

COVID-19 IMPACT ON HIGHER EDUCATION: PERCEPTIONS AMONG UNIVERSITY TEACHERS IN BULGARIA

Atanas Dimitrov, Vasil Pavlov

Department National and Regional Security, University of National and World Economy, Sofia, Bulgaria

Abstract

Higher education has been severely affected by the COVID-19 pandemic. Although the transition to online learning was initially seen as a success, subsequently this form of education and the ongoing ambiguities regarding the conduct of classes have been generating many critical opinions from both teachers and students. This study is based on a survey among 194 university professors from twenty higher education institutions from all statistical regions in Bulgaria about their perceptions of the impact of COVID-19 on the higher education system in the country, including in terms of their teaching and research activities. The respondents' answers reveal generally an unwillingness of the teaching staff with the online form of education, especially when it comes to quality. Based on the survey results, we claim that whereas the pandemic situation has created new opportunities for the development of the higher education system, this sector should not be narrowed to simply another form of business.

Keywords: *higher education, COVID-19, socio-economic impact, teachers perceptions, online learning*

1. INTRODUCTION

The COVID-19 pandemic has undoubtedly had a political, social and economic impact at the national, regional, and global levels. Almost all sectors of social and economic life have been affected, although differently across the countries. In Bulgaria, this topic not surprisingly was leading in three parliamentary elections in 2021. The educational field, as in many other parts of the world, has also been severely affected. In fact, since declaring state of emergency on 13th March 2020, the Bulgarian authorities have repeatedly changed their course of action towards higher education, which has understandably led to further confusion among students and teaching staff. Tens of orders have been issued by state institutions aimed at stopping the spread of the virus. Between March 2020 and March 2022 the Ministry of Health alone issued more than 40 orders related to the higher education system in Bulgaria, many of which were followed by orders of university rectors regarding the respective higher education institutions (HEIs).

Actually, in March 2020 virtually all universities were switching to online teaching, some of them within a few days. Understandably, such a change required a number of challenges to be overcome in very short time: from implementing and adapting various technological resources to involving teachers who lack proper skills needed for online teaching (Garcia-Morales et. al. 2021). Furthermore, from that moment onwards a number of transitions have followed, with their type depending mainly on the number of COVID-19 cases, including the number of COVID-19 patients in intensive care. The changes in question varied from full-online classes to hybrid learning, to face to face learning and vice-versa. Therefore, in such circumstances, it is important to understand how those measures and changes have affected university teachers' attitudes in Bulgaria.

2. LITERATURE REVIEW

The COVID-19 and related restrictive measures imposed by the authorities around the world to fight the pandemic have had a significant impact on higher education. Due to this, many scholars have been contributing to the better understanding of the topic. Although studies focused on university teachers' perspectives are rather limited in number, some similar findings can be seen across the globe. For

example, some (Garcia-Morales et. al. 2021, p. 3) indicate that from the teaching staff point of view the challenges have been mainly related to the need for specific skills such as proficient computer knowledge and other abilities necessary in an online setting. Other surveys have also found technical issues to be among the major challenges for teachers in terms of online learning, more specifically the quality of network connection (Mishra et. al. 2020; Arora & Srinivasan 2020). In fact, these as well as other negative aspects of online education have resulted in creating of many opponents of it, including among teachers. As a survey among lecturers in Ukraine reveals, approximately 50% of them state that they do not accept the online education and would prefer not to teach online (Bakhmat et al. 2021, p. 7). Similar results are also found in Bangladesh (Saha et. al. 2022), Jordan (Almahasees et. al. 2021) and other countries as well.

At the same time, Salmi (2020, pp. 85-86), among other scholars, notes that HEIs should not be concerned with the impact of COVID-19 in the short term only, instead they should reshape their activities considering a long-term resilience that will include future use of some of the learning activities they have been using to cope with the pandemic situation and which many of them recognized as “a legitimate delivery modality”.

Narrowing the geographical scope to the Republic of Bulgaria only, research on the impact of the pandemic and related restrictive measures has so far focused mainly on the perceptions of students (e.g. Getova et al. 2020; Ilieva et. al. 2021; Mihailova & Mirchev 2021). When it comes to surveys among university teaching staff in Bulgaria, the literature is very limited and predominantly deals with it only partially (Getova et. al. 2020; Mihailova & Mirchev 2021), probably due to the very recent and still ongoing impact of the pandemic. In one of the very few publications on the topic, Filipova and Yuleva-Chuchulayna (2022) state that in the transition to distance learning in higher education the teaching staff is facing mainly three groups of problems: pedagogical, organizational and technological.

Apart from a number of negative aspects of online education, some scholars (Garcia-Morales et. al. 2021) point out that the work environment at the tertiary education level during the COVID-19 pandemic can be perceived as an opportunity for a paradigm-change. Jansen (2019), among others, highlighted similar opportunities even before the pandemic situation. According to Noneva-Zlatkova and Alexandrov (2021, p. 98) the pandemic shows the advantages of the digital education in Bulgaria both as a standalone instruction and in hybrid modes, while at the same time it should not be seen as a panacea for challenges to the country's higher education system.

3. METHODOLOGY

The current study is based on the responses of 194 teachers at the higher education level in Bulgaria to a questionnaire regarding their perceptions on the pandemic impact on their teaching and research activities. The questionnaire was elaborated through google forms and was sent online in the period 10th February – 27th February 2022 to a total of 1221 university teachers from twenty HEIs, both public and private, from all statistical regions in Bulgaria: Northwest, North Central, Northeast, Southeast, Southwest and South Central regions. In terms of this, it should be indicated that according to data from the National Statistical Institute of the Republic of Bulgaria, during the 2020/2021 academic year there were 20716 teachers in HEIs in the country. In other words, if we consider this the population size, then the survey deals with a 7% margin of error at a 95% confidence level.

The response rate was 15.89%. The participation of the respondents was fully anonymous and voluntary. The questionnaire included 17 questions, 3 of which related to gender, age and academic position of the participants, while the rest - to the impact of the pandemic on their teaching and research activities. A five-point Likert scale was used in 13 questions.

Teaching staff from Department “National and Regional Security” and Department “Economics of Transport and Energetics” at the University of National and World Economy did not take part in the survey, as some of them work on projects funded by the Bulgarian National Science Fund within the same framework of funding in relation to social, economic and educational aspects of the COVID-19 pandemic.

In this article the measured imposed by state authorities and university administration are understood as part of the COVID-19 pandemic. Also, online education/learning is intended as participating in online class activities outside the university where a student is enrolled. As a synonym we use distance learning.

4. SURVEY ANALYSIS AND DISCUSSION

4.1. Demographics of the respondents

Most of the respondents (61.9%) in the survey are females, of which 90.1% are aged between 35 and 64. The most numerous age group is that of those aged 45-54, while only 1% is aged over 75. A more detailed breakdown of study participants by gender and age group is presented in the table 1.

Table 1. Respondents by gender and age group

Age	Males	Females	% of all respondents
25-34	4	8	6,2%
35-44	15	36	26,3%
45-54	31	46	39,7%
55-64	15	27	21,6%
65-74	7	3	5,2%
Over 75	2	0	1%
Total	74	120	100%
	194		

In terms of academic positions, most of the respondents are associate professors (48.45%), followed by senior assistant professors (25.26%), full professors (12.89%), assistant professors (8.76%), lecturers (3.09%) and senior lecturers (1.55%). It should be noted that to some extent this reflects the distribution of the teaching staff in higher education in Bulgaria by academic position: professors are 15.2% of all, associated professors – 28.9%, while assistant professors and senior assistant professors are 38.5% (the National Statistical Institute of the Republic of Bulgaria includes assistant professors and senior assistant professors in one single group) (National Statistical Institute of the Republic of Bulgaria 2021).

4.2. Survey results

Regardless of the academic position, COVID-19 has significantly affected the higher education system. However, 65.5% of the respondents stated that their motivation to work had not been lowered during the pandemic (Figure 1). The percentage is even higher when it comes to assistant professors (83.3%). At the same time, 28.3% of all respondents acknowledge that the pandemic has influenced their motivation for work in a negative way. Concerning this, surveys in other countries have also shown similar results. For instance, Alonso-Garcia et al. (2021, p. 13) point out that motivation and enthusiasm are considered by both professors and students to be among the most negatively affected aspects when it comes to distance learning.

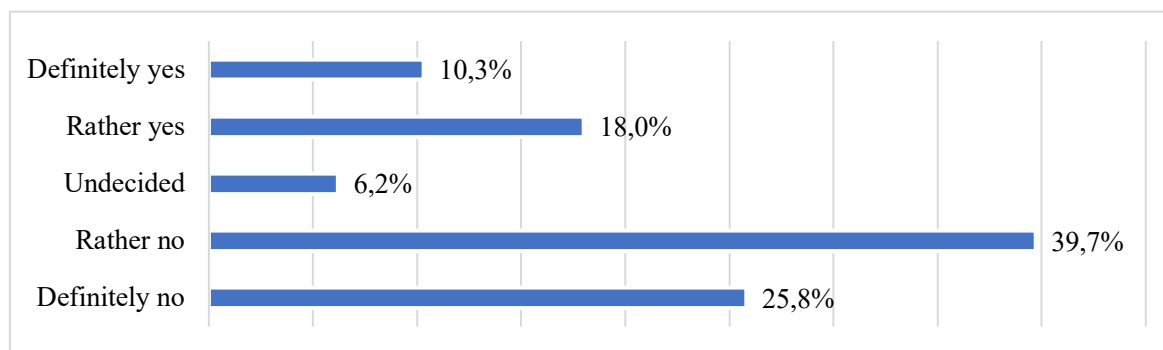


Figure 1. Has the COVID-19 pandemic decreased your motivation to work?

On the other hand, the data obtained by the answers to the next question which explores teachers' perceptions on the students' motivation, shows exactly the opposite. Again, but this time with a different connotation, 65% of the participants think that COVID-19 pandemic has negatively affected the motivation of their students, compared to 28.3% stating that there has not been such a negative impact. When it comes to categorical answers, those indicating "definitely yes" are almost seven times more than those selecting "definitely no" as an answer. Getova and Mileva (2021, p. 196) share similar results in a survey, pointing out further disadvantages of online learning. It is important to note that negative perceptions in terms of students' motivation during online classes prevail among teachers in basic and secondary education as well (e.g. Ministry of Science and Education 2021, pp. 21-23), which suggests that some negative aspects could be expected later in the higher education level.

It is to be noted that respondents from all academic positions indicate there is a decrease in the motivation of higher education students. Among the possible reasons for this decrease could be considered the lack of concentration due to prolonged sitting in front of a computer or accessing classes from virtually any place, the possibility to use unauthorized help during exams, the numerous government orders, including the frequent changes in the type of education – online, face-to-face or blended.

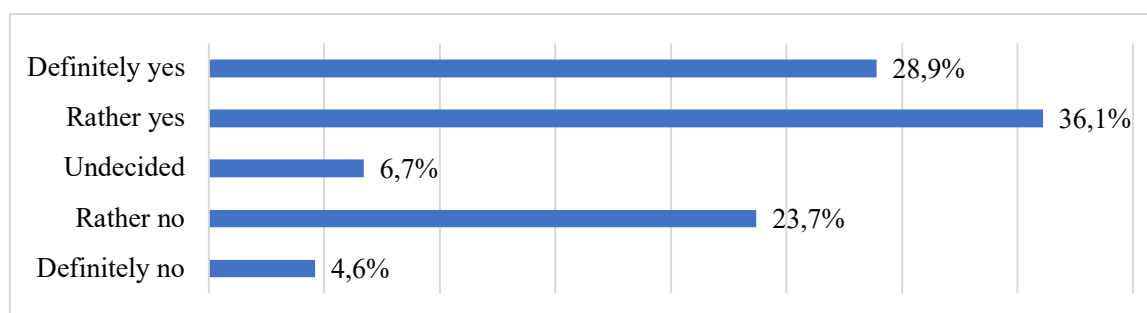


Figure 2. Has the COVID-19 pandemic contributed to lowering the learning motivation of your students?

When it comes to the impact of the pandemic on the respondents' academic growth, the answers gathered show more or less polarized opinions (Figure 3). A slight predominance of those who think that COVID-19 has not posed additional challenges to their academic growth is observed, respectively 53.1% against 39.7%. Among the respondents who deny restriction measures to have posed additional challenges to their academic growth are 23.5% of the assistants, 22.5% of the senior assistants, 18.1% of the associate professors, 33.3% of the lecturers, and 40% of the professors.

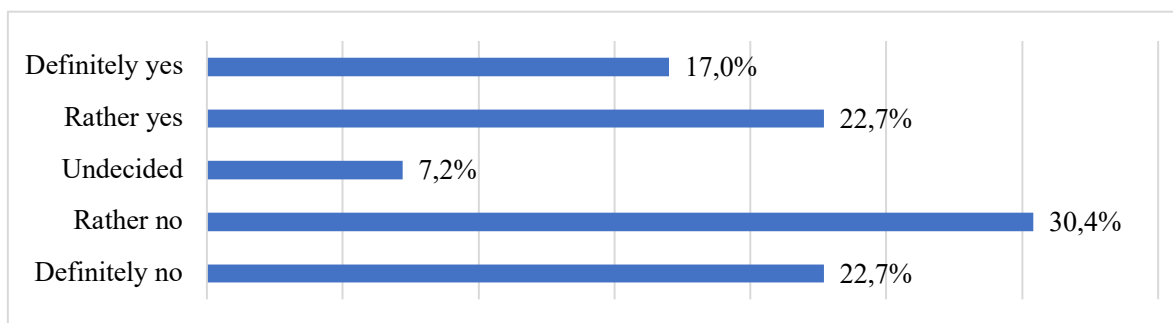


Figure 3. Has the COVID-19 pandemic posed additional challenges to your academic growth?

As one of the main goals of international mobility is to help teachers to gain more experience and improve their skills, hence, to have better chances for career development, they are expected to participate actively in international events such as conferences, lectures, seminars etc. However, the COVID-19 pandemic has had significant impact on such activities since many of them have been postponed, cancelled or conducted online. Therefore, it is not surprising that 77.8% of the respondents indicate that their international mobility has been hampered under such circumstances. What is more, 47.9% of the respondents express such position in a categorical way, i.e., seven times more than those on the opposite opinion (6.7%).

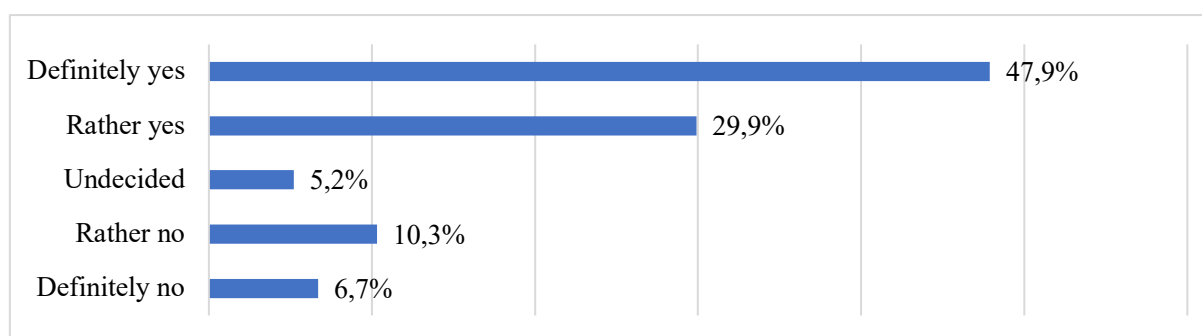


Figure 4. Has the COVID-19 pandemic hampered your international mobility?

Under such circumstances another question arises: Does conducting international mobility online instead of face-to-face reduce the quality of higher education? In an attempt not to completely stop these international activities, most organizations, and institutions worldwide, adopted an online form of their conduction. However, apart from the other known negative aspects of online education, this also limits teachers' chances for a fruitful experience, accumulation of contacts etc.

The above-mentioned aspects can be regarded as interconnected with the overall perceptions of the teachers about the quality of their teaching activities. Actually, 40.8% of the survey participants agree completely (12.4%) or to some extent (28.4%) that it has been negatively affected by the pandemic (Figure 5). Among those that firmly acknowledge it are 24% of the full professors and 13.8% of the associate professors, while these percentages are significantly lower in terms of senior assistant professors (4.1%) and assistant professors (5.9%). Also, only 13.1% of those who definitely state that their quality of teaching has been hampered are under the age of 45, which one can interpret in a way that younger teaching staff is more adaptive to the COVID-19 pandemic situation.

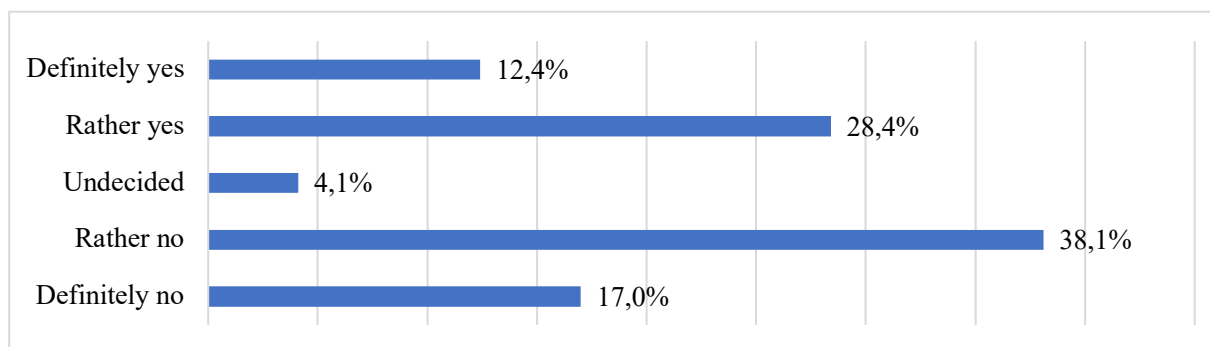


Figure 5. Has the COVID-19 pandemic negatively affected the quality of your teaching?

Comparing the answers from Figure 5 to those from Figure 6, we find out similar results, i.e. some 34.5% of respondents state that the pandemic has affected the quality of their research activities in a negative way, while 56.2% share the opposite opinion.

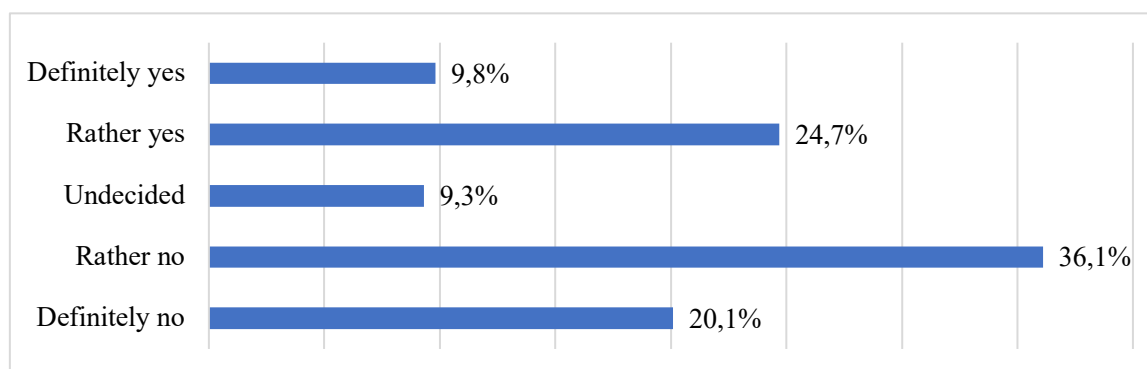


Figure 6. Has the COVID-19 pandemic negatively affected the quality of your research activities?

In addition, 61.9% of all respondents think that the online learning worsens generally the quality of higher education (Figure 7). What is more, there is a significant difference when it comes to expressing definite positions: those who answer with a “definitely yes” are six times more than those who answer with a “definitely no”. Although the term “quality” can be defined in various ways, the respondents’ answers indicate that the pandemic indeed is perceived as damaging higher education in the country.

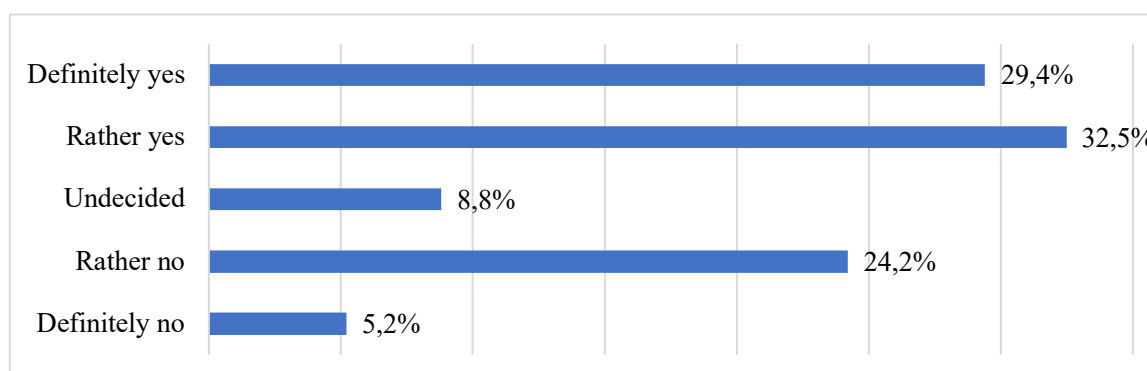


Figure 7. Do you think that the online form of education worsens the quality of higher education in the country?

The transition to online learning at all educational levels was greeted with some optimism at the outset, given the possible alternatives such as for example non-recognition of the academic year. However, two years of ambiguity and shifts from one form of education to another has been exhausting for many teachers and students. This is especially true for many students who work during their studies to support themselves. Concerning this, the survey shows approximately equal attitudes towards the online form of education among students who shared their opinion to their teachers (Figure 8): 40.7% rather approve it, in addition to 9.8% that are categorical in this regard. At the same time, the opposite opinion is shared respectively by 31.4% (rather against it) and 4.6% (definitely against it) of the respondents.

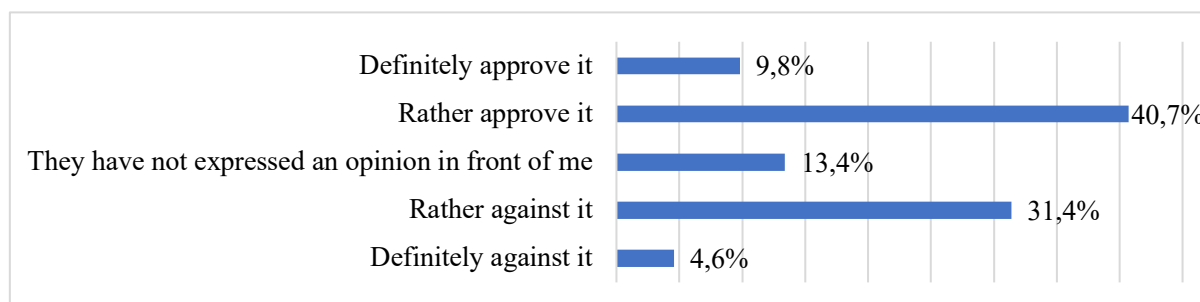


Figure 8. How do your students perceive the online form of education in the higher education institution where you teach?

In addition to the above-stated, when asked whether the quality of higher education depends on the form of education offered, more than 60% of the respondents answered in the positive, as shown in Figure 9. Approximately one third (30.4%) of all respondents are categorical in this regard, while the opposite opinion is shared by only 4.1%. Partly, this might be attributed to the long period in which the forms of education overflowed from one to the other, with the online form lasting the longest. This, combined with other problems of the Bulgarian higher education system such as low entry and passing exams requirements as well as the possibility for students to be distracted due to the long time they spend in front of their screens or to follow classes literally while driving or performing other activities, understandably could lead to the conclusion that online learning directly affects the quality of tertiary education.

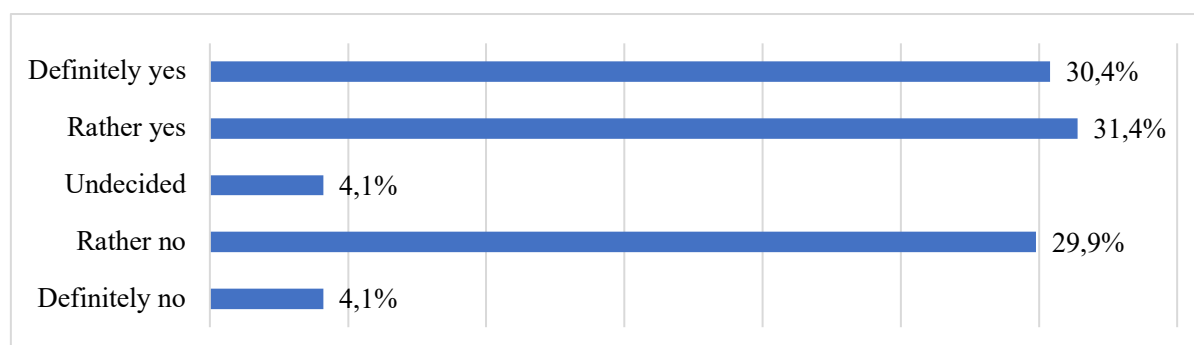


Figure 9. Do you think that the higher education quality depends on the form of education (online, online, hybrid/mixed)?

It is interesting to note that despite many ambiguities regarding the timing and specific measures to address the spread of COVID-19 and their impact on higher education, 51.6% of respondents (9.3% categorically) approve the measures that the government has taken so far in this regard (Figure 10).

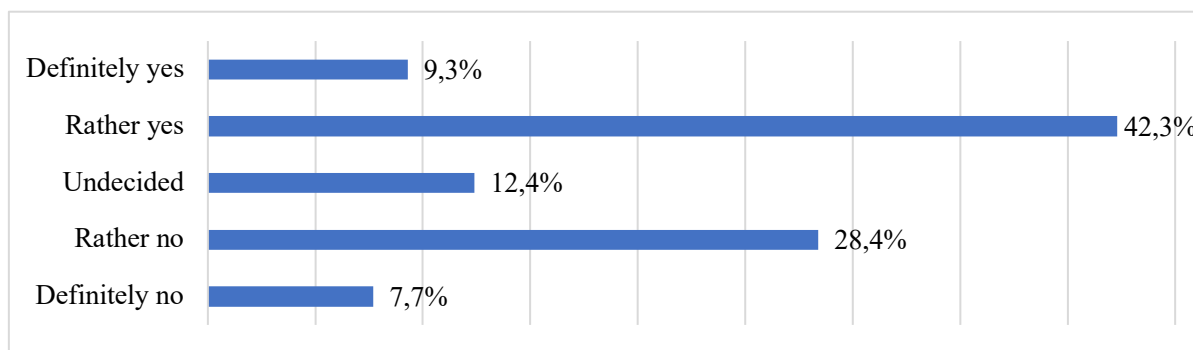


Figure 10. Do you approve the measures taken so far in the higher education system by the Bulgarian authorities with regards to the COVID-19 pandemic?

Again, more than half of the respondents (55.2%) express the opinion that the measures applied in the higher education system in Bulgaria to limit the spread of COVID-19 should be in line with the measures applied at the EU level (Fig. 11). At the same time, 28.9% consider that as not necessary, while 16% of the respondents cannot decide, the latter representing the second largest number of people who gave a similar answer to some of the questions in the survey. In terms of the EU role, the Winter Eurobarometer 2021-2022 reveals similar results concerning the trust that Bulgarian citizens have in the future EU's response to the coronavirus pandemic: 56% have total trust, while 37% do not trust the EU institutions in this regard (European Commission 2022).

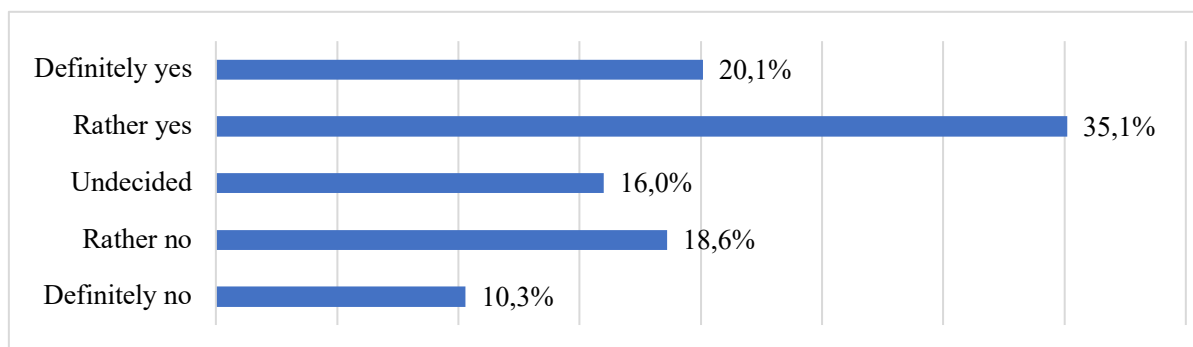


Figure 11. Do you think that the restrictive measures applied in the higher education system in Bulgaria in connection with the distribution of COVID-19 should be in line with the measures applied at the EU level?

Focusing on some economic aspects, when asked whether university teachers' salaries should have been increased during the pandemic, 68% of the respondents answered in the positive, half of them categorically (Figure 12). At the same time, approximately 1/5 of the respondents cannot decide whether this should have happened. The arguments for such an increase, undoubtedly, should not be seen as based on claims of front-line work during the pandemic, but primarily on the inflation and the additional government funding for increasing teachers' salaries in primary and secondary education in the last few years, including a very recent decision in this regard, which is part of the policy of the Ministry of Education and Science for sustainability of the policy for growth of their salaries (Ministry of Education and Science 2022, p. 4).

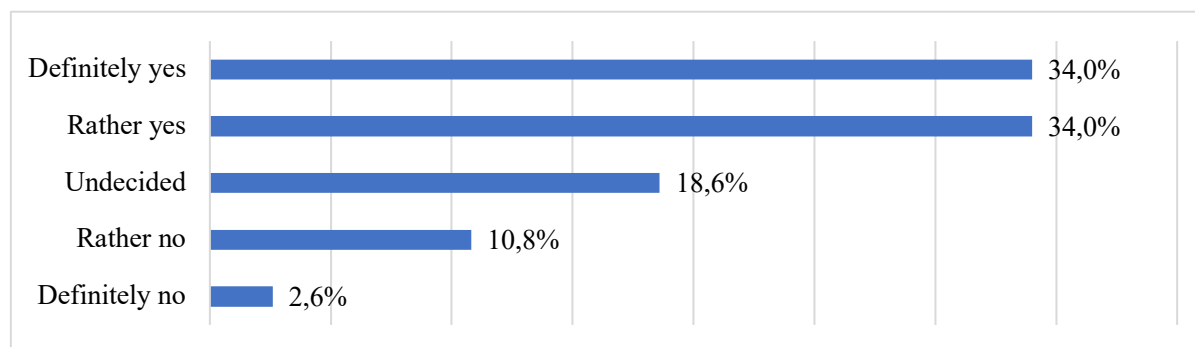


Figure 12. Do you think that the salaries of the university teachers in the higher education system in Bulgaria should have been increased in the context of the Covid-19 pandemic?

In fact, in 2021 there was an increase in the university teachers' salaries, but that was related to the amendment of the Higher Education Act of February 2020, according to which the Council of Ministers sets the minimum salary for the academic position of "assistant". The bill itself was submitted to the National Assembly at the beginning of 2019, i.e. it cannot be considered consistent with the aftermath of the COVID-19 pandemic. Apart from that, the increase was different for many universities, as the basic salaries themselves in most of the HEIs were different at the time.

Moreover, at a time when requests were made for additional funding for higher education to deal with the effects of rising inflation, the news about the merger of universities emerged. This idea was consequently promoted with arguments for improving the quality of education and better positioning in world rankings of the Bulgaria HEIs. In addition, while this news was initially met by the Minister of Education either by refusing to comment on it or by sending vague messages for clarification at a later stage, eventually it proved to be true. Provided this, at least at this stage, such news is very likely to contribute to increased distrust of a large part of the university community towards the state, rather than to increasing the quality of higher education and promoting and generating greater interest in the profession.

In addition to the previous question, 69.6% of the respondents states that their salary has remained at the same level (Fig. 13), which is very close to the percentage of respondents who stated that the salaries of the university teachers should have been increased during the pandemic. At the same time, 4.1% note that their pay has even been reduced.

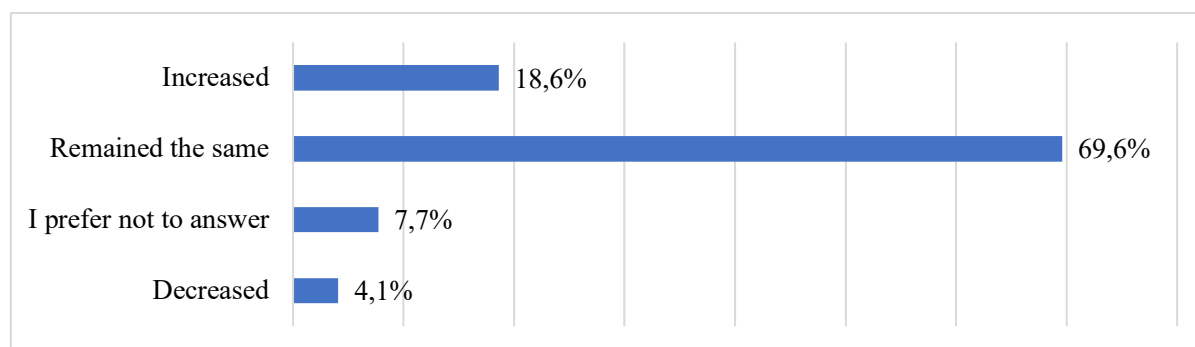


Figure 13. Your salary during the COVID-19 pandemic was?

Probably the last question in the survey, shown in Figure 14, can be perceived as the most provocative one, as it concerns the support for the introduction of the so-called "green certificate" as a condition for work in Bulgarian universities. The answers show generally a division into two main and equal in number groups, respectively supporters (46.9%) and opponents of such a policy (46.9%). Divided into

subgroups reflecting the specific answers, 25.3% of the respondents definitely support the introduction of the "green certificate", while 30.4% are totally against such a practice.

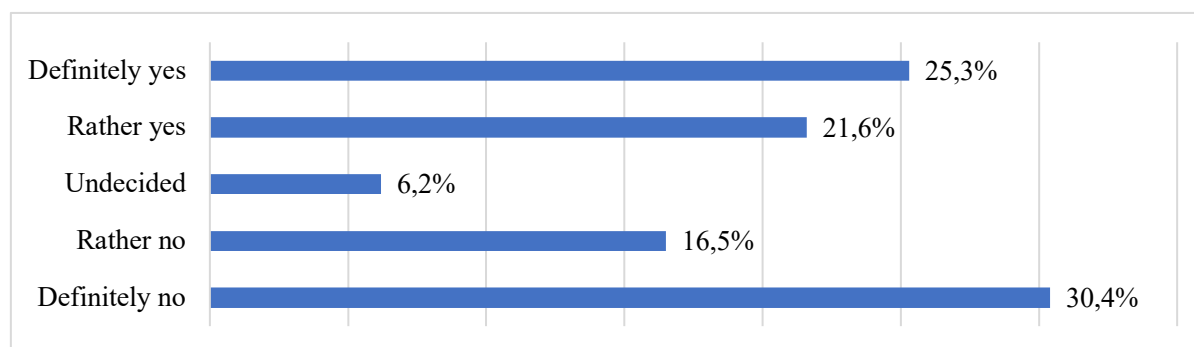


Figure 14. Do you support the introduction of the so-called "green certificate" as a condition for work in the higher education institutions in the country?

These results should not come as a surprise, as the Bulgarian society as a whole is divided not only on "the green pass issue". This goes also for the role of the EU and the place of Bulgaria in it in general, especially when a common EU position is needed to deal with some significant for the European citizens matter. In fact, in the case of the higher education system, the percentage of those who agree with the requirement for a "green certificate" as a condition to access and work physically in the Bulgarian HEIs, is higher than in other areas. It should be stated that refusal or consent in this case should not be equated with refusal or consent to vaccination, as it is often suggested.

Another thing worth noting is the authority's decision for mandatory possession of green pass for all indoor activities, including teaching, which happened by issuing Order № RD-01-856/ 19.10.2021. Contrary to the expectations and institutional promises that this action would bring the educational sector back to normalcy, it further reduced the ability of both university teachers and students to work in-person, which subsequently the problem. From the beginning of March 2022 a slight lowering of these requirements was observed, with the complete removal of the requirement to provide "the green certificate" to work or enter universities, two weeks later (Ministry of Health of the Republic of Bulgaria 2022). As a matter of fact, this is another example of the ambiguity in the higher education system in terms of such requirements leading to confusions and even social tensions between academic staff.

5. CONCLUSION AND RECOMMENDATIONS

Due the coronavirus pandemic over the last two years the higher education in Bulgaria has been significantly affected, perceived by many mostly in a negative way. This comes not only from uncertainties related to the COVID-19 pandemic itself, but from the ambiguity and lack of firm stance of many government decisions as well. More often than not they resulted, in turn, in decreased motivation, lack of opportunities for academic development and performance. Actually, similar conclusions are drawn from the survey results, which reveals that teaching staff in higher education in the country consider the pandemic situation a great damage to the quality of the sector.

If restrictive measures are to be put in place again in several months from now, this could result in lowering students opportunities in the labor market in the country in the long run. In addition, whereas it is suggested that the COVID-19 pandemic has led to new opportunities for higher education, i.e. its online form will very likely persist in the foreseeable future, the sector should not be narrowed to simply another form of business. In other words, higher education has important functions in terms of forming societal attitudes, etc., other than providing given businesses with workforce. Therefore, having at least a hybrid form of education that encompass face-to-face with online learning is of paramount importance.

What is more, in terms of public funding it is expected that the COVID-19 crisis poses some economic consequences for many higher educational institutions across the EU (OECD 2021, pp. 35-36). Although the student fees in most Bulgarian universities are not that high compared to those in universities from Western Europe, UK and USA, in case of prolonged online education, i.e., having for example masters' degree programs taught entirely online could lead to some decrease in students enrollment, especially if similar programs abroad are offered with decreased fees. Under such circumstances, however, higher salaries of the teaching staff are needed due also to increasing living costs as well as a motivation factor. What is more, the lack of clarity in this regard could also be seen as an unnecessary competition between university teachers and their colleagues from the basic and high school education levels.

Last but not least, despite the government's efforts to control the pandemic with as little damage as possible to the private and public sectors, it is clearly visible that some of the decisions did not lead to the desired effects, but on the contrary, prevented the higher education system in the country from developing at the required pace and direction. This paper more or less revealed some of the weaknesses. Therefore, it is of great importance to very carefully review and screen out good practices in order to implement them if new peaks in incident rates occur. Furthermore, in order for this to be a sustainable process and to prevent such omissions, constant and transparent communication between the academic community and the state is needed.

ACKNOWLEDGEMENTS

This work was supported financially by the Bulgarian National Science Fund.

REFERENCES

1. Almahasees, Z, Mohsen, K, & Amin, MO 2021, Faculty's and students' perceptions of online learning during COVID-19, *Front. Educ*, 6, <<https://doi.org/10.3389/educ.2021.638470>>.
2. Alonso-García, M, Garrido-Letrán, TM & Sánchez-Alzola, A 2021, Impact of COVID-19 on Educational Sustainability, Initial Perceptions of the University Community of the University of Cádiz, *Sustainability*, 13, 5938, <<https://doi.org/10.3390/su13115938>>.
3. Arora, A & Srinivasan, R 2020, Impact of Pandemic COVID-19 on the Teaching - Learning Process: A Study of Higher Education Teachers. *Prabandhan: Indian Journal of Management*, viewed 15 April 2022, <<http://indianjournalofmanagement.com/index.php/pijom/article/view/151825>>.
4. Bakhmat, L, Babakina, O & Belmaz, Ya 2021, Assessing online education during the COVID-19 pandemic: a survey of lecturers in Ukraine. *J. Phys.: Conf. Ser.* 1840 012050, viewed 14 March 2022, <<https://iopscience.iop.org/article/10.1088/1742-6596/1840/1/012050/meta>>.
5. European Commission 2022, Standard Eurobarometer 96, Winter 2021-2022, viewed 14 April 2022, <<https://europa.eu/eurobarometer/surveys/detail/2553>>.
6. Filipova, M & Yuleva-Chuchulayna, R 2022, Problems in digital learning for higher education teachers, *Strategies for Policy in Science and Education*, Vol. 30/1, <<https://doi.org/10.53656/str2022-1-1-prob>>.
7. García-Morales VJ, Garrido-Moreno A & Martín-Rojas R 2021, The Transformation of Higher Education After the COVID Disruption: Emerging Challenges in an Online Learning Scenario. *Frontiers in Psychology*, <<https://doi.org/10.3389/fpsyg.2021.616059>>.
8. Getova, A, Angelova-Igova, B & Mileva, E 2020, Online education during pandemic, according to students from two Bulgarian universities. *Pedagogy*, Vol. 92, Number 7s, pp. 211-219, viewed 26 March 2022, <<https://azbuki.bg/wp-content/uploads/2020/09/NSA-Antoaneta-Getova-Eleonora-mileva-Boryana-Angelova-Igova.pdf>>.

9. Getova, A & Mileva, E 2021, Did the Pandemic Permanently Digitalize Higher Education in Bulgaria? *Research in Social Change*, vol.13, no.1, pp.191-199, <<https://doi.org/10.2478/rsc-2021-0019>>.
10. Ilieva, G, Yankova, T, Klisarova-Belcheva, S & Ivanova, S 2021, Effects of COVID-19 Pandemic on University Students' Learning. *Information*, 12, 163, <<https://doi.org/10.3390/info12040163>>.
11. Jalmi, S 2020, *COVID's Lessons for Global Higher Education: Coping with the Present While Building a More Equitable Future*, Lumina Foundation, viewed 17 March 2022, <<https://files.eric.ed.gov/fulltext/ED611329.pdf>>.
12. Jensen, T 2019, Higher education in the digital era. The current state of transformation around the world, *International Association of Universities*, viewed 15 March 2022, <https://www.iau-aiu.net/IMG/pdf/technology_report_2019.pdf>.
13. Mikhailova, K & Mirchev, M 2021, The first online semester at UNWE through the eyes of students and teaching staff (in Bulgarian), *Research Papers of UNWE*. 3/2021. Publishing house – UNWE, viewed 15 March 2022, <<http://unwe-research-papers.org/bg/journalissues/article/10401>>.
14. Ministry of Education and Science 2021, *Distance learning in the e-environment 2020-2021: implications and forward-looking* (in Bulgarian), viewed 10 April 2022, <<https://bntnews.bg/f/news/o/1163/eccb666029b2707f4bf8fcb53e1189e0.pdf>>.
15. Ministry of Health of the Republic of Bulgaria 2022, Order No. ПД-01-138/17.03.2022 (in Bulgarian), viewed 26 March 2022, <https://www.mh.government.bg/media/filer_public/2022/03/17/zapoved__rd-01-138-17032022_g.pdf>.
16. Mishra, L, Gupta T & Shree, A 2020, Online teaching-learning in higher education during lockdown period of COVID-19 pandemic, *International Journal of Educational Research Open*, Vol 1, <<https://doi.org/10.1016/j.ijedro.2020.100012>>.
17. National Statistical Institute of the Republic of Bulgaria 2021, *Teaching staff by type of higher school, position, sex, kind of employment and ownership of higher school in 2020/2021 academic year*, 26 April, viewed 8 April 2022, <<https://www.nsi.bg/en/content/3398/teaching-staff-type-higher-school-academic-position-sex-kind-employment-and-ownership-higher-school>>
18. Noneva-Zlatkova, Y & Alexandrov, A 2021, Analysis of higher education policy changes due to Covid-19: the case of Bulgaria. *Balkans Journal of Emerging Trends in Social Sciences Balkans JETSS* 2:99, viewed 13 March 2022, <<https://www.ceeol.com/search/viewpdf?id=1046010>>.
19. OECD 2021, *The state of higher education: One year into the COVID-19 pandemic*. OECD Publishing, Paris, <<https://doi.org/10.1787/83c41957-en>>.
20. Saha, SM, Pranty, SA, Rana, MJ, Islam, MJ, & Hossain, ME 2022, Teaching during a pandemic: do university teachers prefer online teaching?. *Heliyon*, 8(1), <<https://doi.org/10.1016/j.heliyon.2021.e08663>>.