DISTANCE LEARNING DURING PANDEMIC: ITS ESSENCE, ADVANTAGES, AND DISADVANTAGES IN THE EDUCATIONAL PROCESS

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Abstract: This article aims to analyze the nature, advantages, and disadvantages of online education for educational institutions, students, and teachers. Studies on the subject of distance learning and students' experience in the preparation process in the context of the COVID-19 pandemic are the basis of this study. A large-scale and accelerated transition to distance learning can be seen as a problem and an opportunity. Online education can be a helpful addition to the educational process after the pandemic. Still, it is not yet possible to replace the traditional education system in the light of many barriers and difficulties to convey the material to students without losing the quality of education.

Keywords: Consequences of distance learning, Distance learning, Emergency transition, Online education, Pandemic, Student experience.

1 Introduction

The global pandemic COVID-19 and the restrictive response measures introduced in connection with the spread of coronavirus infection have significantly changed the usual processes [22]. As a result, governments worldwide have decided to close educational institutions in an effort to contain the global COVID-19 pandemic. In this regard, distance education has become the main type of education in the whole world [23].

What is *distance education*? Distance education is understood as a complex of educational services provided to the general population in the country and abroad using a piece of specialized information and educational environment based on the means of exchanging educational information at a distance (satellite television, radio, computer communications, etc.) [1, 3]

Distance education is developing very actively in many countries of the world, but it is a relatively new type of education for some countries. Given the widespread demand among the population, especially among young people, vocational training and programs of a general educational nature also went online. COVID-19 has become a catalyst for educational institutions worldwide to find innovative solutions in a relatively short time [2]. The education system around the world was forced to adapt to new conditions and underwent significant changes during the general quarantine.

The pandemic has transformed a centuries-old model of chalk teaching into a technology-driven model. This transformation in education is pushing policymakers to figure out how to foster engagement at scale while providing comprehensive e-learning solutions and bridging the digital divide. [6]

2 Literature Review

The urgent transition to distance learning formats in the context of the COVID-19 pandemic has become a difficult task for the higher education system. Most of the students had no previous distance learning experience. Research conducted during the COVID-19 pandemic shows that students faced a range of challenges [8, 10, 11]. First of all, they note the problems caused by the poor quality of the Internet connection and the lack of the necessary technical devices. Studying remotely, students began

to interact less with classmates and teachers and more often felt a sense of loneliness [13]. Many students in self-isolation have problems with self-organization. The transition to distance learning has affected the mental health of students.

The forced shift to distance learning during the COVID-19 pandemic has a number of long-term implications. For example, some students postpone their graduation from universities and enter the labor market because they cannot complete their courses on time [2]. Almost a third of students fear that they will receive lower wages.

The most vulnerable group are students of applied fields of study [15]. Despite the development of technologies, the transition to distance learning formats has become a difficult task for universities that train specialists in the field of engineering, medicine, and art [1]. In view of the practical orientation of these areas of training, the learning process largely depends on the material and technical base of the university or partner enterprise [2]. During the COVID-19 pandemic, access to the infrastructure of the university and enterprises was limited or excluded. Most educational programs of an applied nature cannot be implemented remotely or online. Researchers emphasize the importance of face-to-face contact between students of applied training areas with teachers; in a distance format, such contact is very limited. The format of the classes has changed and the way of passing the final exams [18]. Art students noted that the online format does not allow getting an adequate idea of the quality of their work, music students are unable to evaluate and control the sound and for medical students, the impossibility of practical certification can negatively affect future employment in the profession.

Many researchers believe that educational practices that have developed during the pandemic cannot be called high-quality online learning. The new phenomenon is called Emergency Remote Teaching and Learning or Emergency Remote Teaching (ERT) [11]. ERT is not a full-fledged equivalent of either full-time or distance education. Suppose the purpose of online learning is recreating a full-fledged educational environment. In that case, ERT is a temporary transition to an alternative teaching format in connection with an emergency [11]. The authors of the studies cited agree that in the absence of a coherent theoretical framework for describing emergency remote teaching, the narrative of the participants comes to the fore, and the main tasks are to analyze the situation and develop recommendations for the future [3, 11].

In the new environment, every teacher must be able to work online. This means that you need to quickly learn how to work in a digital environment, which in turn leads to an upgrade of educational technologies.

Even before the end of the distance learning period, there were many studies of the educational experience of students during the COVID-19 pandemic in the spring of 2020, conducted in different countries of the world [2, 7, 13]. They analyze the organization of the educational process, as well as the difficulties faced by students. The presented studies are descriptive in nature since the changes that have taken place in education are so radical that they do not fit into the existing theoretical models.

3 Materials and Methods

The conducted surveys allow us to judge the emotional state of students and the subjectively perceived effectiveness of training. Thus, no more than a third of students evaluate the experience gained positively, half of the respondents have mixed feelings, and one in five calls their experiences negative [20, 22, 23]. A study of Swiss students showed that social ties between them weakened over the course of distance learning: students began to feel more lonely [7]. Among the most significant difficulties, students named the lack of communication with classmates and

the lack of face-to-face discussions with teachers. The lack of habitual communication affected students' mental health: they more often noted symptoms of depression, stress, and anxiety [7]. Researchers say one of the possible reasons for the deterioration of students' mental health is the need for quick and independent adaptation to the new format of education [12]. Students had to study alone and independently organize the educational process; in these conditions, the insufficient level of self-regulation became evident in many of them [22, 23].

Significant difficulties arose with the technical equipment. Students often had to master new instruments on their own [1]. Many of them did not have a suitable place or technical device for studying at home [1, 13]. Problems with the quality of the Internet connection were noted by students from different states [1, 5, 13, 14].

Foreign researchers note that the level of stress associated with the pandemic was much higher among medical students than among other population groups. Clinical practice makes up a significant part of the training of future doctors; the most important exams are also taken in clinics. The inability to visit hospitals has called into question both the practical training of students and their official certification, which can negatively affect employment prospects [4, 5, 17]. Despite the introduction of distance learning elements in recent years, the medical education system was not ready for an emergency transition to a distance learning format [17]. The patient screening was replaced by clinical data processing. Teachers recommended that students practice practical skills with relatives and friends, sometimes computer simulations were used, but the researchers noted the inadequacy of these tools as a substitute for the experience of working with real patients. Many practicing teachers found themselves overloaded with work in hospitals, so they could not pay due attention to the organization of distance learning for students [20]. The teachers of the medical university, based on the results of their work in the distance mode, concluded that the schedule of full-time classes is an important motivating and organizational factor for students, and the transition to communication through messengers often forces teachers to adjust to the schedule of students, creating problems for them in planning work activities [17].

The only real opportunity for medical students to gain hands-on experience was volunteering in COVID-19 wards, which does not provide knowledge and skills outside of a specific specialization [6]. The closure of dormitories and the need for nonresidents to go home also limited access to clinical practice [18]. To solve the problem of a shortage of medical personnel and avoid the difficulties of organizing distance learning, in many medical schools in the US and UK, graduation was carried out two months ahead of schedule [9, 19]. At the same time, many graduates felt uncertain about their readiness for practical work [4, 5].

Students of music and art trends faced, in addition to general, specific difficulties associated with the peculiarities of their training. Singing or playing musical instruments at home caused inconvenience to the rest of the residents and generated conflicts. The quality of the Internet connection was critical for the musicians since the interference in the sound broadcast made classes impossible [21]. Practical work is often possible only on studio or industrial equipment for artists and designers, so graduate students could not complete their projects at home. The defense of diploma projects usually takes place in the presence of potential employers, and graduates had every reason to doubt that online presentations would allow interested persons to make an adequate conclusion about the quality and characteristics of their work.

4 Results and Discussion

In sociological discourse, the deconstruction of educational practices can be defined as the refusal of participants in the educational process from stereotypical practices, their destruction within the framework of a new context of social

reality, during the forced transition to distance education [24]. Accustomed and clichéd social actions and interactions, social connections and relationships, social activities and practices performed by students and teachers in the traditional form of education become irrelevant and not in demand in the context of distance education. Under the new conditions, the existing order is being "reassembled." In the concept of Derrida, this is the "overturning" of the value series, the revision and rethinking of generally accepted truths, the ambiguity of their interpretation, and inconsistency [20].

The analysis of the studied literature allowed us to define distance education as the interaction of students and teachers in the learning process using interactive technologies while retaining all the components inherent in the educational process (educational content, teaching aids, goals, organizational forms, methods) that provide interactivity [1, 2, 3, 6, 9, 19].

The complete transition of higher education to a distance form of work has shown that the previous educational practices of students and teachers are not fully justified [7]. One of the most relevant educational practices that require change, according to students, is communication with teachers. More than half of the respondents expressed their opinion regarding the insufficient level of communication between teachers and students in the context of distance education as compared to offline learning. The analysis of the frames made it possible to record the impossibility of mastering the disciplines in full, despite the large number of assignments given by the teachers and lecturing online [16]. Unsuccessful educational practices in the transition to distance learning, according to students, are practical training (due to the closure of many organizations and enterprises) and laboratory work and experiments at home (lack of the necessary equipment at home to complete tasks, etc.). This actualizes the problem of maintaining constant contact in the actions of teachers and students, which is especially important in teaching technical disciplines.

Distance education has its pros and cons. However, digital education from home has some benefits for everyone involved in the learning process.

1. In a pandemic, first of all, it is to reduce the risk of morbidity and protect the health of students and teachers. In educational institutions, students sit in classrooms and are in frequent contact with each other; one infected student can transmit the virus to an entire group. This is the main reason why governments decide to close schools.

2. Distance education ensures the continuity of the educational process. In universities, it is often asynchronous, meaning that everyone can study at any time and place. In addition, students and teachers do not waste time and money commuting to school every day. This allows you to have more free time and devote time to other activities, such as hobbies or household chores.

3. E-learning requires 40-60% less time than traditional classrooms and classrooms because students can learn at their own pace [15], going back and re-reading, skipping, or speeding up concepts as they see fit. It is important to note that saving time does not compromise the quality of learning and even reinforces it.

4. Distance education requires more independent learning from students, which positively affects personal development. Students study carefully selected material in a relaxed atmosphere. When a person searches for material on his own and prepares without the accompaniment of a teacher, he assimilates the material better.

Distance learning statistics show that distance education can help us tackle the pressing challenges of global climate change. Students are not in classrooms during class, which results in reduced utility bills. Online study results in fewer students traveling to campus, which translates into less carbon dioxide emissions into the environment. Despite the pros, distance education has some downsides:

1. The success of distance education primarily depends on access to the Internet. Some students without technology and reliable internet access find it challenging to participate in digital learning [10, 11]; this gap is observed between countries and between income levels within countries. Students who are unable to participate in online lessons lag behind their peers, leading to inequalities in learning. However, some schools and governments provide digital equipment to students in need.

2. Another serious disadvantage is social isolation. Educational institutions are centers of social activity and human interaction. When they close, many children and young people are deprived of the social contacts they need for learning and development. Not meeting and socializing with friends can lead to stress and depression, especially in children and adolescents.

3. Online learning does not match the needs of practical subjects. For example, physical education classes cannot be carried out without the necessary equipment. In universities, medical students cannot acquire full-fledged skills if they do not practice their own knowledge. The same applies to other specialties such as chemistry, physics, applied arts.

4. Homeschooling can lead to a lack of concentration and motivation among students due to lack of supervision and school environment, which negatively affects academic performance. Primary school students are most affected by this, and online classes are the least effective in this category.

5. Lack of educational moments during classes (lessons), loss of warmth of live communication, when not only a word but also an encouraging gaze of the teacher is able to instill confidence in success and increase interest in the subject. It should be noted that the students have lost "a sense of fellowship," that is, the support of the team, approval, or indifference of the audience in relation to the student's activities during the lesson.

6. Parents have an important role to play in preventing this and supporting their children during online learning. However, not all parents can support their children in the same way.

The coronavirus pandemic came as an unpleasant surprise for the education system. In addition to numerous financial, technical, and other difficulties, a serious problem is the lack of methodological literature on distance education.

Looking into the future, it is unlikely that distance education will completely replace the traditional one. Distance education lacks the social interaction that is so necessary for a child's development. Before the COVID-19 pandemic, the use of digital technologies to train students of applied specialties in low-selectivity universities was minimized [20]. Practical skills training, as a rule, was carried out either in educational laboratories or in places of practice according to the principle "as in life." Distance learning systems at universities existed, but when teaching applied students in full-time departments, were not used or, in some cases, were used as an electronic repository of educational materials and for testing. These conclusions about the system of digital educational technologies in universities before the pandemic are consistent with the results obtained from interviews with teachers [1].

With the urgent transition to distance learning, the means of communication familiar to teachers – instant messengers, e-mail – began to be used. Later they were joined by teleconferencing systems, primarily Zoom and others while using only their basic function - live video broadcasting. The use of a web conference instead of a face-to-face lecture suggests a minimal restructuring of the lesson, and unlike other digital formats, however, even it was not available to all students. The reason is the lack of technical and informational provision of teachers. Similar results were obtained in other studies. Nevertheless, the interviews conducted suggest that, provided there is good communication, students are much more enthusiastic about synchronized classes than teachers for whom this form of training is uncomfortable.

In the collected material, the prevalence of summative assessment over formative is noticeable. Individual cases of using the latter invariably aroused students' approval and increased the teacher's authority in their eyes. On the other hand, many teachers experienced difficulties in planning and organizing students' independent work in conditions of self-isolation. For them, the complexity of the course is still synonymous with classroom load and not the amount of time a student needs to complete all the operations necessary for mastering him. Students need help in organizing their independent work because they are accustomed to external regulation of their activities, primarily through the schedule, and experience difficulties in self-organization [2].

Substitution of empirical data processing, accompanying documentation, and video demonstration of real processes does not solve the problem of professional skills formation. Among the applied areas of training presented in work, the programs in the field of medicine and art suffered the most from the transition to distance educational formats, while the engineering programs related to calculations and computer modeling suffered less. A direct consequence of the inability to form and practice practical skills was the exclusion of the relevant sections from the intermediate and final certification program, in some cases, the planned transfer of classes to the next semester.

Since the restrictive measures were extended, catching up for a lost time in the spring semester did not take place, and for graduates of 2020, it is no longer possible, it became necessary for new research in order to establish how, with the arrival of the next wave of the virus and quarantine measures, students' perception of the learning environment dictated by the pandemic has changed, and the efforts of universities to restructure the educational process.

The ideas of the research participants that the university, education, and their professional activities, which they have already begun to varying degrees, will return to their previous state after the pandemic without significant changes, and their desire for events to develop exactly according to this scenario is obviously run counter to current expert forecasts [12].

The actively debated opinion that a sharp increase in the share of telecommuting in education will become the new norm does not find a response among informants. On the contrary, students of applied areas of training and their teachers unanimously believe that the disciplines of the general cultural block can be transferred online, and practical skills can be realized only with face-to-face interaction. In our opinion, this position may be based on the lack of high-quality alternatives to full-time education in the digital educational technologies market, insufficient competence of participants in the educational process – both students, teachers, and administrators - in using existing solutions, as well as the professionalization of higher education, as a result whereby the disciplines aimed at the formation of a person and a citizen seem to be the least significant and, therefore, are considered as easily optimized. A more detailed analysis of the grounds for skepticism of applied students and their teachers in relation to distance learning is a promising area of research.

Judging by the results of the interviews, in all universities where informants study, with extremely rare exceptions that apparently do not go beyond the department or even the activities of individual teachers, we are not dealing with distance learning but with emergency remote teaching. Therefore, the assessments and comparisons expressed should not be attributed to distance learning itself. Universities have found more or less successful ways to complete the academic year, but these methods cannot provide full-fledged training for students of applied specialties. Obviously, the point here is the lack of a technical base or training of teachers and the lack of the necessary means for this in the arsenal of classical distance education. During the period of distance learning, applied disciplines were taught similarly to theoretical ones, without due regard to their specifics.

The conducted research has a number of methodological limitations, which at the same time represent promising directions for studying the problem. First, in the course of the interviews, insufficient attention was paid to the students' specific devices and means of communication [22]. Obtaining such information will make it possible to assess the differences in the organization of the educational process depending on the technical means available to the students. Secondly, the qualitative methodology used in the study made it possible only to describe the events of an emergency transition to a distance-learning format [23]. Finally, quantitative data are required for reliable conclusions, including "digital traces" of participants in the educational process.

However, the positives of online learning can improve academic performance. Many institutions have announced plans to retain and use Internet platforms to complement classroom activities partially [15]. The transition to distance learning is a requirement of today; it is a radical change in the format of lessons and classes; it is a change in the activities of students who must show maximum responsibility, independence, self-discipline, and willpower.

5 Conclusion

The educational process of a modern university, as a super-complex system that provides information and pedagogical interaction between a teacher and students, has an amazing ability to adapt to constantly changing conditions. The pandemic caused by the coronavirus infection has become a new challenge for the global education system and a test for the sustainable self-development of the educational process. COVID-19 triggered a rapid, massive transition to digital education – the process of organizing interaction between educators and learners moving from goal to result in a digital educational environment, the main means of which are digital technologies, digital tools, and digital traces as the results of educational and professional activities in a digital format.

If until 2020 the introduction of digital education was carried out at the level of innovative projects, in a recommendatory form, then after 2020, the use of digital educational platforms has become an integral part of the educational system.

Students do not find distance learning to be effective. The main problems of this format are the inaccessibility of laboratories and workshops, the impossibility of practicing practical skills, and the lack of direct contact with the teacher.

Perhaps, if properly incorporated into the ongoing distance education system, online learning can become a useful and permanent addition to traditional education in the long term. The transfer of the educational process to distance formats in a self-isolation regime has become a test for the entire education system, including higher education. At the same time, many specialties were unanimously recognized as the most affected due to the focus on the development of practical skills, close connection with the infrastructure of the educational organization, and the weak coverage of the curriculum with available digital solutions.

On the basis of the data obtained, the authors agree with the concept of education under quarantine in connection with the pandemic, which is actively discussed in the professional community, not as a remote one, but as an emergency remote, requiring remedial measures to compensate for lost time in training, as well as technical and methodological solutions of problems.

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