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# HIGHER EDUCATION IN A PANDEMIC: GLOBAL IMPLICATIONS BASED ON A CASE STUDY FROM BULGARIA

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**Abstract.** The COVID-19 pandemic has posed an ultimate challenge affecting all areas of human activity. Higher education had to respond by revealing its potential to adapt to and tackle the negative effects of the crisis so as to keep the quality of academic education and research. This critical situation served as a litmus test for HEIs readiness to face and manage crises. The potential of such experience is considered based on the authors' experience as well as on a survey including HEI stakeholders and revealing their attitudes and perceptions on their work in the pandemic. Global implications are made about educational opportunities and benefits.

*Keywords:* higher education; pandemic; strategic planning in education; higher education institution; HEI; crisis in education

## Introduction

The COVID-19 pandemic presented an unprecedented challenge to the world and faced every individual and country with problems they could never have conceived of before. The repercussions are still to be felt, perceived and given careful consideration. With all areas of socio-economic life affected, higher education was challenged to adapt and cope with the negative effects in order to ensure education and research quality. Every higher education institution (HEI) had to take measures to prevent its students, faculty and administration from contracting the virus as well as to keep academic and research activity going on following the timetable as much as possible. In general, these measures are similar worldwide but they also depend on the countries where these HEIs are for they have to observe local regulation and academic autonomy.

We assume that the pandemic could be seen as a litmus test for the HEIs readiness to cope with crises, to implement novelties and to be flexible. Among the key points dealt with in the article are the impact of COVID-19 on academic activity in

all its aspects, the perceptions and attitudes of the stakeholders, the results from the first two online semesters the particular university achieved and the challenges it had to respond to. In order to provide in-depth insight into the local circumstances, the authors conducted a survey with students, lecturers and administrative staff. The empirical data gathered are of both quantitative and qualitative nature and ensure the validity of the authors' observations as well as the viability of the recommendations given. Thus, by combining theory with practice we hope to provide a platform for a fruitful discussion and, ultimately, to facilitate the implementation of good practices worldwide.

It should be noted that like every formidable and unprecedented challenge, COVID-19 provided new opportunities. A lot of objective global processes that have been going on for a long time have accelerated in this situation. Changes that have been postponed are now on the agenda. The most important among them are the need for strategic planning and technological changes in education.

Strategic planning techniques are not novel to higher education and have been implemented in this field since the 1970s (Moran 1985). However, the crisis revealed that procedures established in practice have been used in Bulgaria, but no genuine strategic thinking has been applied. University managements in Western Europe and the USA adopted strategic planning from the business in order to cope with critical situations. After the end of WW II, universities had enough resources and students to survive even without any special managerial efforts. However, in the 1970s, the situation changed. State financing for higher education plummeted. Inflation processes exhausted the already limited university budgets. The demographic models in western societies also changed resulting in the decrease in the number of the population aged 18 – 22. Universities had to compete for resources and students. Thus the adoption of strategic planning became a must in those conditions. Strategy helped universities in two directions: to respond adequately to the changes in society and to coordinate all available resources in order to achieve their goals. The change was remarkable for universities have established a reputation for being conservative institutions. In the new situation, university managements must not only understand historical processes, but also anticipate them in order to spot favorable opportunities and eliminate threats. As an institution, the university ceased to be a passive observer and became an active participant (Keller 1983, 143 – 144).

In these times that were critical for western universities, the situation in the countries from the former socialist camp, including Bulgaria, was quite different. In the conditions of centralised planning and dominant communist ideology, there were no freedom and pluralism in universities. There were no survival threats either. For Eastern European universities, the first acute crisis they were faced with was in the 1990s when the former socialist countries had to make the transition to market economy and democratic society. It is in that period that Bulgaria adopted

strategic planning in both business and higher education. From a historical point of view, this is a short period and the profound consideration of strategic management and planning in Bulgarian universities is yet to be given.

The country is in a process of harmonisation of the domestic law of the Republic of Bulgaria with the law of the European Union. Recent legislative changes in the field of higher education have significantly changed the work environment. These changes are aimed at the reasonable spending of public taxpayers' money on education in HEIs. (Andreeva & Dimitrova 2021). One of the key control mechanisms is the procedure for strategic planning. For instance, every state HEI develops and adopts its own strategic goals, tasks and indicators for their implementation and the minister of education and science approves of them. In addition, the minister concludes a management contract with the rector of the state higher education institution and controls the contract implementation (Law for amendment and supplement of the Law for the higher education, promulgated SG, issue 17 of 25.2.2020).

It should be noted that these legislative changes are not unambiguously perceived by the general public. It is clear that government control limits academic autonomy, but the COVID-19 pandemic has shown both public authorities and faculty and administrative staff at state universities that they have common goals.

These processes are typical of state HEIs, but they affect private universities as well. Private universities do not use public funding and are therefore not subject to direct administrative control by the state. Nevertheless, the general regulations on education apply to them as well. In Bulgaria, most universities are state-owned. The private ones follow the general trends set by them in order to be competitive on the market for educational services.

Whether administrative resources are required or the result of market competition, a strategic planning approach is a leading management tool in higher education. The COVID-19 pandemic pinpointed the need to use this tool more effectively.

**Online academic and scientific activity at UNWE**

In the middle of March 2020, emergency measures were introduced in Bulgaria by the government. They involved online education at schools and universities and were confirmed with respective ordinances of the minister of education and science and of the university rector. To protect the health of academic staff, mobility exchanges were cancelled or postponed and scientific events were either cancelled or postponed, or held online.

***Academic activity during the pandemic***

Academic activity involves the following stakeholders: administrative staff, faculty staff and students. All of us had to switch to online education overnight. This was a serious challenge because the university IT specialists had to choose

a platform for communication and work, prepare instructions for faculty staff and administration as well as to reorganise in order to provide almost non-stop assistance related to technical glitches and issues. Secretaries and inspectors had to follow a schedule involving work from home and work at the university in order to minimize the risk for COVID-19 contraction. They had to spend more time organising their work online. On the other hand, due to the specifics of some activities, it was possible to perform them at the university only, which required more efforts in terms of reorganisation. Furthermore, online communication may not be as effective as face to face contact for in some cases a number of messages is needed compared to a short conversation with the respective colleague or student. Another challenge is the fact that there are many people, including university staff, who belong to the so-called group of digital immigrants (Baby boomers, Generation X and the Xennial generations) and do not appreciate the mediated contact as much as digital natives (Millennials or Generation Y and Generation Z) (Prensky 2001).

Academic staff was faced with daunting challenges as well. First, they had to familiarize with the platform for online education within a day or two depending on academic timetable. This meant that lecturers had to become familiar with the platform functions in terms of classwork, assignments, feedback, assessment, consulting and tutoring. They were also the first to provide assistance when students could not join a class or when they had difficulty submitting a task or sharing their screens to make presentations, for example. The next challenge involved the reorganisation of academic work in order to ensure the smooth educational process. Materials had to be adapted, adjusted or prepared in accordance with the new circumstances. This meant to prepare presentations, to prepare files with case studies and unfamiliar words, to think of new forms of assessment preventing cheating and contributing to objectivity in an electronic test and examination environment.

Staff meetings were held online which required a way of organisation that differs from the traditional face-to-face one, especially when a voting procedure is part of the agenda.

Although students belong to the group of digital natives and have a flair for the new information and communication technologies, they were faced with challenges as well. Surprisingly, many of them had difficulties joining e-classes or submitting their tests. Often there was someone clicking on the submit button instead of clicking to go next and continuing doing the exercises on the next page. Others could join the online class but with no sound, so the only option to participate was by sending messages. For young people accustomed to active participation in classwork this was both a challenge and confusion. On the other hand, it was a drawback that decreased course effectiveness. Although students have more than one device with an Internet connection, there were problems when they had to write a document because it was impossible to create a Word file or to attend classes with

cameras using some devices due to their features. However, a positive result from e-education was the fact that it was no longer possible for students to apologise for being absent from a class because they were at work or away from town. The same applied to homework and forgotten textbooks.

All three groups of stakeholders were affected by the postponement of international mobility exchanges, summer schools and seminars organised by academic institutions worldwide. These initiatives have a long-standing reputation for their contribution to intercultural and professional experience as a valuable source of good practices and novelties as well as of personal improvement and motivation. In this respect, each of the groups had to resort to their resourcefulness in order to find substitute forms for the postponed events.

***Scientific activity during the pandemic***

Scientific activity is usually associated with faculty staff for they are the ones involved in projects, supervision, scientific activities such as research, development, publications, attendance of professional events. As long as it does not involve travelling, it was not seriously affected by the emergency measures restricting our common daily routine. However, based on the feedback we received, the mediated contact via social media and e-platforms for communication and work does not seem to be as effective as face-to-face participation and exchange. At conferences, workshops and summer schools, for instance, attendants make contacts they cannot make otherwise. Furthermore, coordination with administrative staff is less effective for it is more time-consuming and involving more meetings and emails related to arrangements and clarification of details. On the other hand, not having to travel to work and working from home provided more time for research and greater focus on publication activity. Another advantage is the opportunity to pay more attention to networking with colleagues worldwide and discussing issues of scholarly interest.

**Survey on stakeholder attitudes to online university activities**

In order to establish if our observations and experience are similar to those of the other members of our group as well as to the ones of the other groups of stakeholders, we prepared and conducted an online survey. It was intended to collect quantitative and qualitative data and provide detailed information about stakeholder attitudes to online university activities based on the participants' personal experience. The survey was conducted in Microsoft Teams. The number of the respondents from the University of National and World Economy is 203 of which 139 students, 13 administrative staff and 51 faculty staff. With the exception of question 21 which refers to the preferred form of education and question 27 which refers to the respondent's position, all other questions are answered with a five-point Likert scale of the type agreement-disagreement: "Strongly agree", "Agree", "Neither agree, nor disagree", "Disagree", "Strongly disagree". The results from the survey are presented in tables 1 and 2 (Appendix 2).

As Cronbach's α criterion shows, the questionnaire reliability is good. Since the questions are numerous, there are practically several questionnaires. Respectively, the criterion is applied separately to each thematically related group of questions, for instance, from question one to ten; questions 24, 25 and 26, etc.

The final results are very interesting. First of all, it turns out that there are not many questions in which there is a statistically significant correlation between the answers and the role in the educational process (student, teacher, employee). This correlation in question is established by Pearson's chi-square test. This means that all three groups of respondents responded in a similar way. This is not an expected result.

There are statistically significant differences in the answers to the following questions:

**Question № 2:** Obviously, online learning does not take students more time for preparation.

**Question № 6:** According to the students, there are no significant disadvantages in terms of assessment. Lecturers, however, disagree. It is interesting to find out whether this is because of lecturer suspicion or because of more serious reasons.

**Question № 13:** Unlike lecturers, students do not think that online learning hinders international cooperation and mobility. Most probably, the reason for this is the fact that students are mostly involved in mobility programmes such as "Erasmus" and "Erasmus +" which are not affected by the form of education.

**Question № 15:** This question corresponds directly to question № 6 and the answers are similar.

**Question № 21:** An interesting phenomenon is observed here - the majority of the lecturers are firmly in favour of hybrid education whereas the students are divided into two comparable groups: one for online education and done for face-to-face education. Obviously, from the students' point of view, face-to-face education has advantages that online education lacks. Probably, hybrid education is not that attractive to them because of the sharp transition from entirely face-to-face education to entirely online education. They have no experience with hybrid forms and are skeptical. Very often, such hybrid forms do not combine the advantages but rather the disadvantages of their components. One of the challenges to face is designing truly hybrid forms that take into account the experience from both forms.

In all other questions, all three groups did not differ significantly in their answers. Unfortunately, the number of responding administrative staff is small in absolute terms and does not allow sound conclusions based on Pearson's chi-square test – in many of the cells in the crosstabs, the number of administrative staff does not reach the required minimum number of five observed cases.

The study of the correlation between the answers to the questions leads to the idea of applying more precise statistical procedures such as factor analysis (Kahn

2006). The results of the Kaiser-Mayer-Olkin test for sample adequacy and Bartlett's test for sphericity are presented in Table 3, Appendix 2. The numerical values of the test results and the significance level show that the sample is adequate and factor analysis is applicable.

The graph of the relationship between the Eigen values and the number of factors shows that the appropriate number of factors is two (Figure 1, Appendix 2). In fact, we have opportunities for much more due to the diverse type of questions included in the questionnaire. However, the graph reveals that the presence of more than two variables does not significantly change the explanatory power of the model - after two factors the graph becomes sloping. The table for analysis of the total variation shows that the first two factors explain over 40% of it. This is not a high value, but all the following factors explain less than 5% of the variation. Therefore, two factors is the optimal number.

The values of the **(component)** matrix show that questions 1, 4, 6, 15 and 16 refer to the first component and numbers 24, 25 and 26 to the second component (to some extent question 23 as well). The answers of the respondents give us a reason to interpret the first component as challenges for e-teaching and assessment, and the second – as general advantages of e-teaching. Based on the research data, we can expect that the main stakeholders in the educational process - students and lecturers, will evaluate modern educational systems mostly in terms of the challenges – opportunities dichotomy. Through the prism of strategic planning, this is the part of the matrix for SWOT analysis (strengths and weaknesses, opportunities and threats), designed for environmental analysis. The main challenges perceived are the difficulties for the organisation of a complete educational process, effective teamwork and adequate assessment in a digital environment. Accordingly, physical safety and good prerequisites for work optimisation and satisfaction are assessed as opportunities to work online. It is likely that the formulation of the challenges by the respondents in this way and the emergence of the concept of satisfaction in the second component were influenced by a significant circumstance. Due to the crisis nature of the migration from a university from “bricks and mortar” to online work in the virtual space, there was not enough time and possibilities for complete adjustment of educational content for online use. Modern information and communication technologies have been used to present mainly curricula designed for classical face-to-face education. It can be assumed that lecturers intend to use more modern forms of presentation of educational content and that is why they consider the combination of face-to-face and online education optimal. For their part, students are not satisfied with the online use of classical syllabi and are divided into supporters and opponents of e-education without appreciating the possibilities of hybrid education. This means that there are considerable challenges prompting serious work in the future.

**Global implications**

Based on our personal observations and the survey findings, we can make several implications related to the response of universities to a crisis. Although they are related to the stakeholders in a particular state-owned academic institution in a given country, they could be taken into consideration by both state and private HEIs because the nature of our recommendations is not related to funding but rather to work organisation and optimised management. We, therefore, hope that if considered when planning strategically, our study could contribute to substantial improvement in higher education products worldwide.

In terms of the academic activity related to the educational process, it can be recommended to promote the hybrid form among students in order to help them see its advantages. It will allow for modern courses including interaction, exploration, relevancy, multimedia and instruction (Windham 2005, 5.1-5.16) and authentic assessment (Taylor and Parsons, 2011) that provide greater student engagement. From a strategic point of view, this can be seen as the first tactical step to the introduction of effective optimisation based on modern technologies. The next step can be the development of course syllabi especially designed for this educational form because during the pandemic crisis we have been using syllabi designed for the face-to-face form and faced the negative effects of this. This step includes the allocation of lecturer time for syllabi preparation and the introduction of academic stimuli for the lecturers involved.

As far as assessment is concerned, measures must be taken for the prevention of cheating and for the provision of the same degree of objectivity that students have when they have face-to-face exams. Some of these measures are of technical nature, but others depend on lecturers and universities' willingness and efforts to ensure the use of modern test programmes and forms as well as the introduction of novel teaching approaches. Other measures must be focused on raising student awareness of the benefits of the new forms and of enhanced performance based on cheating avoidance and diligence.

Academic functioning can be enhanced by taking advantage of online work. This can involve the introduction and improvement of e-services related to paperwork, submission of scientific projects, staff assessment. Thus all stakeholders will benefit from university routine optimisation and will be able to focus on research and development, tutoring, publication activity. Needless to say, it is cost- and time-effective and in times of crises contributes to the well-being of students and administrative and faculty staff. In addition, students are provided more options for attendance of educational forms such as lectures, seminars, workshops, scientific events given the fact that a great number of them work or prefer to spend more time in their home places. Furthermore, lecturers can avail of the additional time for publication and scientific activities.

Unfortunately, mobility involves physical movement form one place to another and it seems impossible to compensate this by offering another opportunity similar in rationale. It is hardly possible to become familiar with the particular university, country, students, lecturers, educational system. Similarly, it is difficult to say that the effect of e-scientific events is the same as with face-to-face ones. However, a tradition can be established for the regular organisation of such events in order to take advantage of the opportunity to attend and participate at all. When the world goes back to normal, it should be stimulating to consider the provision of both face-to-face and e-events for this way faculty staff and students will be able to take part in more events not only because of time and resources, but also because they will begin to appreciate the benefits of the new form and, ultimately, of the hybrid one with regard to cooperation and professional networking. Furthermore, educational stakeholders will not have to bother about participants' health and additional stress caused by the current or similar future situation.

## APPENDIX 1

### Survey on stakeholder attitudes to online university activities

1. E-classes are more effective than face-to-face ones.
2. The preparation of e-classes takes more time.
3. Online classes prevent direct contact with all students in the group / stream.
4. Compared to face-to-face classes, e-classes are not so effective in terms of team work.
5. Compared to face-to-face classes, e-classes are not so effective in terms of assignments check.
6. Compared to face-to-face classes, e-classes have distinct disadvantages in terms of assessment.
7. Online classes require significant adaptation of students.
8. Online classes require significant adaptation of lecturers.
9. Online classes require significant adaptation of class materials.
10. Online classes require significant adaptation of tests and other forms of performance check and assessment.
11. E-classes cause lecturers/students health disturbances (anxiety, eye pain, headache, swelling, etc.).
12. Online work has had a positive effect on my research work (publications, conferences and professional contacts with colleagues).
13. Online work hinders international cooperation on mobility.
14. Participation in online scientific events (conferences, meetings, visits, seminars, workshops, etc.) is the same as face-to-face participation.
15. E-exams are as objective as face-to-face exams.
16. Participation in online educational events (visits, practical seminars, public lectures, etc.) is the same as face-to-face participation.

17. Will lecturers ever be replaced by computers?
18. Electronic environment allows less serious and regular students show better results than honest and regular students.
19. E-work hinders international cooperation on the execution of international projects.
20. Do you think that distance learning will replace traditional learning?
21. Which view of both forms of education (face-to-face and online) do you support:
– Face-to-face education is better than online education in every respect
– I find online education more convenient
– I think that the combination of both forms leads to better results
22. Online administrative work is less stressful.
23. The functioning in electronic environment increases my workload.
24. The combination of face-to-face and online work brings optimisation.
25. The combination of face-to-face and online work makes me less worried my health.
26. The combination of face-to-face and online work brings greater satisfaction.
27. You are: a student 139
administrative staff 13
faculty staff 51

## APPENDIX 2

**Reliability Statistics**

**Table 1.** Cronbach's α for questions 1 – 10

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|---|---|---|
| ,735 | ,734 | 10 |

*Source*: Authors' own calculations

**Reliability Statistics**

**Table 2.** Cronbach's α for questions 24, 25 and 26

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|---|---|---|
| ,818 | ,819 | 3 |

*Source*: Authors' own calculations

**KMO and Bartlett's Test**

**Table 3.** KMO and Bartlett's Test

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | ,883 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 2146,902 |
| | df | 300 |
| | Sig. | ,000 |

*Source*: Authors' own calculations

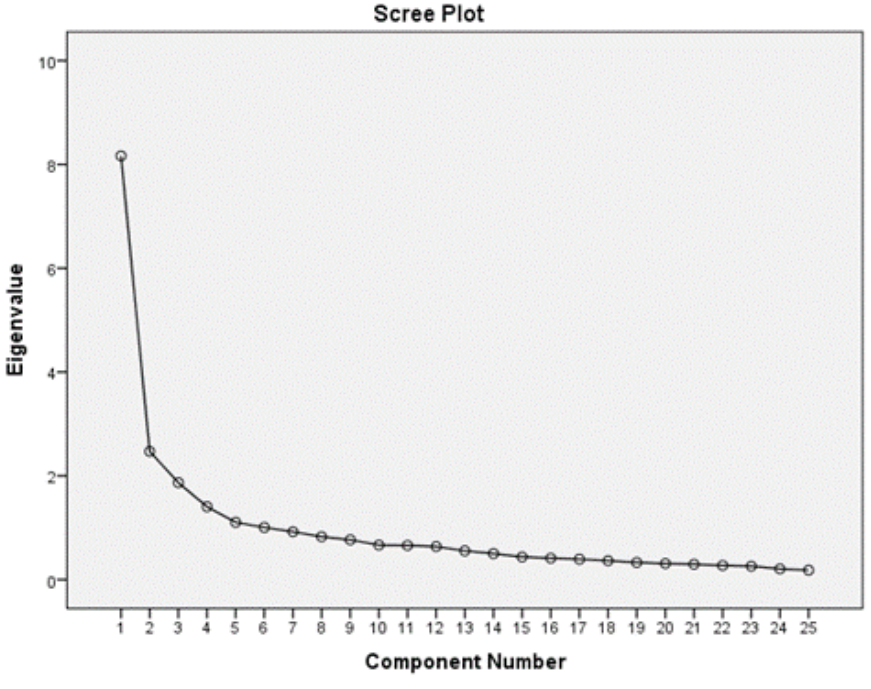


**Figure 1.** Relationship between the Eigen values and the number of factors
*Source*: Authors' own calculations

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