СОЦИАЛЬНАЯ ПСИХОЛОГИЯ, ПОЛИТИЧЕСКАЯ И ЭКОНОМИЧЕСКАЯ ПСИХОЛОГИЯ / SOCIAL PSYCHOLOGY, POLITICAL AND ECONOMIC PSYCHOLOGY

THE ISSUE OF DISTANCE LEARNING DURING PANDEMIC AS SEEN BY STUDENTS OF TECHNICAL UNIVERSITIES LOCATED IN MEGAPOLIS AND REGION – COMPARATIVE ANALYSIS

Research article

Trotsenko A.A.[1], *, Pryalukhina A.V.[2]
[1] ORCID : 0000-0002-4590-0550;
[2] ORCID : 0000-0003-1077-2242;
[1] Murmansk Arctic University, Murmansk, Russian Federation
[2] Emperor Alexander I St. Petersburg State Transport University, Saint-Petersburg, Russian Federation

* Corresponding author (trotcenko2007[at]yandex.ru)

Abstract

The current situation with the coronavirus epidemic has set new tasks for the teachers of technical universities related to the organization of the educational process. Higher technical education is undergoing the most significant changes: the transition to online, the adjustment of the academic calendar for the current year, the assessment of the readiness of universities for strategic planning, the lack of personal communication between the teacher and the student, etc. The purpose of this research is to identify key problems occurring in the course of remote online education in the institution of higher education, perform comparative analysis of attitude towards remote online education by students of higher education institutions located in megapolis (St. Petersburg) and the regional center (city of Murmansk). This study was aimed at identifying some groups of problems that arose during the implementation of distance learning training in a technical university, as well as the attitude of students studying in technical and engineering universities of the megalopolis (St. Petersburg) and the regional centre (Murmansk). In this research, students' answers to questions that were worded by authors and grouped by psychological and organizational criteria of distance learning have been analyzed using content analysis. The results of the current study have shown that distance learning has become popular and effective (saving time and working at one's own pace). However, a difference was found: the students of the megalopolis had more time to prepare for seminars and to communicate, for the students of a regional university - this indicator does not really matter. Distance learning did not have a significant impact on the range of interests of students of technical universities and their relationship with others. Many students expressed concern for the health of not only close relatives, friends, but also teachers. The key disadvantages of distance learning, according to students, are a lack of an eye-to-eye contact with teachers and classmates as well as technical problems. The results obtained provide an opportunity to make distance learning more professional based upon specific educational process requirements.

Keywords: distance learning, higher education, problems of crisis distance learning, students' attitude towards distance learning.

ПРОБЛЕМА ДИСТАНЦИОННОГО ОБУЧЕНИЯ ВО ВРЕМЯ ПАНДЕМИИ С ТОЧКИ ЗРЕНИЯ СТУДЕНТОВ ТЕХНИЧЕСКИХ ВУЗОВ, РАСПОЛОЖЕННЫХ В МЕГАПОЛИСЕ И РЕГИОНЕ – СРАВНИТЕЛЬНЫЙ АНАЛИЗ

Научная статья

Троценко А.А.[1], *, Прялухина А.В.[2]
[1] ORCID : 0000-0002-4590-0550;
[2] ORCID : 0000-0003-1077-2242;
[1] Мурманский арктический университет, Мурманск, Российская Федерация
[2] Санкт-Петербургский государственный университет путей сообщения имени императора Александра I, Санкт-Петербург, Российская Федерация

* Корреспондирующий автор (trotcenko2007[at]yandex.ru)

Аннотация

Сложившаяся ситуация с эпидемией коронавируса поставила перед преподавателями технических вузов новые задачи, связанные с организацией учебного процесса. Высшее техническое образование претерпевает наиболее существенные изменения: переход на онлайн, корректировка академического календаря на текущий год, оценка готовности университетов к стратегическому планированию, отсутствие личного общения между преподавателем и студентом и т.д. Целью данного исследования является выявление ключевых проблем, возникающих в процессе дистанционного онлайн-образования в высшем учебном заведении, проведение сравнительного анализа отношения к дистанционному онлайн-образованию студентов высших учебных заведений, расположенных в мегаполисе (Санкт-Петербург) и областном центре (город Мурманск). Данное исследование было направлено на выявление некоторых групп проблем, возникших при внедрении дистанционного обучения в техническом вузе, а также отношения к ним студентов, обучающихся в технических и инженерно-технических вузах мегаполиса (Санкт-Петербург) и областного центра (Мурманск). В данном исследовании с помощью контент-анализа были проанализированы ответы студентов на вопросы, сформулированные авторами и сгруппированные по психологическим и организационным критериям дистанционного обучения. Результаты текущего исследования показали, что дистанционное обучение стало популярным и эффективным (позволяет экономить время и работать в своем собственном темпе). Однако была

обнаружена разница: у студентов мегаполиса было больше времени на подготовку к семинарам и общение, для студентов регионального вуза этот показатель на самом деле не имеет значения. Дистанционное обучение не оказало существенного влияния на круг интересов студентов технических вузов и их взаимоотношения с окружающими. Многие студенты выразили беспокойство за здоровье не только близких родственников, друзей, но и преподавателей. Ключевыми недостатками дистанционного обучения, по мнению студентов, являются отсутствие непосредственного контакта с преподавателями и одноклассниками, а также технические проблемы. Полученные результаты дают возможность сделать дистанционное обучение более профессиональным, исходя из конкретных требований образовательного процесса.

Ключевые слова: дистанционное обучение, высшее образование, проблемы кризисного дистанционного обучения, отношение студентов к дистанционному обучению.

Introduction

EducagtHihave taken place in the higher education system in the context of a pandemic are manifested, first, in the transformation of methods of implementing education [1].

Distance learning, also known by various names as distance learning, e-learning, mobile learning or online learning, is a form of learning in which teachers and students are physically separated from each other during the learning process [4], [9]. The problem with distance learning in the COVID-19 eDistance or not [11].

Today, many universities are closed for face-to-face training, so maintaining the rules of social distancing is of paramount importance, since they can be used as a test for events on the application of new technologies in distance learning [2]. The World Health Organization has defined social distancing as deliberately increasing the physical gap between people in order to contain the spread of disease [3].

The works published over recent years show that distance learning is a unique thing. It is considered to be a holistic system covering the entire curriculum (hands-on classes, technological methods, individual and team work, etc.) [7].

There is no doubt that distance learning cannot replace traditional education, which presupposes direct interaction between a teacher and students [10]. During the pandemic, the transition of all universities to distance learning created a challenge in the higher education system and revealed problems: difficulties in the transition of teachers to a distance learning format; an increase in the volume of preparation for lectures and practical classes; complex organization of productive interaction with students; decrease in students' motivation and attention span; low level of self-control among students; aggravation of stress and stress [8].

Materials and Methods

In a survey conducted in November 2020, an attempt was made to find out the opinion of students about distance learning during a pandemic. The study involved students from the Saint-Petersburg University of Humanities and Social Sciences and students from the Murmansk Arctic State University (technical faculty). The sample – Saint-Petersburg University of Humanities and Social Sciences consisted of 101 students, the sample of Murmansk Arctic State University – 102 students. A total of 203 students took part, the average age of the participants was 19 years.

In the context of the COVID-19 pandemic, all students completed distance learning. The Mirapolis platform was used to conduct training sessions at Saint-Petersburg University of Humanities and Social Sciences, Microsoft Teams and Zoom platforms at Murmansk Arctic State University.

The respondents were offered a questionnaire in which they were asked to answer open-ended questions about the advantages and disadvantages of distance learning in a pandemic, about relationships with family, friends and teachers, to express their point of view on the possible gains or losses of this training format, to make suggestions on how to improve efficiency of distance learning during the pandemic and give an opinion on the future of education after the pandemic.

The questionnaire includes six blocks: comparison of traditional education and distance education in a pandemic; advantages and disadvantages of using crisis distance learning in the educational process; relationships with family, friends and teachers; the gains and losses of distance learning in a pandemic; orientation of students' personality in the situation of coronavirus; problems associated with training and ideas about the future of distance learning at the university.

The reliability of the results of a representative sample was assessed using the Fisher's statistical test (n = 203; φ^*_{kr} = 2,31; p≤0.01) for dependent and independent samples, taking into account variance. When comparing, the group error probability was controlled using the Bonferroni correction, and the critical level of significance was 0,019.

Results and discussion

A comparative analysis of identifying problems and attitudes of students to distance learning during a pandemic showed that 68% of Saint-Petersburg University of Humanities and Social Sciences students and 67,1% of Murmansk Arctic State University students intend to study in a distance form during a pandemic, 31,3% and 32,9% – full-time, 18,8% and 7,2% mixed. There were no significant differences in the answers of Saint-Petersburg University of Humanities and Social Sciences and Murmansk Arctic State University students. Some of the reasons (advantages of using distance learning), in their opinion, are the absence of a threat to health, and the fact that they can learn at their own pace (saving time) (n = 203; φ^*e = 2,04 < φ^*_{kr} = 2,31; p≤0,01).

Most of the students of both universities (58% and 51,2%; n = 203; φ^*e = 2,01 < φ^*_{kr} = 2,31; p≤0,01) are concerned about the impact of COVID-19 on the health of close family members, friends and teachers. Students note that distance learning made it possible to rethink the attitude not only to their own health, but also to the health of the family, teaching staff, because *"the teacher is in the "risk zone" and takes responsibility for learning"*. Here are some statements of students: *"distance learning in a pandemic provides an opportunity to "review the lectures of the teacher, which is very helpful in the preparation and assimilation of the material"; "there is more time for additional acquisition of new knowledge".* Other positive results listed include the fact that metropolitan students had more time (54,8%) to work on assignments and to communicate with

family and friends; this makes their day more productive, there is an opportunity to attend many online courses that can take place in parallel with the main study.

For students of a provincial university, this factor turned out to be insignificant (2,4%; n = 102; φ*e = 3,77>φ*$_{kr}$ = 2,31; p≤0,01). This is most likely because students in the provinces spend less time on the way to the university.

In addition to the obvious advantages, distance learning also has some disadvantages. As for the stated shortcomings and problems of distance learning, 51,6% reported minor technical problems *"due to which the material is not fully assimilated"*, *"low efficiency of the lessons"*. A small part of the students drew attention to the deterioration of vision when communicating with a computer and distraction at home: *"it is difficult to concentrate on the classroom; there is fatigue from constantly sitting at the computer"*. The abrupt transition to distance learning caused problems of educational motivation (19,4%), difficulties in perceiving the information received. Students' answers: *"at home it is difficult to hold voluntary attention"studying at home is "seriously" impossible - the wrong atmosphere, constantly someone or something distracts", "every day is similar to the previous one, which greatly disorganizes the internal state and the educational process "* (n = 203; φ*e = 2,99>φ*$_{kr}$ = 2,31; p≤0,01).

The main drawback, according to the students, is the lack of face-to-face contact with teachers and classmates (61,3%): *"an incomplete picture of people's emotions and reactions through the screen is a consequence of the lack of face-to-face contact", "I want to speak with my work in person in front of everyone, communicate with teachers, classmates".* For students of a provincial university, this aspect of distance learning did not become particularly significant (2,4%; n = 102; φ*e = 3,05>φ*$_{kr}$ = 2,31; p≤0,01). On the contrary, some mark this factor as positive.

The technical factor turned out to be not so significant, but it showed the problems of low-income families who are not able to provide their children with the necessary equipment for full-fledged distance learning.

The students see as shortcomings: communication problems, inadequacy of communication between the group and the teacher, inconvenience in obtaining information, deterioration in the assimilation of knowledge, the complexity of organizing discussions.

The third block of questions reflects the attitude of students to family, friends and teachers.

The relationship between brothers and sisters did not change (47,3%), due to the longer amount of time, 32,3% called the relationship harmonious. For example, a student writes *"I have 2 little sisters, one is 3 years old, the other is 1 year old. I love them, I am glad that I can spend more time with them"*, 10,7% have improved relations *"I spent almost the entire April alone with my younger sister at home, although usually we rarely see each other because of life in different cities, we had more time and opportunity to communicate, I taught her to knit, together we experienced the loss of a close relative".* For 9,7%, the relationship is tense *"there have always been tense relations, but during the period of self-isolation, the conflicts escalated".* For students of a provincial university, this issue is less relevant (2,4%; n = 102; φ*e = 3,93>φ*$_{kr}$ = 2,31; p≤0,01). For other questions, the difference in answers is not significant.

Relations with parents are characterized by warmth, closeness, emotional openness *"more worries about health, we begin to appreciate each other a little more", "relations have improved, we have become closer".* Self-isolation can exacerbate many of the pre-existing problems for the student and his relationship with parents, as they spend more time at home, in crowded conditions communicate with each other, and 9,7% described the relationship with parents as tense *"tense, spend a lot of time in the same space. Life in another city was more comfortable".*

Students of a regional university note an increase in tension (11%) in relations with parents in connection with worries about their health, and with a change in the format of education, which is not quite clear to parents.

In the conditions of self-isolation, 12,9% of students made new friends *"the circle of friends changed a little, stopped communicating with those who took the position of covid dissidents, but the close circle of friends remained the same, my friends and I helped each other to survive the difficult time of isolation", "I I want to change my social circle. Friends do not help my personal growth in any way. I began to communicate with them less and less often, because our interests diverge".* In a capital university, 45,2% and, accordingly, 34,1% in a provincial one reported about the remoteness of relations "a little distanced from each other due to rare meetings" (n = 203; φ*e = 2,34>φ*$_{kr}$ = 2,31; p≤0,01). It can be assumed that digital communications satisfy the needs of communication, but the quality of such interaction is less effective. Interaction with peers provides motivation and improves education and learning outcomes.

Students of the provincial university did not have new friends. Perhaps this is because in a big city people are more likely to be acquainted on the Internet than in a small town.

The trainees generally positively commented on their relationship with the teachers *"teachers treat our problems with understanding, everyone accepts each other's positions, it is very great that such communication and mutual adaptation to conditions take place".* 22,6% and accordingly (6,1%) noted the relationship as complex, detached, less close. Since the rapid transition to online learning methods led to a significant increase in the workload on teachers, which is associated with increased excitability (transferring materials to the online space, acquiring and instantly navigating through the necessary software), there were difficulties in the relationship. Students' statements: *"mutual understanding periodically disappears due to the new order of teaching", "relations with some teachers have become complicated, as many think that communication problems are rigged, and the student simply does not want to answer the question posed"* (n = 203; φ*e = 2,91>φ*$_{kr}$ = 2,31; p≤0,01).

In a provincial university, relations with teachers are assessed more as positive (48,8%) than complex (4,8%) (n = 203; φ*e = 4,08>φ*$_{kr}$ = 2,31; p≤0,01).

Relationships with peers and teachers demonstrated the identity of the perception of the situation before and during self-isolation. It can be assumed that the new generation of digital natives, defined as the hyper-cognitive generation, interact with peers through social media platforms more efficiently than previous generations, and have replaced "communication" with "interaction", forcing teachers to develop and implement new technologies [5], [6].

The fourth block included questions related to the gains and losses of distance learning during a pandemic, as well as the impact of distance learning on the student's university life.

Since there was an immediate transition from traditional education to distance learning during the pandemic, more students noted that *"teachers and students"* both gain and lose from distance learning. It can be assumed that the strong and weak side of distance learning is that students, teachers with a high level of self-control, self-discipline, who can organize their educational process and gain new experience, opportunities for personal and professional growth, win in the educational process. Students of the capital's higher educational institution noted the indicator "health", because distance education was, first of all, introduced for health safety (n = 203; $\varphi^*e = 2,48 > \varphi^*_{kr} = 2,31$; $p \leq 0,01$).

When asked, "Did distance learning during a pandemic affect university life?". More than 74% said that distance learning during a pandemic had an impact on student life. For example, students pointed out that: *"There is no live energy of communication! It is very difficult for me to communicate with the screen! I'm used to performing in public, but sitting at the screen, all the fuse and energy disappears, my health deteriorates from being constantly at the monitor!".*

Students of a regional university also believe that students and teachers have lost a lot (26,8%), but to a much lesser extent than students in the megalopolis. Still, students studying in a metropolis have much more opportunities to function in a cultural and educational environment.

The fifth block is associated with the orientation of the personality.

64,5% and (70,8%) answered that distance learning did not greatly affect the needs, interests, and values. It is possible that knowledge of the subject area and good computer skills, the emotional connection of teachers with students, their patience, compassion and care for students are necessary conditions for meeting educational needs in the format of distance learning. In addition, the ability to solve problems during and after online lectures has become critical strategies in educational activities.

It is important that 35,5% and (31,2%) noted the positive impact of distance learning on needs and values. Comments related to changes in the motivational-need sphere: *"For some reason, I began to treat everything material differently, all beautiful things, bags, etc., suddenly ceased to be needed. I began to set priorities differently and value completely different things", "there was time for mastering new skills, for obtaining new knowledge, in addition to those that are necessary for my future profession ", "I discovered many types of new activities that during full-time study could afford"*. At the same time, there was no significant difference between the answers of university students (n = 203; $\varphi^*e = 2,15 < \varphi^*_{kr} = 2,31$; $p \leq 0,01$).

The sixth block helped to identify the reasons hindering the successful implementation of educational activities in the format of distance learning and what education will look like after the pandemic.

The greatest difference was revealed in the answers to questions related to technical problems and self-organization during the period of distance learning (n = 203; $\varphi^*e = 4,10 > \varphi^*_{kr} = 2,31$; $p \leq 0,01$).

The variable "recommendation" gave students the opportunity to express their views on the positive outcomes of distance learning and the opportunity to improve teachers' online skills. The responses were grouped into several recommendations: improve internet access; at seminars to involve all participants in the discussion process; introduce new digital technologies; organize training sessions, taking into account the conditions in which low-income students live and who do not have the necessary equipment.

Students of the provincial university believe that the main problems were at the initial stage of the pandemic, now there are no special problems and it is only necessary to *"increase the responsibility of students, and for this, education must be made more organized"*. To improve organization, it is desirable to *"more test work", "improve the electronic system of the university", "take a calmer attitude to temporary inconveniences", "improve the teacher's qualifications for working in distance education", "and think over work with low-income students who do not have the necessary equipment"*.

Conclusion

1) There are distinctive features between the crisis distance learning and the typical, which are manifested in the suddenness of the crisis distance learning, i.e. crisis distance learning is used in conditions of unforeseen need, without preliminary rules and training; it is not only popular, it is a teaching tool for all age groups, it makes it possible to organize the educational process in a new way, but it also has an international problem.

2) Many students during a pandemic intend to study in the format of distance learning.

3) The main drawback that students of Saint-Petersburg University of Humanities and Social Sciences see in distance learning is the lack of face-to-face contact with teachers and classmates, students of the regional university noted this factor as positive.

4) Relationships with relatives have not generally changed, but the subjects have moved away from friends.

5) Students of a regional university experienced self-isolation less intensely, perhaps because they did not have to radically change their living conditions; learning provinces are less spoiled by vibrant events, like residents of a metropolis, and they are used to looking for impressions on the Internet.

6) University students in the megalopolis won in saving time for moving, but lost in the quality of additional impressions and a variety of events and other opportunities of the megalopolis.

In the future, these research results will help analyze the effectiveness of distance forms of learning at the students' knowledge verification phase. It should also be noted that the findings of this research will assist faculty in integration of distance forms of learning into the educational process based upon specialties and majors of would-be specialists.

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