereby contribute to the formation of poor specialists in the labor market. In order to avoid similar situations in the future, it is necessary today to learn how to work qualitatively in this direction, to find the most competent and effective methods and techniques that will help in the distance format not to worsen the level of training, which is directly related to both good communication and the ability to maintain the level of motivation, as well as good quality Internet connections, and, at least, to keep it in a certain direction.

## Conclusion

The features of the study are that, for the first time, an attempt is being made to comprehend the unique experience of distance learning that humanity has received in self-isolation. For the first time in the learning process, I had to abandon live communication with the teacher and abandon communication in the usual format within the audience. Some new methods and techniques that were hastily developed and introduced into the new education system were successful, found their audience and helped to continue the educational process in new conditions, contributing to the further education of students. Some methods and techniques in digital format were not successful, rather negatively affected the organization of the educational process, did not contribute to the effectiveness of the acquisi-

tion of knowledge by students, but rather, on the contrary, destroyed the process of understanding by students, reduced the level of motivation.

After analyzing the trends and carrying out our own study of the effectiveness of different forms of training, we have come to the following conclusions:

- Of all forms of distance learning, students' preferences are on the side of the fastest forms or the most emotionally coloured ones, such as webinars with feedback (videoconferences).
- Distance learning has seriously affected the psychological state of students and significantly reduced their motivation to learn. The important factor of motivation in the process of traditional learning was the personality of the teacher. The transition to online practices has significantly transformed the role of a teacher, which, undoubtedly, has caused a decrease in students' enthusiasm concerning education. The reduction of control on the part of a teacher also has resulted in the fact that students are more difficult to concentrate and more difficult to immerse themselves in the learning process.
- The researchers have come to the conclusion that the activity of students can only be motivated by changing the teaching methods when dealing with the digital format by completely reconsidering the approaches to the learning process. It is necessary to develop creative tasks, cases, projects and guidelines for teachers on their implementation in the educational process since it is such tasks that can breathe life into distance learning;
- Further digitalization is a long-term trend that requires the use of different communicative technologies and communicative skills. Accordingly, additional research on the forms of distance learning, especially practical ones, and expansion of their forms are necessary.

What is new in the article is undoubtedly an attempt to comprehend such a unique phenomenon as distance learning to analyze the success/failure of any methodological findings. The authors of the study understand that within the framework of this article, it was possible to cover not all the problems but only a small part. Accordingly, further studies are planned, which are aimed at analyzing the problems associated with the analysis of the level of motivation of stu-

dents, assessing the quality of control in distance learning and, related to this, analyzing the level of student performance during the study period during the pandemic.

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