Did The Pandemic Permanently Digitalize Higher Education In Bulgaria?

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Research in Social Change

DID THE PANDEMIC PERMANENTLY DIGITALIZE HIGHER EDUCATION IN BULGARIA?

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Abstract

The pandemic of COVID-19 had a great impact on the educational systems in many countries, including Bulgaria. In the last three semesters, the educational process was held mostly online in the majority of the Bulgarian universities. The switch to online learning in Bulgaria was made very quickly and with no real preparation, which raised the question of whether it was effective enough. While considered as temporary, online learning continued three semesters, with the possibility of continuing even further, which leads to the question of whether the pandemic irreversibly changed higher education to a more digitalized, advanced, and practically new approach, and, most importantly: what are the perceptions of the participants in the educational process about all these unexpected changes?

The paper presents the results of an empirical online survey of the attitudes of lecturers and students toward the effects of online education, its advantages and disadvantages, and also its main problems. The sample consists of 224 students and 74 lecturers of different Bulgarian universities. The survey was made in 2021 and is a continuation of a pilot survey made during the first lockdown in Bulgaria in May 2020 by the same team.

Keywords

online learning • digitalization • higher education • online research • COVID-19 • educational change

1. Introduction

The epidemic of COVID-19 caused a crisis in the health, economic, educational, political, and social life of all countries of the world. It posed numerous challenges to higher education in Bulgaria and gave rise to academic discussions on distance learning. In March 2020, Bulgaria announced the first full lockdown and entered into a state of emergency that was prolonged several times and exists even today (at the end of 2021), although the measures against the epidemic changed several times. During the first lockdown, which continued till the end of June 2020, all the universities held their classes online. During the next academic year (2020–2021) the universities were left to choose the form of their classes, but as the situation of the epidemic worsened in Bulgaria,¹ practically all the universities in the country continued the educational process online or mostly online. In the beginning of the pandemic, the imposed state of emergency forced schools and universities in the country to urgently switch to a completely remote regime without

special prior training, as is the case in Bulgaria (Avramov and Avramova 2020; Barova and Mileva 2020; Naydenova and Chernev 2020). The transformation of the educational process from traditional to distance learning due to the restrictive measures in most cases was realized “spontaneously” in a number of academic specialties and programs and did not go smoothly. Issues that were not relevant before were put on the agenda: to what extent it is possible to quickly reorganize the education and learning process and move it to “virtual classrooms;” whether distance learning is equally applicable for all subjects and equally accessible for all participants; what is its effectiveness in various scientific and educational fields, for different types of higher education and other institutions.

Higher education, although more flexible in terms of teaching and engaging students, was also experiencing a number of crises. According to some authors, a significant part of the universities in Bulgaria did not have the necessary experience to switch to online learning in the conditions of the pandemic (Raycheva 2011; Koleva 2016).

It was an indisputable fact that the COVID-19 pandemic has significantly affected the educational system in the country. During the last four semesters (including the first semester of the academic year 2021–2022), in most Bulgarian universities, the educational process was realized online. Indeed, the change

1 Bulgaria held for a very long time one of the highest COVID mortality rates in the world, as can be seen in: <https://ourworldindata.org/covid-deaths>.

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towards distance/online learning was initially implemented very quickly, but so far, in the third study year, significant experience has been gained from higher education institutions in this area. It was no coincidence that after the end of the first academic year online, the Ministry of Education and Science of Bulgaria proposed a draft "Strategy for the Development of Higher Education in Republic of Bulgaria 2021-2030," which covered further processes towards "universal digitalization" of higher education. The term "universal digitalization" was central to the proposed strategy.

The strategic project was based on the university experience in online learning gained during the state of emergency and the epidemic situation in 2020. But at the same time, it could be said that it still did not offer a sufficiently detailed analysis of online learning ("Strategy for the Development of Higher Education in Republic of Bulgaria 2021-2030" 2021).

At the same time, the interest of specialists and university lecturers in describing, researching, analyzing, and studying the pros and cons of online learning was growing. Its impact on lecturers and students, as well as on the quality of the learning process, was increasingly being studied. In this regard, we should point out some more significant research conducted by Bulgarian scientists since March 2020.

In 2020, two empirical research studies of students and faculty reflection on online education at the University of National and World Economy (UNWE) were conducted (Mihailova 2020; Mihailova and Mirchev 2021). The first one reflected the initial impressions of students and teachers of this new form of education, registered in the second week of the online semester (15 – 22 March 2020). The second research study examined the quality of online learning and attitudes of students towards the first online session (5 – 15 June 2020). The research from March 2020 was the first Bulgarian survey in the field of online higher education with original methodological tools. Together with the second research from June 2020, they covered the first online semester and session and their inseparable connection. The primary information was collected through an online survey with original questionnaires developed for the purposes of the research.

According to the results of these two studies, Bulgarian universities respond quickly and adequately to the situation during the COVID-19 pandemic (Mihailova 2020; Mihailova and Mirchev 2021). The authors analyzed the different educational practices during the first lockdown at the UNWE. It was concluded that students and lecturers from the oldest university in the field of economics in Bulgaria evaluated online learning positively, and a high standard of teaching has been achieved, despite the pandemic.

It was summarized that UNWE managed to organize the learning process in accordance with the curricula and study schedules. Normally planned semester and state exams were

held. Effective technological support was provided by creating convenient and accessible Internet platforms and an online environment. At the same time, the authors emphasized that each lecturer from UNWE has gained significant experience in the direction of individualization of training and work in a virtual environment. All these indicators, in addition to being applied in practice during the first lockdown, were well recognized and positively assessed by students.

Significant research on distance learning was conducted by a group of researchers from the Faculty of Philosophy at Sofia University "St. Kliment Ohridski," the National Sports Academy "Vassil Levski," and the Bulgarian Academy of Science. It was held from April to May 2020, in the midst of the COVID-19 pandemic (Getova 2020).

A pilot study among students and lecturers from Sofia University and the National Sports Academy was organized; its aim was to understand the main characteristics of online education (Getova, Mileva, and Angelova-Igova 2020). The content of the study reflected the main problems in conducting distance learning during quarantine in the first stage of the COVID-19 pandemic. This research presented the results in the context of the technical issues that had significant impact on the educational process during online distance learning. The results showed how students from different universities and specialties perceived online education, how they evaluated it, and what risks it possessed for university education in the country in general. In this regard, the advantages and disadvantages of online learning in the first stage of the pandemic were analyzed, and some trends in its future development were outlined (Getova, Mileva, and Angelova-Igova 2020). Adapting online education to the needs of students and the specific educational environment was accompanied by difficulties of a different nature.

Other Bulgarian authors presented an analysis aimed at current problems and future prospects (Mineva and Getova 2020). In this paper, the opinions of Sofia University lecturers on the problems and the opportunities of the distance learning were analyzed.

In October 2020, the Open Society Institute published its study of online university education in Bulgaria. The study was conducted among students from all Bulgarian universities in the framework of updating the data for the publication of the Rating System of Higher Education Institutions in Bulgaria in 2020 (Open Society 2020).

Based on the presented analysis, it can be summarized that the pandemic situation in the country required a rapid and flexible transition of higher education to distance and online learning systems. Academic institutions have developed and have used their own distance learning systems that meet the needs of students and teachers in the specific conditions of the COVID-19 pandemic.

The problem with the education and the online learning

evidently was not unique to Bulgaria. Especially during the spring of 2020, in many countries, not only in Europe but all over the world, the lockdown affected higher education as many universities held their classes mostly online².

Similar surveys as presented in the paper were made in different countries in and outside Europe, as was the research of Mulroney and Kelly for UK universities (2020), of Firang for Canada (2020), of Doolan et al. for European universities (2020), of Copeland et al. (2021) for mental health and wellness of American students, and others.

In 2020 especially, the academic interest on this thematic field was high: a search in the biggest academic platforms, Web of Science and Scopus, shows that in 2020 more than 1000 articles were published in journals available in Scopus or Web of Science; in Google Scholar, there were even bigger findings, with more 29,000 results of articles, conference papers, or preprints dedicated to the topic of the higher education and online learning, while until the end of October 2021, in Scopus/Web of Science, the number of published articles was already around 700 and in Google Scholar, it was less than 10,000. This drop of academic interest could be to a degree defined by the fact that, as was mentioned already, many universities, including in Europe, tried to return to campus (at least partially), but in Bulgaria university education was held mostly online and this tendency is likely to continue, not only in the first, but also in the second semester of the academic year 2021–2022 (if the pandemic situation does not drastically change).

It is obvious that online learning is far from a temporary measure during the emergency situation in Bulgaria, as the three semesters online (with the tendency to continue even more) began to have a greater impact on the higher education itself and to accelerate its digitalization, as mentioned above. Could this digitalization survive beyond the situation of the pandemic in Bulgaria and most important, what are the attitudes of the main actors in the educational process (lecturers and students) about it: this is the main topic of interest of the present paper.

2. Methodology of the Research

The paper analyzes the main results of research that was conducted in the summer of 2021 as continuation of a pilot survey made by members of the same team during the first lockdown in Bulgaria that practically coincided with the second academic semester of the year 2020–2021 (Getova 2020). However, there were enough differences in the methodology and the purposes of both surveys, so they cannot be compared with statistical methods but only indirectly.

² As can be seen in the analyses of the online learning, cited in this paper.

The main purpose of the second research study was to find what were the changes in online learning as a basic approach in the Bulgarian universities between the first and the second year. Another purpose of the research of 2021 was to find how these changes were accepted (or not) by the main actors in the educational process (students and lecturers): whether they perceived them as systematic and permanent change in the higher education that would last even after the end of the pandemic, or whether they accept them as temporary situation that will expire when the pandemic is over.

The main scope of this paper is focused on the latter purpose. The research took part online and was held on the Limesurvey platform of the Faculty of Philosophy of Sofia University. 253 students and 77 lecturers from different Bulgarian universities and various university programs participated in the research. The sampling method used is a snowball sampling. The model is described in detail by Biernacki and Waldorf (1981). While it is a nonrepresentative type of sample, it provides the opportunity to collect a large and varied pool of opinions about the main topics included in the research.

The research included two questionnaires: one for students and one for lecturers; however, for the purposes of comparison, the indicators included were identical in both questionnaires (where it was possible). Part of the indicators included treats the problems and different aspects of the online learning during the second year of the pandemic, but it also included indicators that offered the possibility to compare both academic years. The full report of the research results has already been published online (Getova 2021).

3. Main Hypotheses

The first main hypothesis is that both students and lecturers consider the online approach to have some advantages that could facilitate the digitalization of education in general. At the same time, online learning also has enough disadvantages that make it a less preferable approach than in-person learning, according to both students and lecturers.

The second hypothesis is that both lecturers and students think that in the future, online learning would not disappear with the end of the pandemic but would become a parallel approach to traditional in-person learning.

4. Analysis of the Results

This part of the paper treats only the indicators related to the main hypotheses described above.

First, to answer the question if the actors in the educational process consider the changes after the pandemic as permanent, it is important to clarify what are they thinking about the online approach to education and what its big strengths and flaws are, according to students and lecturers. As can be seen in Table 1, both lecturers and students agree that online learning has technical and technological strengths. First, due to the fact that the seminars and lectures are held online, it saves time, as the person doesn't need to travel to the campus. Also, this leads to great flexibility of the agenda because both students and lecturers can have other activities between the classes and after that they can enter immediately in the class (as the online lecture does not require being in a certain location to be present during the class). In that way, their daily program becomes more effective, no matter whether the agenda of the online classes is identical to the ones in person.

The access to the classes from practically every location (if there is an Internet connection) is another big advantage of online learning according to both students and lecturers. It is related to the first; however, the accessibility not only saves times but gives the opportunity for both sides (especially for the students) to participate more actively and more frequently in the educational process, but as can be seen in the analysis below, the accessibility is not enough to increase the students' motivation for active participation in the classes.

Table 1. Main advantages of online learning

	Percentage of Lecturers	Percentage of Students
Saves times from traveling and the flexible agenda	81.8	85.0
It can be reached from everywhere if there is access to the Internet	76.6	80.6
Fast and easy access to learning resources	51.9	61.3
Organizing exams is easier and more comfortable	24.7	36.4
Administrative services are easier to access	27.3	20.9
Overload of the students is lower	2.6	27.3
Students' motivation to participate in the classes is higher	3.9	18.2
Overload of the lecturers is lower	6.5	
I live healthier, because I can eat and sleep more regularly		32.4
There are financial advantages (saving money from rental, etc.)		32.0
<i>There are no advantages</i>	7.8	.0

Source: Getova 2021.

Another big advantage of online learning is the access to easy collection of resources. Both sides in the process accept this as an advantage: the lecturers do, as they can easily give access to and collect resources in one place, and the students can have very fast and easy access to these resources for every course held online. It can be concluded that regarding the organizational and technical aspects of online learning, including the organization of exams and administrative services, the online approach has bigger advantages than the traditional one.

Regarding the more personal aspects of the process, such as motivation, stress, and desire to participate actively, it can be seen that neither the students nor the lecturers consider that the factors offered by online learning lead to particularly higher motivation by both students and lecturers. Twenty-six percent of the lecturers mention that the accessibility leads to increasing number of students that enter the classes; however, less than 5% of them think that the motivation of students to participate in the class is bigger during online learning. The percentage of students that agree with the statement that their motivation is higher is 18%, i.e., significantly bigger than the respective share of lecturers; on the other side, there are many more students who think that during online learning, motivation of the students actually drops, as can be seen below in this paper.

Forty-five percent of the students also consider it an advantage to be at home during online learning. Some of them even think that this is the healthier way to study, as the flexible agenda and the saved time they can eat and sleep more regularly (in comparison to on-campus learning). While this question was not asked in the lecturers' survey, this factor should be taken in consideration as one of the reasons why the students have a relatively more positive perception for the online learning than their lecturers, as can be seen also in the analysis of online learning disadvantages.

Regarding online learning disadvantages, the students and the lecturers agree that problems with communication in general are the main flaws of the online approach. As can be seen in Table 2, both students and lecturers agree that there are problems in formal communication, but also in the informal communication between them. The problems with the communication are the result of the very essence of the online approach: it is an indirect, technology-based way of contact. That produces feelings of distance and isolation that is accelerated by two main factors. The first one is that according to the both students and lecturers that participated in the survey, the communication during the classes is often technologically restricted only to audio contact or in some cases even to more passive contact as the students enter only as listeners (i.e., they can contact their colleagues and lecturers only by writing in the chat space). The reasons behind this are often problems with the Internet connection or

other technological limitations that can have a grave impact on communication during classes. The lack or the rare presence of cameras also impedes (or practically stops) the nonverbal part of the communication that leads to the feeling that there is no feedback both by students and lecturers. It is important to say that these technological restrictions are not introduced deliberately (or at least, not in all cases); in some cases, they are the product of consequences that both sides in the educational process cannot control. While the share of lecturers that consider the technical limitation of the communication online as disadvantage is bigger than the respective share of students, it can be concluded that a considerable number of people in both groups notice that the technological limitations have a negative impact on the communication during online classes.

The second factor that has a negative impact on the communication, especially on its informal part, is connected to one of the advantages of online learning: the flexible agenda doesn't rely on breaks or more precisely said, the breaks between classes are not intended to be held in the online environment. A difference from the in-person learning, where during the breaks generally the students and the lecturers stay in the same location but in a more informal situation. The breaks in an online class do not require that they continue to stay in the virtual room, so the "natural" informal conversation between lecturers and students rarely happens (this was mentioned frequently in the spontaneous answers in the pilot survey of 2020). While this informal communication is not an obligatory part of the educational process, it is considered as something important as both groups consider it as one of the main disadvantages of the online approach.

It should be mentioned also that both students and lecturers use alternative channels of communication outside the main platform used for the classes, i.e., they don't rely only on their contact during the classes. The most frequently mentioned channel of alternative communication between students and lecturers is email (more than 93% of lecturers and students mentioned it). But email is very indirect approach to communication that cannot compensate for the lack of informal communication between classes.

The lack of informal communication not only between students and lecturers, but also within both groups, is another big flaw of online learning, according to both students and lecturers. Again, this insufficient informal communication with other colleagues could be explained by the "lack" of real world location during the online semester: most of the informal communication of this kind is held on campus in the breaks between the lectures or during some academic or scientific events, but in the online approach, these possibilities of informal communication with colleagues are very limited.

The students were asked if they use some external (to the main educational platform) channel of communication with their colleagues of the same university program. The most popular

channel, mentioned by 82% of the students is some kind of chat channel (Viber, Facebook and others), but while this communication is more direct than the email used for supplementary contact with the lecturers, obviously for the students it cannot compensate for the informal communication that existed in-person.

More than one-third of both students and lecturers agree that the technological dependency of the online approach can be seen not only as an opportunity but also as a disadvantage, as sometimes it is a real obstacle for not having a class (because of poor Internet connections, platform crashes, or other factors).

The motivation of students to participate in the classes is another problem during online education. Again, the percentage of lecturers that share this opinion is significantly bigger than the respective percentage of students, but still, the percentage of students itself is not small. As was mentioned above, most of them do not think that the advantages offered by the online approach would lead to the opposite (increasing motivation to participate), so it is possible that for most of these students, the motivation to participate actively in the classes depends on different factors that are not directly related to the learning environment.

Another aspect in which there are differences between the opinion of the lecturers and students is the attitude to their personal work overload. Only 17% of the students think that their overload is bigger online, while the share of lecturers that think that their own overload is bigger is 62%. The lecturers were also asked for the overload of their students, and it

Table 2. Main disadvantages of online learning

	Percentage of Lecturers	Percentage of Students
Lack of live contact has negative impact on the informal communication	89.6	68.8
For technological reasons, communication online is difficult in general	58.4	34.0
Lack of live contact with other colleagues	58.4	43.9
Overload on lecturers is bigger	62.3	
Having a class during the online learning depends on (and sometimes fails because of) technological limitations	36.4	34.8
Motivation of students to participate in classes is lower	55.8	33.2
Overload on students is bigger	14.3	17.0
Organization of examinations online is more difficult	15.6	16.2
I live healthier, as I spend too much time at home		15.8
Administrative services are more difficult to access	7.8	12.6
<i>There are no disadvantages</i>	<i>0.0</i>	<i>13.8</i>

Source: Getova 2021.

can be seen in Table 2 that most of them do not consider that the students have much more work to do during online learning. It can be concluded that the lecturers estimate that online learning is the more difficult and heavy approach for them, so it is not surprising that they are much more critical of the online approach in general. For example, the average number of disadvantages mentioned by one lecturer in the research is between five and six, while one student mentions only three or four. Students mention many more advantages of online learning: the average number is five, while the lecturers notice only three. Also, almost 14% of the students think that online learning has no disadvantages at all. It is a small percentage, but there are no lecturers that share this opinion (the interesting fact is that even in the pilot survey of 2020 there were zero lecturers who thought that the online approach has no disadvantages).

So it is not surprising that only 7% of the lecturers against almost 30% of the students prefer the online approach instead of traditional in-person learning. Thirty-one percent of the students and only 4% of the lecturers think that in the contemporary world, online learning is the better approach. These opinions are connected: the Cramer's V correlation within the group of students is 0.56, i.e. moderate to strong correlation between the preferences to the online approach and the attitude to it; within the group of lecturers, the Cramer's V correlation is 0.49 (moderate); also, in the lecturers' group, those who think that the online approach is better (or not) are more inclined to prefer it instead of the traditional approach. It can be concluded that in general the students have a much more positive attitude to the online approach than their lecturers, so they are much more inclined to accept

such digitalization. However, it shouldn't be estimated that in general most students would prefer to continue to study online in the future in Bulgarian universities, even after the pandemic is over, a difference from their lecturers who are in general more critical toward it. First, while the snowball sampling allows clarifying the main tendencies, for such a sophisticated prognosis, a representative sample should be made. Also, even within the actual research study, most students are aware of the limitations of this approach, so they don't consider it as a universal substitute for in-person learning: Fifty-eight of students think that it is suitable only for particular programs and not for others (the share of lecturers who thinks that is 54%). From the spontaneous answers, it can be concluded that programs with a large amount of practical or laboratory classes (chemistry, biology, sports, and others) are considered as problematic to be adapted for online learning according to both lecturers and students. Respectively, 48% of students and 68% of the lecturers think that online learning could not fully substitute for traditional learning, so the conclusion should be that although a significant part of the students prefer or positively accept the online approach, there are also enough of them who think that for various reasons, online learning still cannot be a real substitute for traditional in-person learning.

Last but not least, what do the actors think of the future of online learning? Would it continue to be applied in the Bulgarian universities even after the pandemic is over or it is considered more like an emergency measure that could disappear after the pandemic?

As can be seen in Figure 1, there is again a significant gap between students' and lecturers' opinions.

In your opinion, what would be the future of online learning in Bulgarian universities?

Figure 1. The Future of online learning.
Source: Getova 2021.

While being more critical of the online approach and its flaws, the lecturers consider that the change in the higher education in Bulgaria had already begun, as less than one-quarter of them think that after the pandemic things would revert to the way they were before the pandemic. Most of the lecturers think that education would change permanently: 65% suppose that there would be some hybrid variant and not online learning only, but still it can be concluded that, according to them, the permanent change of the educational system is already happening, no matter whether they like this change or not.

The students' opinions on this topic are divided, as can be seen in Figure 1. First, the students' approach to the crisis is obviously more optimistic than that of the lecturers, as almost 40% of them think that after the pandemic the situation would become as it was before this. At the same time, there is also significant number of them that accept that in the future some mixed approach would be used. The interesting thing is that there is a group of 24% that are full supporters of online education (they think it would dominate the future of Bulgarian universities).

The Cramer's V coefficient shows weak correlation between the opinion of the students about the future and their preferences towards the online approach, i.e., it can't be concluded that their preferences toward online learning are the main factor for their insights for the future of the educational system.

It is also interesting that despite the fact that generally the students are less critical of online education and there are enough of them who even prefer this form, they are not so sure that it is the future of the educational system or even that the educational system would permanently change in this aspect (even toward some hybrid approach). The explanations for this opinion lie beyond the purposes of this paper; according to the results of this survey, it can be concluded only that the students would adapt faster and more easily to more digitalized education, as they in general have a more positive opinion about it than their lecturers.

5. Conclusion

The first general conclusion of the analysis is that both students and lecturers appreciate some technological advantages of online learning because of its flexibility and accessibility and the opportunities that it gives to collect and access educational resources, which is a confirmation of the first hypothesis of the analysis. However, if we talk about more personal aspects of the process, especially the communication between students and lecturers, both groups consider this as one of the big flaws of online learning, especially regarding informal communication.

While a significant number of students and lecturers think that online learning cannot be a full substitute for the traditional approach, most of them (and especially most of the lecturers) think that the future of higher education will be more digitalized; more likely after the pandemic some hybrid approach of learning will be used. There is also a gap in the opinions of students and lecturers regarding the online approach: the lecturers are more critical, while the students have relatively a more positive attitude to it.

Generally, the situation in Bulgarian higher education is still unclear as the pandemic continues. As was mentioned above, even during the actual academic year, online learning has been the dominant approach in most Bulgarian universities, at least for the first semester. To analyze the future of the possible digitalization of education, it is necessary to conduct a new wave of the survey for the next academic year, which is a desired purpose of the authors on the team.

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