The Influence of COVID-19 Pandemic on the University Education

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Abstract: Since the beginning of the pandemic, significant changes have been made in the sphere of education, where millions of students at universities around the world in order to keep up with the system's measures taken by the government. Universities have adapted educational activities, a new practice applied in university education - distance learning on a global scale has become the basis for the hypothesis that university education will no longer be identical to the previous model. The paper presents empirical data to support the hypothesis. The qualitative method of the research is based on materials from various sources, including scientific articles, statistical data, grey literature. For collection of the primary data, a survey was conducted by preparing a short questionnaire, which was formatted to collect information reflecting students' views about the influence of COVID-19 pandemic on the university education. The quantitative method of the research results of the questionnaire survey made it possible to formulate a logical conclusion that confirmed the general hypothesis proposed in the study. The research may be of interest to teaching staff and university administrators for providing better quality of education, taking into account the views of students. Also, the paper can receive further academic research in order to develop deeper knowledge about university education, not only during the pandemic.

1 INTRODUCTION

The transition to online learning also took place before the pandemic. Most universities have already offered distance learning in one form or another. The complete or partial cessation of the physical presence of students and professors in university buildings in the global pandemic period, the transition to distance learning led to a global reformation of universities around the world. Despite the already available previous research on online teaching and learning, the willingness of students to participate in online learning in real time, also implemented on a global scale since the outbreak of coronavirus in a remote form, etc., the topic of university education, online or mixed online and offline forms of education tend to be studied further, which has become the basis for the hypothesis that university education will no longer be identical to the previous model.

2 MATERIALS AND METHODS

2.1 Field of Study

The serious risks of social isolation suddenly became relevant to wider sections of the population, as the world was forced into quarantine. The most important public health measure - social distancing - a phrase that most people had never heard or used until recently, quickly broke many of the bonds that bind people (Holt-Lunstad, 2015). The COVID-19 pandemic has changed the world, creating a need for new actions by society, including universities and academics (Alvarez-Risco, 2021).

The transition to online education also took place before the pandemic. Teaching technologies allowed both «synchronous learning» which takes place in real-time mode, and «asynchronous learning», where contact between the student and the teacher is delayed in time: when teachers prepare tasks or record lectures and students can fulfil them at their own pace. The global COVID-19 pandemic has demanded a lot from universities: from transforming classrooms

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into an online learning environment, to changing the cognitive architecture of teaching and learning, which are currently radically changing integrity, encouraging reflection on the importance of emotional state and its impact on learning and memory. In recent years, there has been a growing interest in the role of emotions in the academic environment, especially in the question: how emotions affect student`s engagement into the educational process (Linnenbrink-Garcia and Pekrunb, 2011).

Open access technologies and policies to peer-reviewed scientific journals and conference proceedings have made it possible to collect material, to summarize, to conduct an empirical study of the problem of the emotional component of the influence of COVID-19 pandemic on the university education, its impact on student learning during distance learning in order to study the consequences of the spread of the coronavirus and new strains of COVID-19. The use of the quantitative method in the second part of the research has led to a logical conclusion about the attitude of students towards the transition of universities to online and offline methods of study during the pandemic.

Two recent trends in digital transformation in education during the COVID-19 pandemic are the expansion of distance education and the growth of innovations in educational technologies. These trends, reinforced by educational needs during the pandemic, are discussed in the article "How the COVID-19 pandemic is reshaping the education service" (Kang, 2021).

In the study "Transition to online learning during the COVID-19 pandemic", it is concluded on the increased stress of students, difficulties with concentration of attention.... etc. suggested that barriers to full online learning are not only technological and learning problems, but also social and emotional problems of isolation and social distance. A national survey conducted in February 2021 by the Wexner Medical Center at Ohio State University (Murez, 2021), concluded that the long-term effects of the pandemic on the older Gen Z was found.

While the Baby Boomers, Gen X and even Gen Y can accept the feelings of distance, isolation and loneliness with the words "this too will pass, sooner or later", then the older representatives of Gen Z, graduate and postgraduate students, are more sensitive to the self-isolation and lockdown caused by new strains of coronavirus. In the absence of previous experience, even routine events are more demanding on emotional, cognitive, and behavioral processes.

Teachers and students spent extra energy trying to understand and cope with the new situation. Many new aspects with which facing education as a rule, were unexpected or even surprising. Surprise evokes strong involvement and behavioral readiness, that is, a feeling of willingness to act. However, in the context of COVID-19, knowing which goal to approach or what actions to take is quite a challenge. Emotions caused by changes in reality, forced to change to a different, unfamiliar form of education, the impossibility of physical presence in university, lectures and practical activities, "live" communication with fellow students and teachers, etc., which made a significant impact on the cognitive processes of students, including perception, attention, learning, memory, reasoning and problem solving, motivating other actions and behavior of teachers for students` education (Tyng, 2017).

Taking into account the emotional component during the pandemic, the issue of optimizing educational process for reducing cognitive load became especially acute. It is clear that the pandemic has already had a serious impact on students' education. The instability of the situation, the appearance of new strains will continue to influence the interaction of students and teachers, learning and the system of evaluation in online mode. It has become essential to remove the clutter of learning, simplify content and communication strategies. Due to different information processing abilities, there is a possibility that combinations of teaching methods can lead to cognitive overload, affecting the ability to absorb new information in sufficient volume. If students are unsure of the technology they are using, or do not feel cognitively engaged and socially connected, the result may negatively affect their learning outcomes (Bower, 2019).

The application of cognitive theories in education process supports students' online, distance learning and mixed forms of education. By interpreting "the intellectual resource as a compromise between advantages such as increased speed, quantity, or conceptual clarity of knowledge, and costs such as time, effort, or cognitive resources expended on the tasks. Mental resources are influenced by three main criteria: discipline of application, measurement of design, and individual differences between students" (Hoffman, 2012). Based on this, teachers during the pandemic have limited the number of tasks; have shown flexibility in cases when students have asked for an extension of time for completing the task; have integrated and centralized sources of information for students using the "Course Glossary"; provided multimodal explanations. In the work on complex

concepts, some elements were first explained, including with basic terminology. Virtual coaching among the students of the course provided students with a summary of the previous topics of the classes, in accordance with the previously made changes in the programs. In the created groups in WhatsApp or Skype, teachers helped students better understand the course contents, by sending the links. Emergent transition to online educatiob also required a certain degree of self-regulation skills, in which students have to manage their learning process (at least more than in face-to-face training). Students should remember or teaching staff should remind them of their ability to achieve success (self-efficacy). The use of metacognitive conversations, according to A. Patricia Aguilera-Hermida, helped both professors and students to control the learning process and take part in what is happening - "this is not an assessment of the course; this is a strategy for developing self-regulation skills," the author notes (Aguilera-Hermida, 2020).

The COVID-19 pandemic has opened up the opportunities for online learning with a completely new look for both: teachers and students. Online education required teachers to move from the old learning paradigm to new learning methods, with that use of technologies (Nesmeyanov & Petrova, 2019).

Emotional experiences are ubiquitous in nature, important and perhaps even critical in the educational environment, since emotions modulate all aspects of the cognition. The influence of emotions on learning and memory is not always unambiguous; they can both enhance and worsen memorization, learning and memory. The analysis of teaching and learning experience based on indicators such as: - student learning experience, - student performance; - the observations of educators, reviewed in the article "An effective blended online teaching and learning strategy during the COVID-19 pandemic, identified the positive impact of the combined online teaching and learning strategy during the COVID-19 pandemic as an opportunity for students to develop at their own pace, watching video lectures at a convenient time This strategy also helped organize the learning task and manage it through progress trackers and weekly guides (Lapitan, 2021).

2.2 Questionnaire Survey

This part of our research is based on a questionnaire survey conducted in 2021 among undergraduate and master's degree students of the Rostov State University of Economics (RSUE), with the aim of quantitative study of students' opinions on pandemic changes in university practice. Age of male and female students who took part in the survey were 18 to 22 years old youth. The questions were formulated taking into account that during the pandemic, the students had the opportunity to compare online and offline forms of education and have their own opinion on both forms.

2.3 Students' Selection

For the selection of students, one of the types of probabilistic sampling was used, which is the result of sampling from the combination, while the sampling procedure meets the general requirements for conducting research. It was not necessary to require a representative sample and to estimate the probability. The sampling criteria are based on the convenience of the questionnaire survey. The author realizes that such sample cannot be generalized scientifically because the properties of such sample do not reflect the information, but the questionnaire was conducted to confirm and / or refute the conclusions of the empirical study, for achieving the goal of the study - students' opinions on pandemic changes in the university education model.

2.4 Data Collection

For the purpose of conducting the survey, the students got a link on the website https://www.survio.com, the platform on which the questionnaire was posted. Despite the high level of English, each question and answer is written in native language, taking into account the specialization of the university. Students who agreed to take part in the survey completed online questionnaire. Of those who received a link and an invitation to participate in the survey, more than 70%, namely 104 respondents accepted. This is a good indicator of student activity, and a sufficient amount to work with the hypothesis put forward in the research.

2.5 Categorization of Responses and Percentage Content - Analysis

For a better understanding of the collected data, the percentage method was used in the analysis (part of 100%) according to the formula $P = A1 / A2 * 100\%$., where $A2$ is a constant value – the number of respondents who took part in the survey and answered all questions – 104 students. $A1$ has a variable value, which depends on one option, chosen by the respondents` answers to the questions. Graphs were based on respondents` answers.
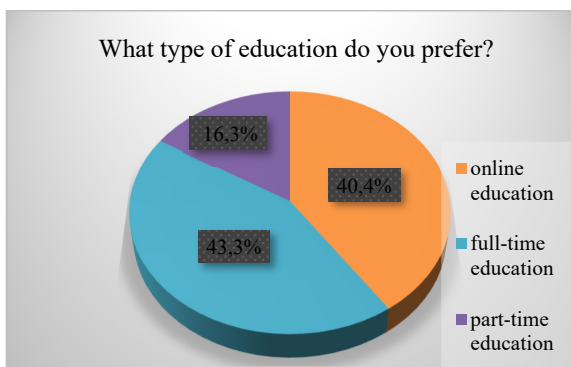
Figure 1: Reflects the answers of the respondents to the question: What type of education do you prefer?

University students and staff had to make significant adjustments. They had to learn how to use online learning tools and programs such as Moodle, Blackboard, Brightspace, Google Education, Zoom, Adobe Connect, etc., but they also had to adapt to new methods of interaction, virtual learning and communication between students and teaching staff. Among the surveyed students who previously studied in traditional (full-time, part-time) forms of education, 40.4% preferred online distance learning. Although more than half of the respondents who took part in the survey remained adherents to traditional forms of education: 43.3% for full-time and 16.3% for part time education. The choice of distance learning is one of the signals that online education has great potential for growth, even after the pandemic.
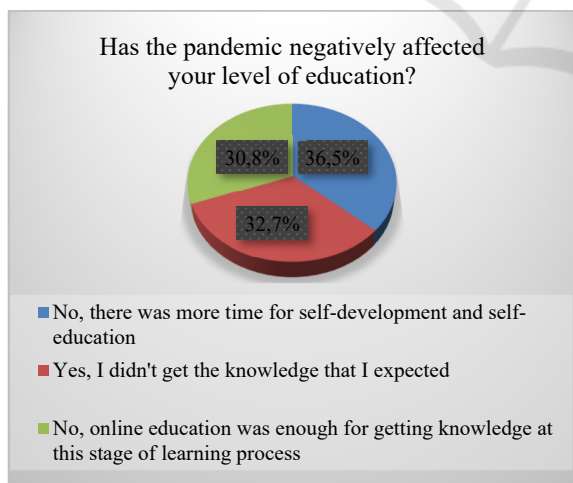

Figure 2: Reflects the answers of the respondents to the question: Has the pandemic negatively affected your level?

The responses to the question were distributed almost evenly over 1/3, with a slight variation. For example, during distance learning, students saw certain

advantages in online learning (increased accessibility, flexibility, virtual collaboration). 36.5%, noted the availability of free time, which was spent on self-education and self-development. The answer that the amount of knowledge was not enough during online learning, although less than a third of students - 32.7 %, but this fact shows that: the ongoing COVID-19 pandemic raised problems, misunderstanding and gap of knowledge in the educational process, what leads to further improvements in teaching strategies.
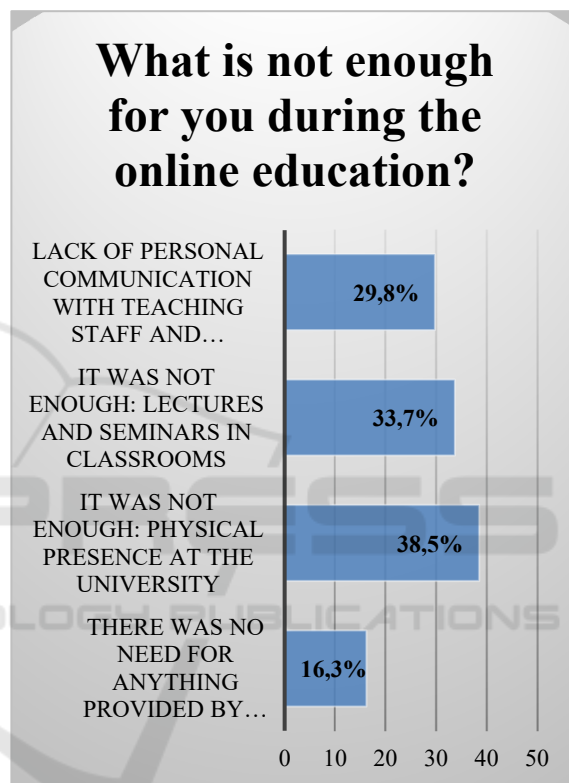

Figure 3: Reflects the answers of the respondents to the question: What is not enough for you during the online education?

This question has a general direction in order to study the opinion of students on the general question of what is insufficient for them during distance learning. The answers of the respondents showed that 16.3% of the respondents did not need anything from the traditional forms of education. At the same time, 83.4% of students were not enough: physical presence at the university - 38.5%; lectures and seminars in classrooms - 33.7%; lack of personal communication with teachers and groupmates - noted by 29.8% of the total number of respondents.

3 RESULTS

As virtual communication is not a substitute for real, genuine human contacts, as distance learning cannot be a complete substitute for traditional learning. Whether the " social distancing" enters the "collective mind" will depend to a large extent on the timing of the pandemic. If the threat persists, or repeats itself due to new strains of coronavirus, social distancing will remain in the center of human thinking. If the threat is removed (by collective immunity, vaccination etc.), social distancing will become less relevant and may disappear from public consciousness. This transformative moment for higher education has become a crisis for those students who are not ready to switch efforts and be flexible. The question of whether the traditional form of university education will return, given the number of students who have adopted distance learning, with its pros and cons, tends to be for further academic research.

In general, universities are coping with the need for changes associated with the pandemic situation, including those caused by new strains, without harming the well-being of students. Despite the new formats of teaching and assessing knowledge, universities provide the level of knowledge that students expected to learn upon entry, as confirmed by the questionnaire survey.

The teaching staff is not able to replace the missing students' need for: physical presence at the university, lectures and seminars in classrooms and lobbies, as well as personal communication with teachers and groupmates, despite the technologies used in teaching as: Moodle, Blackboard programs, Brightspace, Google Education, Zoom, Adobe Connect, etc., groups created in WhatsApp and / or Skype for communication. The transition to online, or a mixed offline and online form of education is a challenge and a tool for improving and promoting the educational process. The intensive introduction of information technologies in the educational process has become a priority task of modern educational institutions all over the world. Studies of the computer aspect of education, the attributes of the effectiveness of distance learning make it possible to analyze the phenomenon of distance education itself, compare and generalize the results, compare the conclusions with conceptual approaches to the learning process, which is more likely to no longer be identical to the previous model.

4 CONCLUSIONS

Although the results of the study do not represent a generalized preference for or against online distance learning, they confirm that there is no one-size-fits-all approach to the preferred mode of learning. But, the observed start of the COVID-19 pandemic is a significant surge in the use of: language applications, virtual learning, video conferencing tools, online learning software, the entire integration of information technology makes it clear that distance or online education will eventually become an integral component of universities` education. The article may be of interest to teaching staff and university administrators for providing better quality of education, taking into account the views of students.

The paper can be useful in developing effective education programs, that provide positive learning environment for both, traditional learning and distance learning, through educational online technologies.

Perhaps researching the pandemic changes, in university education, and students` attitude towards these changes, could spare decades of research on strategies that do not meet students' expectations. The author expresses the hope that the work will have further research to develop knowledge as emotional, behavioural, cognitive components caused by the influence of COVID-19 pandemic on the university education, and changes in comprehention of information and communication through technologies that, even before the pandemic, affected teaching, learning and research in traditional and distance education process.

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