

DOI: 10.28934/jwee21.12.pp190-206

JEL: I240

ORIGINAL SCIENTIFIC PAPER

Feature of Perception of Distance Learning by Students During the First Wave COVID19



Konstantin Antipyev.¹

Valeriy Levchenko.²

Gennady Razinsky.³

Perm National Research Polytechnic University, Faculty of Humanities,
Department of sociology and political science, Perm, Perm Krai, Russia

ABSTRACT

2020 has become an important challenge for all countries of the world. Even though pandemics have occurred periodically in the past, the current pandemic is taking place in the context of the information society and globalization development. Information on the spread of infection was rapidly disseminated through all channels of communication: television, social networks, messengers. Most of the countries have made and are making efforts to reduce the possibility of simultaneously contracting with large numbers of people. Educational institutions have begun to switch to distance learning. Both teachers and students at all levels of education found themselves in the new conditions. Vocational education has also turned into distance learning mode. Universities did not stop education but faced considerable difficulties in its organization while being in the conditions of distance learning. Based on the conducted research, the authors have studied the attitude of full-time students and female students to distance learning and adaptation to it.

¹ Corresponding author: e-mail: konstant77@mail.ru, tel. +79024735091

² E-mail: levv66@mail.ru, tel. +79024716881

³ E-mail: labsoc@pstu.ru, tel. +79027989013

KEY WORDS: *COVID19, education and gender, distance learning, higher education, students, boys, girls, forms of education, benchmarking, self-isolation, social distancing, attitudes towards distance learning*

Introduction

The high rate of spread of the new COVID19 infection has put the world in a difficult position both in medical, economic and in legal and social aspects. Despite repeated warnings from doctors that such a situation was possible, neither the population nor the national governments were prepared for it. Most decisions were made quite chaotically, based on their own ideas about the possibility of restricting the rights and freedoms of citizens (Goodman, Seigel & Sobel, 2020). The consequences of COVID19 will be subjected to a comprehensive analysis for a long time by specialists from different fields of scientific knowledge, politicians, and public figures. Currently, the accumulation of data continues, however it is already clear that the changes we will observe in the post-like period will be significant and they will manifest themselves in many areas. COVID19 has hit hard the national economy, socially disadvantaged populations, areas where poverty is widespread, where social distancing cannot be sustained (Chen, Waterman & Krieger, 2020).

To minimize the spread of COVID19 the governments of most countries, as well as medical professionals have either recommended or prescribed social distancing to reduce direct contact. Educational institutions switched to distance learning so that the educational process was not interrupted. Unfortunately, several related problems associated with the transition to distance learning have not been resolved for a long time. This is the problem of the movement of foreign students with closed borders, support for students with technical capabilities, psychosocial well-being of students and teachers (Sahu, 2020; El Masri & Sabzalieva, 2020). However, this has further emphasized the level of inequality both between and within countries. Opportunities for switching to distance learning were different for everyone, since they assumed at least the presence of a stable Internet and devices (computers, smartphones).

In Russia institutions of higher education began to move to a distance form in April 2020, when it became clear that a new infection had begun to spread in the country, and it was impossible to contain it. Both schools and professional educational institutions were switching to the distance learning

mode. Separately, it is worth highlighting institutions of higher education, which were ordered to organize distance learning on their own. As a result, both students and teachers quickly adapted to the new conditions. A similar process was going on in other countries and universities (De Boer, 2021; Poláková & Klímová, 2021; Gonçalves, Sousa & Pereira, 2020; Almomani, et al., 2021). The process did not go without problems and therefore became a test for many subjects.

Both men and women are studying together in Russian universities, and the number of women studying, including in engineering specialties, is increasing. COVID19 has put all students in a position of forced adaptation to sufficiently intensive educational programs (Fallatah, 2020; Giovannella, 2021). In order to optimize the process of their adaptation, it is important and necessary to take into account the subjective side of this process, a component of which is the gender aspect of distance learning perception during the first COVID19 wave. At the same time, it is interesting to reveal how much the process of perception of new educational conditions has been accepted by students of different genders, to find similarities and differences in the perception of new conditions.

It seems important to us to build and test several research hypotheses:

Hypothesis 1. Among female students there are more of those who are skeptical about distance learning, since for them personal contact in the process of education is more important.

Hypothesis 2. The degree of discipline and responsibility in relation to distance learning among female students is higher than among male students, which is reproduced from full-time education.

Hypothesis 3. The main common obstacles to distance learning for female and male students are problems with the Internet and the lack of an even algorithm of actions and study schedules.

Background

One of the significant measures that was supposed to reduce the spread of the new infection was social distancing, that is reducing the number of personal contacts between people, avoiding public places. Previously, social distancing was considered mainly in relation to certain social groups perceived contradictory by society or in a special situation: elderly people, homeless people, drug addicts, released prisoners (Cacioppo & Hawkey, 2009). Distancing was viewed by other members of society as a limitation to

contacts with them due to stereotypes and prejudices. Distancing in 2020 has come to be seen more broadly as a protective mechanism necessary for all groups of society (Mintrom & O'Connor, 2020).

Not only negative characteristics were considered in social distancing, but also positive ones were identified. Thus, distancing from strangers, random people has led to the fact it is possible to spend more time with family or to avoid being in a workplace where there are many stressors due to forced communication. Even before the COVID19 pandemic, researchers highlighted the benefits of distance learning and viewed it as a promising learning environment for students (Radović Marković, 2009). It is quite popular to consider distancing from the standpoint of cultural theory, when the same requirements for social distancing can be perceived by people in different ways: from acceptance to protest and resistance to restrictions (Davy, 2020).

The negative side of social distancing was a decrease in the possibilities of socialization, exacerbation of mental illness, the accumulation of fatigue and anxiety, which requires further study (Grubic, Badovinac & Johri, 2020). During social isolation a person feels lonely. Even before the pandemic, researchers noted that this loneliness causes persistent fear, hypersensitivity, and increased aggressiveness (Rodriguez-Romaguera & Stuber, 2018). During a pandemic and self-isolation, social support becomes important (Xiao&Yao, 2020).

Social distancing has swept the education system in 2020, which has become a significant problem. Training in many specialties involves not only the transfer of knowledge, but also systematic communication, exchange of information, emotions (Gendron, 2017). This is extremely important when teaching most specialties, which has already been established in the experience of many universities (Mingaleva & Vukovic, 2020). The impact of COVID19 on the education system began to be actively considered by researchers, especially since the situation did not unfold in laboratory conditions, but in natural conditions (Barnová, Krásna, & Gabrhelová, 2020; Loziak, Fedáková & Čopková, 2020). It has led to a high demand for distance and mixed technologies (García, 2020). Also, a number of researchers note that the fears of switching to distance learning were significant, but real practice has become favorable (Lee et al., 2021).

The influence of gender factors on higher education continues to attract researchers, since the problem of equality in education, stereotypes in

the choice of educational programs for women is quite relevant both in the past and in the present (Jonsson, 1999; Correll, 2001; Huyer & Carr, 2002; Thomas, 1990). During a pandemic, gender issues in education can be exacerbated.

Sociological data have begun to appear from surveys related to distance learning and its perception by students, which makes it possible to take this experience into account when implementing our own research on this topic (Pan, 2020; Baloran, 2020). Distance learning in the period of COVID19 also leads to an additional impact on the behavior of the main subjects of the educational process, on the psyche of students, can increase stress by worrying about passing exams, the success and timeliness of assignments and their assessment (Karalis, 2020).

Methods

To study the peculiarities of the perception of distance learning in institutions of higher professional education the sociology laboratory of the Perm National Research Polytechnic University organized a sociological survey among full-time students. The survey was carried out remotely using Google forms, by filling out an electronic questionnaire and was conducted in May 2020, when students had been on distance learning for almost two months. Accordingly, only those students who had access to the Internet took part in the study. The questionnaire survey was conducted in two weeks. The sample consisted of 633 students, of which 389 were women and, accordingly, 244 were men. While the respondents of technical faculties are mostly male, among the humanities 83.6% of the respondents are female. The bulk of students in the sample are bachelors - 552 people (87.2% of all surveyed students). 2/3 of them are women, 1/3 are men. Basically - this is the younger age group (under 20) - 82.9%. Thus, for further analysis, their social portrait is important: the predominantly female group, the lowest youth age, almost all under 24 years old, the average age is 19.5 years. The sample included two technical faculties and a humanitarian faculty, in the specialties of which more women study.

During data analysis, a comparative analysis method was applied considering the gender characteristics of students. The comparative method made it possible to highlight the similarities and differences in attitudes towards distance learning. The snowball method was used in the selection of respondents.

The questionnaire consisted of several blocks. The first block included the characteristics of the behavioral, cognitive, emotional and value components of attitudes towards distance learning. The questions of the block make it possible to reveal the meaningful features of the structure of the attitude of gender groups to distance learning, to concretize the advantages and disadvantages of such training from the point of view of students. The second block contained the factors that determine this attitude. This block made it possible to analyze the attitude considering socially significant parameters that affect the opinion of the respondents.

Results

Considering that the transition to distance learning took place rapidly, without any preparation, we assumed that students would face significant difficulties, since they had to quickly rebuild, joining in a new form of educational process. We found it significant to reveal how similar or different was the adaptation to distance learning of boys and girls studying in mixed groups. There is a persistent stereotype that for girls, personal interaction in the learning process is more important than for boys, and boys are more inclined to adopt new technologies than girls. In general, the issue of students' perception of various educational technologies is very important for modern universities, including from the point of view of establishing modes and consequences of failures within the life cycle of various university educational services (Mingaleva, et al., 2019; Gunes, 2019).

The respondents were asked about the experience of using forms of distance learning earlier, in the pre-dock period. Such experience had 40.2% of female students and 32.6% of male students. Another thing is that this experience was situational, students could enroll in online courses, which were very numerous, but this was mainly done outside the curriculum. The most popular online language courses were used by more girls than boys (Stoytcheva, 2018; Cacheiro-Gonzalez, et al., 2019). Thus, the girls' respondents had a somewhat greater experience of distance learning.

When asked about the attitude towards distance learning, the following distributions were obtained (see Table 1).

Table 1: Attitude towards distance learning (in%)

Attitude	Women	Men
Positive	18,4	21,1
neutral, as well as to other forms of education	36,4	34,7
Negative	32,8	38,9
I am at a loss to answer	12,3	5,9

Source: compiled by the authors

There was quite a fairly large number of female students who were undecided with the answer (12.3%). This is more likely due to the uncertainty of the forms in the subjects, somewhere the teachers themselves quickly switched to the remote model, somewhere there was an overload of tasks, and somewhere in general the load has dropped significantly. A negative attitude was more expressed by young men (38.9%), although the gap in assessment with girls was only 6.1%. Positive and neutral assessments of female and male students are quite close.

It is known that the modern world gives us many learning opportunities if we have access to the Internet. These opportunities are most actively used by young people, for whom the assimilation of these technologies does not require much effort, because they already use them in one form or another. The bigger problem was the readiness of the teachers themselves for the means that they did not use. What means of distance learning did the boys and girls use? (see Table 2).

Table 2: Distance learning tools used (in %)

Facilities	women	men
Universal platforms (Zoom, etc.)	86,4	80,2
University platforms	51,0	62,8
Faculty platforms	22,4	13,5
Social networks	68,4	68,8
Messengers	43,5	38,5
Email	72,6	72,4
Telephone	23,2	19,8
Electronic teaching materials	30,5	29,5
Electronic Libraries	13,8	10,4
Virtual laboratories	1,5	2,1
Other	0,0	0,0

Source: compiled by the authors

We can see that social networks, e-mail, e-learning materials are being used evenly, and electronic platforms of faculties are used more by girls (22.4%) than boys (13.5%). On the contrary, university platforms are used more by men (62.8%). Universal platforms are unambiguously highly popular, slightly higher among women (86.4%) than among men (80.2%). Accordingly, there are universal leaders in distance learning that unite men and women: universal platforms (1), email (2) and social networks (3). This is because students had hands-on experience with them prior to COVID19. It can also be noted that female students are more diverse in terms of the use of distance learning tools compared to male students.

A significant problem of distance learning has become a changed perception of the sense of time, schedule of classes. It is very difficult to adapt to new requirements. When you have to learn a significant part of the material on your own, complete the tasks on time. Although in general the respondents indicate timeliness of their implementation, only a third give an unconditionally positive answer and almost half answer more evasively, specifying that this is not always the case. Women show greater discipline in delivering assignments on time (42.3%) than male students (24.0%) (see table 3).

Table 3: Assessment of the timeliness of assignments (in%)

Timeliness of execution	women	men
Rented on time	42,3	24,0
Not always on time	45,0	53,5
Usually they don't give up on time	10,7	18,8
Other	2,0	3,7

Source: compiled by the authors

Distance learning was considered even before COVID19, being perceived as, on the one hand, a progressive form of education. In particular, over the past two decades, various methods of distance learning have been associated by researchers with the formation of an innovative economy, knowledge economy, and information economy (Connelly, 2016; Mingaleva & Mirskikh, 2010; Van Der Wende, 2010; Djuricic, et al., 2008). On the other hand, concerns were expressed about the negative impact of distance learning on the personality. During our study respondents were asked about the benefits of distance learning. Several inaccuracies were found. Thus, female students more appreciate the development of new technologies in the

process (28.9%), in comparison with male students (16.3%). The independence of the educational process from the place, freedom and flexibility of the schedule are more appreciated by female students (46.4% and 65.1%, respectively) than male students (35.8% and 59.4%) (see table 4). Boys noted a higher proportion of independence (38.5%), compared with girls (27.6%). At the same time, many other positions of the sexes are quite close.

Table 4: Assessing the benefits of distance learning

Benefits	Floor	
	women	men
Freedom and flexibility of the schedule	65,1	59,4
High degree of independence	27,6	38,5
More effective feedback	12,3	16,7
Independence of the educational process from the location of trainers and students	46,4	35,8
Mastering new technologies and means of communication	28,9	16,3
Development of self-discipline and self-education	28,7	26,0
Application of new teaching methods, new forms of material presentation, etc.	10,5	11,8
Online access to lectures, libraries and other electronic resources	5,4	5,9
Not found any particular advantages	17,6	20,1

Source: compiled by the authors

With the next question, we identified the shortcomings of distance learning, which the respondents could already feel in practice, having studied for about a month in the new conditions. The data obtained showed that even in the three most significant positions, the fluctuations were not significant between the sexes, most opinions coincided or were close to each other. A significant discrepancy was found regarding the lack of programs, platforms and teaching methodologies. Men were more critical (14.2%), women were less critical (7.5%). Also, female students indicated less difficulties with the control of the educational process (9.0%) than men (14.2%) (see Table 5).

Table 5: Assessing of problems and gaps in distance learning

Problems and disadvantages	Women		Men	
	%	rank	%	rank
Lack of your own computer	5,0	13-14	8,7	11
Internet problems	49,8	1	44,4	2
Lack of a clear algorithm	48,1	3	50,3	1
Low degree of interactivity (communication)	33,1	5	35,8	5
Inconvenient (unstable) training schedule	25,3	6	22,9	6
The surface of the knowledge gained	41,0	4	41,7	4
Lack of personal contac	49,4	2	42,4	3
Insufficient computer literacy of teachers	18,6	7	14,6	7
Insufficient computer literacy of students	4,2	15	5,6	14,15,16
Lack of computer programs, platforms, methods	7,5	11	14,2	8-9
The development of some courses and programs for online learning leaves much to be desired	7,3	12	6,3	13
Lack of well-developed curricula and courses	9,4	9	7,3	12
Limitations of teaching by written teaching	5,0	13-14	5,6	14,15,16
Inability to develop practical skills	10,5	8	11,5	10
Difficulty with control	9,0	10	14,2	8-9
Lack of open access online training materials	2,5	17	3,8	17
No problems	3,8	16	5,6	14,15,16

Source: compiled by the authors

The high degree of most rank matches is indicative, given the general situation in which the educational institution was located. Also, the role was played by the fact that some of the students who did not need to attend face-to-face laboratory work on the equipment of the university, dispersed to their settlements, where there could be difficulties with Internet access and the workload of household chores. Many respondents, regardless of gender, indicated similar disadvantages. During the second wave of COVID19 in September-December 2020, many of these shortcomings were partially eliminated by the efforts of university administrations, teachers and students themselves (Education in a post-COVID world, 2020).

The question regarding satisfaction was logical, since initially the students were guided by the format of full-time education. The following distributions were obtained (see Table 6)

Table 6: Assessing of satisfaction with distance learning

Satisfaction	women	men
Satisfied completely	5,6	9,2
Rather satisfied than not	44,8	38,2
Rather dissatisfied than yes	40,4	38,9
Not at all satisfied	9,2	13,7
Overall satisfied	50,4%	47,4%
Generally not satisfied	49,6%	52,6%

Source: compiled by the authors

From Table 6, we see that although, in general, the assessment of satisfaction with distance learning is slightly higher among female students than among male students, but, at the same time, the complete satisfaction of female students is, on the contrary, lower (5.6%). However, if we group the answers, then we will not see a significant difference, which indicates a more obvious solidarity in the assessments of students, girls and boys.

Discussion

The results of the study showed that for the majority of respondents, the transition to distance learning did not become a deep problem, given the high involvement of young people in online communication systems, the presence of most modern devices from which to study (Albertivan, et al., 2019; Sansone & Bortolotti, 2021). Of the technological component, the most problematic was not the development of learning platforms, but the stability of Internet connections, because the Internet speed varies from one territory to another. The freedom and flexibility of the distance learning schedule has shown its significant attractiveness for students and female students. The necessity to visit non-distant classes, the need to follow their clear schedule and not to be late, were all smoothed out by distance learning. It became possible to skip certain classes, referring to problems with the Internet, which was problematic during traditional studies. The lack of communication at university was often compensated for by the same communication outside the university, except for certain months when

cafes, cinemas, entertainment centers were closed and access to public spaces was restricted. It can be argued that, on the one hand, distance learning for a short period has even brought variety to student life, but the further the distance process was postponed, the more its criticism grew. There is a steady understanding that distance learning is a forced measure, therefore the degree of criticality is lower than it would be if the process was delayed.

All these problems, in addition, also have their own specific gender characteristics that must be taken into account in the educational process.

The directions for improving the quality of distance learning are also clear. First, the presence of a stable schedule and clear procedures will make the educational process of this form more organized. Secondly, the combination of the distance form with the traditional one in the future can overcome the superficiality of knowledge and return personal contacts. Thirdly, increasing the availability and variety of online technologies should not exclude the existence of a clear action algorithm in teaching both for all students and teachers.

Conclusion

A new and unexpected threat from COVID19 has launched many processes at an accelerated rate. In principle, the education system has already used many distance technologies, but they rather accompanied the traditional form. Students still spent most of their time within the walls of universities. The transition to a distance form changed the educational process, reduced personal social ties, and demanded the rapid assimilation of new forms by both students and teachers. The problem of information inequality, different levels of information competencies among students has become more acute. Further analysis should be made of the consequences of distance learning, its impact on students of both of genders, as well as on those in different courses of study and different programs. The study showed greater similarity in the assessments of distance learning than differences, respectively, understandable priority problems that need to be addressed in the case of further practice of this form of education.

Hypothesis 1 that female students are more skeptical about distance learning, since personal interaction is important for them, was not confirmed. The study did not reveal a significant difference in attitudes towards distance learning among boys and girls.

Hypothesis 2 about greater discipline in performing tasks on the remote form was confirmed and showed that female students evaluate their attitude to learning, sending assignments, as more responsible.

Hypothesis 3 about the main problems of distance learning was generally confirmed. There is no significant difference between the assessment of problems within the framework of gender. Both male and female students agreed that they experienced problems with the Internet and the lack of a clear algorithm of actions during their studies.

A promising area for future research could be measurement of the impact of forced distance learning on the subsequent traditional educational process or social ties. Perhaps, students will remember distance learning with nostalgia, or conversely, as a wasted time. In general, it is the postcovid period that will be significant for understanding the direction of the forms of education (Khalili, 2020).

References

- [1] **Albertivan, Daniel, Hendryantono Limantara, Reza A. Rachmadiati, Adik W. Pamungkas, and Nico Surantha.** 2019. "IT risk identification and evaluation: A case study on XYZ University". *International Journal on Advanced Science, Engineering and Information Technology*, 9(1): 250-257. DOI:10.18517/ijaseit.9.1.2739
- [2] **Almomani, Ensaf Y., Ahmad M. Qablan, Fatin Y. Atrooz, Abbas M. Almomany, Rima M. Hajjo, and Huda Y. Almomani.** 2021. "The Influence of Coronavirus Diseases 2019 (COVID19) Pandemic and the Quarantine Practices on University Students' Beliefs About the Online Learning Experience in Jordan". *Frontiers in Public Health*, 8: 595874
- [3] **Baloran, Erick T.** 2020. "Knowledge, Attitudes, Anxiety, and Coping Strategies of Students during COVID19 Pandemic", *Journal of Loss and Trauma*, 25 (8): 635-642. DOI:10.1080/15325024.2020.1769300
- [4] **Barnová, Silvia, Krásna Slávka, and Gabriela Gabrhelová,** 2020. "The Impact of COVID19 Pandemics on Schools – Challenges and New Opportunities for a Woman-Owned Organization", *Journal of Women's Entrepreneurship and Education*, No. 3-4: 41-58. DOI: 10.28934/jwee20.34.pp41-58
- [5] **Cacheiro-Gonzalez, María L., Antonio Medina-Rivilla, Maria C. Dominguez-Garrido, and Maria Medina-Dominguez.** 2019. "The learning platform in distance higher education: Student's perceptions". *Turkish Online Journal of Distance Education*, 20(1): 71-95. DOI:10.17718/tojde.522387

-
- [6] **Cacioppo, John T., Louise C. Hawkey.** 2009. "Perceived social isolation and cognition." *Trends in Cognitive Sciences*, 13: 447–454. DOI:10.1016/j.tics.2009.06.005
- [7] **Chen, Jarvis T., Pamela D. Waterman, and Nancy Krieger.** 2020. "COVID19 and the unequal surge in mortality rates in Massachusetts, by city/town and ZIP Code measures of poverty, household crowding, race/ethnicity, and racialized economic segregation". *Harvard Center for Population and Development Studies Working Paper*, 9 (2); 1–52.
- [8] **Connelly, Thomas.** 2016. "Building a Global Technical Workforce", *ACS Symposium Series*, 1219: 37-42. DOI:10.1021/bk-2016-1219.ch005
- [9] **Correll, Shelley J.** 2001. "Gender and the career choice process: The role of biased self-assessments". *American Journal of Sociology*, 106(6): 1691-1730. DOI:10.1086/321299
- [10] **Davy, Benjamin.** 2020. "Social Distancing and Cultural Bias. On the Spatiality of COVID19". *Journal of the American Planning Association*, October 23. DOI: 10.1080/01944363.2020.1824617
- [11] **De Boer, Harry.** 2021. "COVID19 in Dutch higher education". *Studies in higher education*, 46(1); 96-106. DOI:10.1080/03075079.2020.1859684
- [12] **Djuricic, Aleisha, Helen M. Grady, Kathleen M. Johnstone, and William G. Graham.** 2008. "The information economy: Educational opportunities for industry-based professionals". *IEEE International Professional Communication Conference*, 4610204. DOI: 10.1109/IPCC.2008.4610204
- [13] **Education in a post-COVID world: Nine ideas for public action.** International Commission on the Futures of Education, Paris, UNESCO. Accessed 21.10.2020. <https://www.stemcoalition.eu/publications/education-post-covid-world-nine-ideas-public-action>
- [14] **El Masri, Amira, and Emma Sabzalieva.** 2020. "Dealing with disruption, rethinking recovery: Policy responses to the COVID19 pandemic in higher education". *Policy Design and Practice*, 3(3): 312-333. DOI: 10.1080/25741292.2020.1813359
- [15] **Fallatah, Samaher A.** 2020. "Senior interior design students' perceptions about distance learning in the shadow of COVID19". *Journal of Public Health Research*, 9(S1): 29-37.
- [16] **García, Aretio L.** 2020. "Los saberes y competencias docentes en educación a distancia y digital. Una reflexión para la formación." *RIED. Revista Iberoamericana de Educación a Distancia*, 23(2): 9–30. <https://doi.org/10.5944/ried.23.2.26540>
- [17] **Gendron, Benedicte.** 2017. "Emotional capital: The set of emotional competencies as professional and vocational skills in emotional works and jobs". *Revista Española de Educación Comparada*, 29: 44–61. <https://doi.org/10.5944/reec.29.2017.17433>

- [18] **Giovannella, Carlo.** 2021. "Effect induced by the Covid19 pandemic on students' perception about technologies and distance learning", *Smart Innovation, Systems and Technologies*, 197: 105-116.
- [19] **Gonçalves, Sónia P., Maria J. Sousa, and Fernanda S. Pereira.** 2020. "Distance learning perceptions from higher education students—the case of Portugal". *Education Sciences*, 10(12): 374. <https://doi.org/10.3390/educsci10120374>
- [20] **Goodman, Matthew P., Stephanie Segal, and Mark Sobel.** 2020. Assessing the G20 Virtual Summit. *Washington, DC: Center for Strategic and International Studies.*
- [21] **Grubic, Nicholas, Shaylea Badovinac, and Amer M. Johri.** 2020. "Student mental health in the midst of the COVID19 pandemic: A call for further research and immediate solutions. *International Journal of Social Psychiatry*, 66(5): 517–518. DOI: 10.1177/0020764020925108
- [22] **Gunes, Sevim.** 2019. "What are the perceptions of the students about asynchronous distance learning and blended learning?" *World Journal on Educational Technology: Current Issues*, 11(4): 230-237.
- [23] **Huyer, Sophia, and Marilyn Carr.** 2002. "Information and Communication Technologies: A Priority for Women". *Gender, Technology and Development*, 6(1): 85–100. doi:10.1080/09718524.2002.11910024
- [24] **Jonsson, Jan O.** 1999. "Explaining sex differences in educational choice: An empirical assessment of rational choice". *European Sociological Review*, 15(4): 391-404.
- [25] **Karalis, Thanassis.** 2020. "Planning and Evaluation During Educational Disruption: Lessons Learned from Covid19 Pandemic for Treatment of Emergencies in Education." *European Journal of Education Studies*, 7(4): 125–142. <https://www.oapub.org/edu/index.php/ejes/article/view/3047>
- [26] **Khalili, Hossein.** 2020. "Online interprofessional education during and post the COVID19 pandemic: a commentary". *Journal of Interprofessional Care*, 34(5): 687-690. <https://doi.org/10.1080/13561820.2020.1792424>
- [27] **Lee, Kyungmee, Mik Fanguy, Xuefei Sophie Lu, and Brett Bligh.** 2021. "Student learning during COVID19: It was not as bad as we feared". *Distance Education*, 42(1): 164-172.
- [28] **Loziak, Alexander, Fedáková Denisa and Radka Čopková.** 2020. "Work-related Stressors of Female Teachers During Covid19 School Closure". *Journal of Women's Entrepreneurship and Education*, No. 3-4, 59-78. DOI: 10.28934/jwee20.34.pp59-78
- [29] **Mingaleva, Zhanna, and Irina Mirskikh.** 2010. "On innovation and knowledge economy in Russia". *World Academy of Science, Engineering and Technology*, 66: 1032-1041.
- [30] **Mingaleva, Zhanna, Ivana Klackova, Albina Selezneva, and Natalia Shaidurova.** 2019. "Failure mode and effects analysis of the consequences

- of the life cycle of the university educational services”. *ICETA 2019 - 17th IEEE International Conference on Emerging eLearning Technologies and Applications, Proceedings*, 9040032: 531-535. DOI: 10.1109/ICETA48886.2019.9040032
- [31] **Mingaleva, Zhanna A., and Natalia A. Vukovic.** 2020. “Development of engineering students competencies based on cognitive technologies in conditions of industry 4.0”. *International Journal of Cognitive Research in Science, Engineering and Education*, 8(Special Issue 1): 93-101. DOI: 10.23947/2334-8496-2020-8-SI-93-101
- [32] **Mintrom, Michael, and Ruby O’Connor.** 2020 “The importance of policy narrative: effective government responses to Covid19”. *Policy Design and Practice*, 3(3): 205-227. DOI: 10.1080/25741292.2020.1813358.
- [33] **Pan, Haimin.** 2020. “A Glimpse of University Students’ Family Life Amidst the COVID19 Virus”. *Journal of Loss and Trauma*, 25(6-7): 594-597. DOI: 10.1080/15325024.2020.1750194
- [34] **Poláková, Petra, and Blanka Klímová.** 2021. “The perception of slovak students on distance online learning in the time of coronavirus—a preliminary study”. *Education Sciences*, 11(2), 81: 1-7. <https://doi.org/10.3390/educsci11020081>
- [35] **Radović Marković, Mirjana.** 2009. “Education through e-learning: Case of Serbia”. *Journal of Business Economics and Management*, 10(4), 313-319, DOI:10.3846/1611-1699.2009.10.313-319
- [36] **Rodriguez-Romaguera, Jose, and Garret D. Stuber.** 2018. “Social isolation co-opts fear and aggression circuits”. *Cell*, 173(5): 1071–1072. doi:10.1016/j.cell.2018.04.031
- [37] **Sahu, Pradeep K.** 2020. “Closure of Universities Due to Coronavirus Disease 2019 (COVID19): Impact on Education and Mental Health of Students and Academic Staff”. *Cureus*, 12(4). doi:10.7759/cureus.754
- [38] **Sansone, Nadia and Ilaria Bortolotti.** 2021. ”Technology enhanced active and collaborative learning in distance higher education: Students’ perception”. *CEUR Workshop Proceedings*, 2817.
- [39] **Stoytcheva, Maria.** 2018. “Students' perceptions of online collaboration in a distance learning French language course”. *AIP Conference Proceedings*, 2048, 020030.
- [40] **Thomas, Kim.** 1990. *Gender and Subject in Higher Education*. Buckingham, Society for Research into Higher Education.
- [41] **Van Der Wende, Marijk.** 2010 “Internationalization of higher education”. *International Encyclopedia of Education*, 4: 540-545. DOI:10.1016/B978-0-08-044894-7.00836-8
- [42] **Zhou, Xiao, and Benxian Yao.** 2020. “Social support and acute stress symptoms (ASSs) during the COVID19 outbreak: deciphering the roles of

psychological needs and sense of control.” *European Journal of Psychotraumatology*, 11 (1): 1779494.

Article history: Received: April 14th, 2021

Accepted: June 10th, 2021