

Higher Education Students and COVID-19:

CONSEQUENCES AND POLICY IMPLICATIONS

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PART1

The Impacts of Covid-19 on the Life of HE Students in Europe: Academic, Social, Emotional, Financial Aspects and Observed Policy Responses



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1. Introduction

In just a few months, the COVID-19 pandemic caused by the novel coronavirus has radically transformed the lives of people all around the globe, including higher education students. Apart from the devastating health consequences for those directly affected by the virus, the pandemic holds major implications for the way higher education students live and work, in turn profoundly affecting both their physical and mental health. To capture the immediate economic and social effects of this crisis, the University of Ljubljana, Faculty of Public Administration (along with international partners) launched a large-scale on-line survey across the world between 5 May and 15 June 2020. Entitled "Impact of the COVID-19 Pandemic on the Life of Higher Education Students", the on-line questionnaire targeted higher education students, asking what student life looked like during the pandemic, including teaching and learning, social contacts, as well as how students were coping with the situation emotionally in different parts of the world. A global comparative analysis may assist the creation of the best recommendations for policymakers and higher education institutions on how students can be supported in such crises in various environments like economic, social, cultural, political and institutional (see Aristovnik et al., 2020a, 2020b, 2020c).

2. Data and Methodology

The data of this report were obtained through a web-based comprehensive questionnaire composed of 39 mainly closed-ended questions. The questionnaire covered socio-demographic, geographic and other characteristics as well as different aspects/elements of higher education student life, such as academic on-line work and life, social life, emotional life, personal circumstances, changes in habits, the roles and measures of institutions as well as personal reflections on COVID-19. By 15 June 2020, 31,212 students had participated in the survey, coming from 133 countries and 6 continents, with 308 students not reporting their country information. The response rate was 33.1% (31,212 out of the 94,246 who opened the link). In the next step, we focused on those countries with at least 30 or more respondents. Accordingly, the final sample consists of 30,383 students from 62 countries. The participants were also grouped into six continental subsamples, namely Africa, Asia, Europe, North America, Oceania and South America. In order to improve the quality and analytical strength of the survey data, data weighting was applied. We used post-stratification weights based on combinations of demographic characteristics (like gender, age, level of study, field of study). To allow a comparison of different countries and continents (or other geographical areas), we used population size weights (see Aristovnik et al., 2020d).

3. The Case of Europe

Academic Work and Life

In order to reduce the spread of the novel coronavirus, universities around the world moved quickly to transfer various courses from on-site to on-line, with on-line learning (e-learning) thereby becoming a mandatory teaching and learning process of educational institutions. In Europe, 86% of students respondents reported the on-site classes had been cancelled due to the COVID-19 pandemic, with the most dominant form of on-line lectures being videoconferences. Regarding the students' academic life, we were interested in: (1) the availability of all the home infrastructure required to study efficiently; and (2) the students' self-reported computer skills. The results show that 86% of student respondents from Europe had access to adequate electronic equipment, placing Europe alongside other developed economies, namely North America (94%) and Oceania (96%). Moreover, a good Internet connection as a prerequisite for on-line learning was emphasized by 68% of students from Europe, which is similar to North America (71%) and Oceania (70%). Yet, students reported not having regular access to printers and study materials. In the next step, the students were asked about their confidence in their computer skills. In response, 53% students from Europe reported feeling confident in using on-line teaching/collaboration platforms, which is similar to students from South America (49%) and Asia (45%). While Africa (25%) achieves its lowest level here, Europe still lags significantly behind North America (74%) and Oceania (82%). As concerns the students' satisfaction with the support of teaching and support staff, regardless of the continent, the results show the students were most satisfied with the support of the teaching staff; overall, 58% of students were satisfied or very satisfied. The highest satisfaction is observed for Oceania (80%) and North America (68%), followed by Europe (58%), South America (56%) and Asia (52%). Again, lowest satisfaction is observed in Africa (33%). Finally, the students were asked to compare their workload before the on-site classes had been cancelled with the new, post-lockdown circumstances. The comparison reveals the biggest increases in workload in Europe (58%) and Oceania (60%) and the smallest in Asia (37%) and Africa (35%).

Social Life

The loss of one's usual daily routine as well as reduced social and physical contact with others (including the social-distancing measures) can hold serious consequences for social life. As regards social life, students were asked about the frequency of their on-line communication with specific people during the COVID-19 pandemic. In our survey, students were asked how often they had communicated on-line with certain people during the pandemic. On the global level, students communicated on-line at least once a day with: (1) close family members (52%) – primarily the Asian and European students; (2) someone they live with, e.g. a roommate (48%), as mainly reported by students from Oceania and North America; or (3) relied on social networks (46%) – mostly students from South and North America. The least frequent are on-line communications with administrative staff at the university (3%) and voluntary organizations (4%); in both cases, the lowest shares are detected in the two Americas. Moreover, students would first turn to the following social groups to talk about the COVID-19 crisis: A close family member (45%), someone they live with (e.g. a roommate) (29%), a more distant family member (6%), a close friend (5%) etc.

Emotional Life

The COVID-19 pandemic has heavily influenced the emotional well-being and thus mental health of people all over the globe, either directly in terms of health issues or indirectly in relation to its economic and social consequences. On the global level, the frequency of positive emotions felt by the students since the outbreak of COVID-19 was as follows: Hopeful (40%), joyful (30%), proud (27%), relieved (17.9%). The negative emotions experienced by the students were boredom (45%), anxiety (40%), frustration

(39%), anger (26%), hopelessness (19%), and shame (10%). In this context, the most common emotions felt by students in Europe were negative, namely anxiety (49%) and frustration (48%). This puts Europe alongside other economies with relatively high levels of anxiety and frustration: South America, Oceania and North America. In contrast, while analysing positive emotions, students in Europe did not feel positive emotions to any noticeable extent like for example students in North America, who appeared to be the most joyful, and students in Asia, who appeared to be the most hopeful.

Financial Aspects

The COVID-19 pandemic has given students many different worries. In Europe, the most common worries of the students concerned studying issues and future professional careers. Although the students from Europe were not as worried about personal finance as, for example, their counterparts in Africa, they found the emergency support for the vulnerable population very important. Further, while exploring the role played by different institutions (i.e. government, universities, banks, hospitals), we asked how satisfied the students were with their responses during the lockdown period of COVID-19. In Europe, greatest student satisfaction with the role of institutions was seen for hospitals (66%) and universities (53%). Still, European students were not so satisfied with the role played by the government (45%) and banks (33%), a finding especially comparable with the results for North America and South America. However, this is not surprising as many citizens (including students) generally do not trust their governments and banks (see Eurofound, 2020), despite both institutions having responded by offering extra support to both citizens and businesses during the worst of the COVID-19 pandemic.

4. Conclusions and Policy Recommendations

In this report, we briefly presented selected results of the most comprehensive and large-scale study to date on how students perceive the impacts of the first wave of the COVID-19 crisis in early 2020 on various aspects of their lives on the global level (see Aristovnik et al., 2020a). This report is especially focused on a comparative perspective with a view to placing Europe in a wider global context of higher education. In general, we found that teaching staff offered students the most important support at the university during the pandemic. On the other hand, the lack of computer skills and the perception of a relatively higher workload prevented students from perceiving a higher performance while adapting to the 'new normal'. During the lockdown, students chiefly raised concerns about their future professional careers and study issues and were mainly anxious and frustrated. Finally, while the role of both hospitals and universities appears to be positive, governments and banks did not meet the students' expectations during the pandemic. Accordingly, policymakers on all levels should provide investments in digital literacy and infrastructure, while education institutions should provide flexible delivery methods, digital platforms, and modernized user-friendly curricula to both students and teachers. All authorities involved in higher education systems and the well-being of students as an extremely important segment of the population should prepare a set of proactive measures in the higher education arena so as to ensure the proper support for students and their healthy development in these ever-changing circumstances caused by the pandemic.

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PART2

Covid-19 and Selected Aspects of Higher Education Policy – Case of Slovenia

7/29



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1. Introduction

Like other countries around the world, Slovenia is not immune to COVID-19. The first case of COVID-19 was confirmed in the country on 4 March 2020 and soon afterwards, on 12 March, the Slovenian government also officially declared an epidemic (Government of the Republic of Slovenia, 2020a), bringing Slovenian society to a standstill. At the same time, the national emergency response plan for COVID-19 was activated and various measures to curb the spread of COVID-19 were implemented (EICS, 2020). By acting rapidly, the Slovenian government limited social contacts to the greatest extent possible in order to stem the spread of COVID-19 infections in the most effective way and to keep the health system operational. General measures related to banning public events and gatherings, workplace closures, stay-at-home restrictions, restrictions on domestic and international transport, testing and contact tracing, and shutting educational institutions down (Aristovnik et al., 2020a; Deloitte, 2020). Similar to other countries around the world, the Slovenian government decided to close all school facilities on 16 March 2020, although some institutions had already suspended personal attendance some days prior. The aforementioned led to the rapid transition from on-site to on-line study, bringing many challenges to higher education institutions as well as students.

As one of many responses to the first wave of the COVID-19 pandemic, the Slovenian government adopted several measures influencing the universities and their students (Government of the Republic of Slovenia, 2020b): 1) higher education institutions could make changes to the mandatory obligations of study programmes, becoming effective immediately; 2) students unable to meet their obligations by the set deadlines because of the exceptional circumstances were given the right to extend their student status to the next academic year; and 3) all full-time students with a residence in Slovenia received a crisis bonus of EUR 150 before 30 April 2020.

2. Data and Methodology

The presentation of the Slovenian case is primarily based on two surveys conducted during the first wave of the COVID-19 pandemic. Both surveys examined the opinion of Slovenian students regarding the impact of the COVID-19 crisis on their lives. First, comprehensive data for Slovenia were obtained via the large-scale on-line survey "Impact of the COVID-19 Pandemic on the Life of Higher Education Students" launched by the University of Ljubljana, Faculty of Public Administration (with international

partners) (Aristovnik et al., 2020b). The on-line questionnaire was open from 5 May to 15 June 2020 and targeted higher education students – on what student life looked like during the COVID-19 pandemic, including teaching and learning, social contacts, as well as how students had coped with the situation emotionally in different parts of the world. Accordingly, the web-based comprehensive questionnaire composed 39 mainly closed-ended questions, covering socio-demographic, geographic and other characteristics as well as different aspects/elements of higher education student life, such as academic on-line work and life, social life, emotional life, personal circumstances, changes in habits, the roles and measures of institutions as well as personal reflections on COVID-19. This survey involved 1,049 students (Aristovnik et al., 2020c). Second, the findings of the mentioned survey are supplemented with a survey conducted by the Slovenian Student Union between 30 March and 5 April 2020. The main aim of this survey was to determine the general opinion of Slovenian students about the on-line learning established in response to the pandemic. The survey involved 1,091 students from various higher education institutions in Slovenia (Slovenian Student Union, 2020).

3. General Observations for Slovenia in Comparison with Other Countries

According to our survey, 86% of students in Slovenia reported that on-site classes had been cancelled due to the COVID-19 pandemic, whereby the remaining 14% already had on-line study before the lockdown. The transition from on-site to on-line study was quick and not much time was available to properly consider the organization of the new forms, noting that the quality of teaching and learning in these new circumstances needs proper attention (Aristovnik et al., 2020a). The aforementioned holds significant implications for students' academic life and work. Nevertheless, the Slovenian students were very satisfied with the organization of the on-line lectures. They were also very satisfied with the support provided by the teaching staff. However, almost two thirds (62%) of students perceived a larger or significantly larger workload (Aristovnik et al., 2020d). These results are in harmony with the Slovenian Student Union survey, revealing that Slovenian students are quite satisfied with the overall implementation of on-line study. In addition, the students emphasized that on-line study is less effective and less productive than on-site study, supplementing our findings that many students had reported an increased workload in the new learning environment (Slovenian Student Union, 2020).

As far as students' emotional life is concerned, our survey results suggest that almost 2/3 (62%) of Slovenian students were often or always joyful. Still, less than 1/5 (16%) of students were never or rarely frustrated (Aristovnik et al., 2020d). Compared with other countries included in our survey, the COVID-19 pandemic had not so heavily influenced the emotional well-being and thus mental health of Slovenian students since they felt more positive than negative emotions.

In terms of students' financial situation, our survey results reveal that almost 2/3 (63%) of Slovenian students did not have financial problems paying the overall costs of the study before the COVID-19 pandemic. One reason for the relatively high percentage of students without financial problems might be the relatively big share (almost 1/3 or 31%) of students reporting being in receipt of a scholarship (Aristovnik et al., 2020d). However, the Slovenian Student Union's survey findings show that 49% of students reported being worried about paying the typical costs of study during the first wave of the COVID-19 pandemic (Slovenian Student Union, 2020).

Moreover, when coping with all the challenges, students built their opinions on the role of different institutions, linking it with the solving of unprecedented situations (e.g. government, universities, banks, hospitals). As regards the role played by institutions,

Slovenian students were very satisfied with the response of hospitals and universities. Yet, despite having provided measures in an attempt to facilitate life during study, governments and banks had not met the students' expectations during the pandemic (Aristovnik et al., 2020d).

Finally, our survey findings also show that students with certain socio-demographic characteristics (male, part-time, first-level, applied sciences, a lower living standard) were significantly less satisfied with their academic work/life during the crisis, whereas female, full-time, first-level students and students faced with financial problems were generally affected more by the pandemic in terms of their emotional life and personal circumstances (Aristovnik et al., 2020a).

4. Conclusions and Policy Recommendations

The complete transition from on-site to on-line study for higher education institutions undoubtedly entails a major challenge. Since higher education institutions were left only with general guidelines proposed by the government, they largely had to organize on-line study independently in a very short time. In this context, it is worth stressing that teaching on-line is not simply putting learning materials on-line. Lecturers must organize the content and learning methods according to the new mode of delivery so that students do not feel isolated and alone in the learning process (Aristovnik et al., 2020a). Nevertheless, although the transition from on-site to on-line study was actually an emergency response to the physical closure of higher education institutions, the main goal of avoiding considerable interruption to education was somewhat successfully achieved and students were able to complete the academic year.

Despite the encouraging start to the new 2020/2021 academic year on 1 October 2020 seeing several higher education institutions trying the hybrid learning model, the growing number of COVID-19 cases meant Slovenia went into a second wave of COVID-19, with the Slovenian government declaring a new epidemic on 18 October 2020 (Ministry of Health, 2020). Still, the experiences of the first wave should be considered while preparing policy recommendations. Here, it is important to ensure long-term strategic guidelines regarding the accessibility of remote learning with an emphasis on a safe, stimulative and inclusive educational environment (The Slovenia Times, 2020). The presented Slovenian case calls for public and higher education authorities to closely collaborate with and urgently pay attention to students (especially vulnerable student groups) while seeking to resolve the diverse, mostly negative, consequences of the prolonged COVID-19 measures. Accordingly, higher education institutions should be more flexible and address infrastructure issues and lack of equipment in a proper way, while not overlooking the housing-related challenges of students who live outside of university towns. Moreover, any decisions by government or higher education institutions affecting students and their academic calendar should be communicated promptly. The government or higher education institutions should also provide additional support to vulnerable student groups. Finally, higher education institutions should be prepared to gradually reopen, at least in order to conduct laboratory tutorials and exams.

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PART3

Impacts of the COVID-19 Pandemic on the Academic and Emotional Life of Higher Education Students in Italy



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1. The Italian Case

In Italy, the first two cases of COVID-19 were declared on 30 January 2020 (Raccanello et al., 2020a). A sequence of ordinances and decrees since then have introduced measures to limit the spread of the virus, resulting in serious constraints on people's freedom, including increases in social distancing. The first measures pertaining to the 'lockdown' were introduced on 23 February 2020 and involved the whole of Italy after 9 March 2020 (Hofverberg, 2020). Schools and universities were closed on 24 February 2020. After 4 May, the initial restrictions began to be loosened. In Italy, by 14 October 2020 over 365,000 people had been reported as infected. Of these, more than 36,000 people had died (Protezione Civile, 2020).

2. Theoretical Background

We describe the findings of two studies involving Italian university students during the first wave of the COVID-19 pandemic. These studies built on a psychological theoretical background, focused on achievement emotion, emotional impacts of the pandemic, and coping.

Achievement Emotions and Control-Value Theory

Achievement emotions are very relevant to students' learning and well-being (Pekrun & Linnenbrink-Garcia, 2014). According to the control-value theory (CVT) (Pekrun, 2006, 2018; Pekrun & Perry, 2014), students feel such emotions in relation to their learning activities or outcomes. They may be described by considering at least two underlying dimensions, i.e. valence and activation. Control appraisals, such as perceived control and self-concept, are core determinants of achievement emotions. Control appraisals refer to a learner's perceived causal influence over one's actions and outcomes. Achievement emotions, in turn, influence academic performance: Positive activating emotions (e.g. joy, hope, pride) are related positively to performance, while negative deactivating emotions (e.g. frustration, hopelessness, boredom) are usually related negatively. The pattern is more complex for positive deactivating emotions (e.g. relief) and negative activating emotions (e.g. anger, anxiety, shame). However, on the whole, it seems that positive emotions are positively linked with performance, while negative emotions are negatively linked with performance (Pekrun et al., 2017).

Emotional Impact of the COVID-19 Pandemic

The literature on the emotional impact of COVID-19 is growing very rapidly. Concerning the mental consequences of the COVID-19 pandemic, some studies report an increase in psychopathological symptoms (e.g. depression, anxiety, post-traumatic stress disorder (Arslan et al., 2020; Ausín et al., 2020; Ellis et al., 2020; García-Portilla et al., 2020)) and negative emotions (e.g. fear (Abdullah, 2020; Fitzpatrick et al., 2020)). However, there is still a paucity of data on the pandemic's impact on achievement emotions.

Pandemic-Related Coping Strategies

Coping is a multi-component psychological process that helps reduce the traumatic impact of stressful events, referring to all the actions marshalled to deal with them (Skinner et al., 2003). Yet, coping strategies can generally have an adaptive function (e.g. problem-solving, information-seeking, self-reliance, social support, accommodation, negotiation) or a maladaptive function (e.g. helplessness, escape, delegation, social isolation, submission, opposition) (Zimmer-Gembeck & Skinner, 2011). The current literature still partly neglects how university students are coping with the COVID-19 pandemic (Raccanello et al., 2020b).

3. Study – Italian Students During the First Wave of the COVID-19 Pandemic: Achievement Emotions and Correlates

Aims

The first aim was to describe how a sample of Italian university students felt during the first wave of the COVID-19 pandemic, focusing on achievement emotions. The second aim was to investigate whether the CVT can be extended to explain the relationship between antecedents and achievement emotions during the first wave. In line with the CVT, we hypothesized that beliefs on control (perceived control, digital self-concept) were antecedents of achievement emotions: Students perceiving greater control and with a higher digital self-concept were expected to experience positive emotions more frequently and negative emotions less frequently.

Method

The sample included 1,940 Italian university students ($M_{age} = 24.56$, $SD = 5.79$; 68% female). Between May and June 2020, they participated in the on-line survey “Impacts of the COVID-19 Pandemic on the Life of Higher Education Students” promoted by the University of Ljubljana, Slovenia. The Italian data were gathered by Daniela Raccanello, Giada Vicentini and Roberto Burro from the University of Verona in collaboration with Cristina Mollica from the Sapienza University of Rome and Michela Cortini and Stefania Fantinelli from the G. d’Annunzio University of Chieti–Pescara. We examined 21 items focused on: perceived control (e.g. *I can figure out how to do the most difficult classwork since on-site classes were cancelled*; 4 items; $\omega = .77$); digital self-concept (e.g. *I am confident in using software and programs required for my studies*; 7 items; $\omega = .88$); positive (joy, hope, pride, relief) and negative (frustration, anger, anxiety, shame, hopelessness, boredom) achievement emotions. The students responded on a 5-point scale.

Results and Discussion

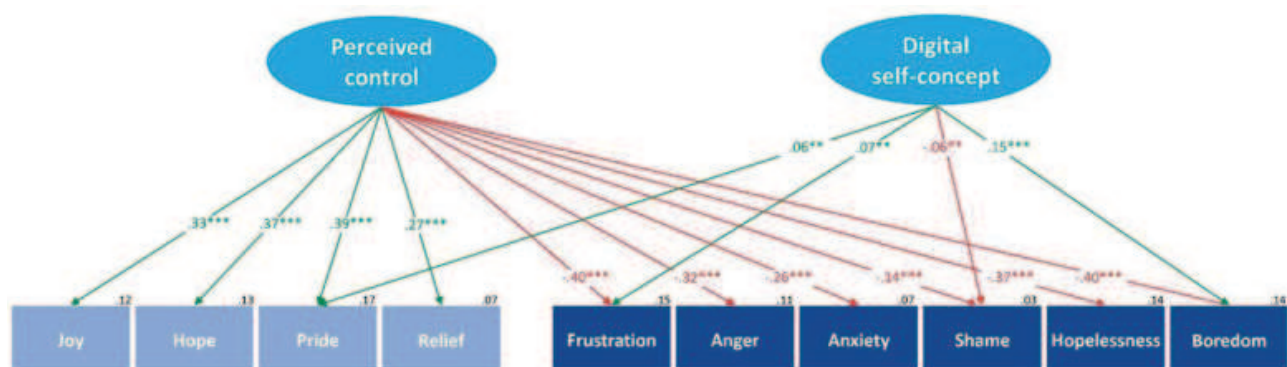
First, the data revealed that negative emotions ($M = 2.94$, $SD = 0.73$) were more frequent, $t(1553) = 3.95$, $p < .001$, than positive emotions ($M = 2.82$, $SD = 0.71$). Among the former, anxiety ($M = 3.40$, $SD = 1.15$) and frustration ($M = 3.36$, $SD = 1.00$) were the most frequent emotions; among the latter, hope ($M = 3.21$, $SD = 0.98$) was the most frequent emotion.

Second, we conducted a structural equation model using the R software (Figure 1). We tested a model in which beliefs on control were linked to the ten achievement emotions. The analysis confirmed the goodness of the model (fit indexes: $CFI = .987$, $TLI = .980$, $RMSEA = .065$, $SRMR = .046$), indicating that perceived control and a digital self-concept were antecedents of achievement emotions. Students who perceived greater control more frequently felt positive emotions (joy, hope, pride, relief) and less frequently negative ones (frustration, anger, anxiety, shame, hopelessness, boredom). Students with a higher digital self-concept more frequently felt pride but also frustration and boredom, while they less frequently experienced shame. To sum up, the analysis permitted an extension of the generalizability of the CVT to the settings of study and lessons characterizing university attendance during the first wave of the COVID-19 pandemic, particularly with respect to perceived control.

Figure 1

Structural Equation Model Concerning the Relationship Between Beliefs on Control and Achievement Emotions Explained Variances Are Reported Next to Each Dependent Variable.

* $p < .05$, ** $p < .01$, *** $p < .001$



4. Study – Students of the University of Verona During the First Wave of the COVID-19 Pandemic: Coping Strategies

Aims

We aimed to explore which coping strategies were relied on by Italian university students during the first wave of the COVID-19 pandemic by developing a scale designed to assess coping strategies.

Method

The sample included 3,785 Italian university students ($M_{age} = 25.50$, $SD = 6.61$; 79% female) attending the University of Verona. They participated in the on-line survey “Coronavirus and emotions” promoted by the University of Verona, Italy, during March 2020. We administered the Pandemic Coping Scale (PCS) (Raccanello et al., 2020b), which includes 20 items relating to four factors, two adaptive: Proactivity, i.e. students’ efforts to find solutions to problems (e.g. *Behaving in safe ways, for example washing your hands frequently*; 5 items; $\omega = .69$); and Accommodation, i.e. students’ adaptation in reacting to the situation (e.g. *Creating new routines if usual ones cannot be followed*; 5 items; $\omega = .68$), along with two maladaptive: Despair, i.e. immobility of students overwhelmed by panic and hopeless (e.g. *Thinking that nobody can help me*; 5 items; $\omega = .75$); and Opposition, i.e., students’ rejection of rules from authority (e.g. *Thinking that media and politicians are exaggerating the situation*; 5 items; $\omega = .62$). The students responded on a 5-point scale.

Results and Discussion

A repeated-measure analysis of variance revealed a significant effect of coping type, $F(3, 11388) = 19951.85, p < .001, \eta^2 = 0.84$. Pair comparisons indicated that students used Proactivity ($M = 4.08, SD = 0.59$) more frequently than Accommodation ($M = 3.90, SD = 0.62; t(1) = 13.32, p < .001, d = 0.22$), higher than Despair ($M = 1.81, SD = 0.61; t(1) = 155.33, p < .001, d = 2.52$), in turn higher than Opposition ($M = 1.53, SD = 0.46; t(1) = 20.31, p < .001, d = 0.33$). Therefore, adaptive strategies were used more frequently than maladaptive strategies.

5. Policy Recommendations for Policymakers, the EU Economy, Students, and Society in General Based on Experiences in the First Wave

Students Need Support

Our data reveal the pandemic has had a negative emotional impact on university students and that this is detrimental to their well-being and academic performance (Pekrun & Linnenbrink-Garcia, 2014). Negative achievement emotions were more frequent than positive achievement emotions. This trend runs counter to the findings of many studies conducted prior to the pandemic. Our findings clearly show that university students need to be supported to help cope with the pandemic's consequences.

Relevance of Control Beliefs

In line with theoretical models (CVT) (Pekrun 2006, 2018; Pekrun & Perry, 2014), our findings confirm that control-related beliefs are linked to achievement emotions. Therefore, improving such beliefs can boost achievement emotions and, in turn, performance. Consequently, policy recommendations include introducing actions to improve beliefs on control (such as perceived control and digital self-concept, but also other control-related beliefs) through a variety of ways so as to enable students to perceive that they possess the necessary instruments to continue 'to be students' even amid radical changes. One set of actions refers to how authorities, policymakers, universities etc. provide information. For example, the amount of information given about didactic and/or instructional procedures should neither be too much nor too little, updated and reliable, not ambiguous, and describe the reasons underlying the changes and possible restrictions. This gives responsibility to the students, increasing the likelihood they follow the rules also when this implies constraints because they understand that they help to protect people. Another set of actions relates to the timing of communication. For example, any change should be communicated as soon as possible in order to allow the students the possibility to control at least those aspects pertaining to them (e.g. changes to the organization of classes, from on-site to on-line, should be communicated quickly in order to permit the corresponding changes in transportation or accommodation and the chance to use technological devices). A further set of actions focuses on offering students interventions to modify their causal beliefs, relating to where they locate the reasons for academic success and failure. For example, fostering attributional retraining strategies could result in benefits for adaptive attribution-related emotions (Hamm et al., 2014). Attributional retraining strategies aim to modify causal attribution processes, e.g. students may be helped to attribute their success or failure to internal causes, like their effort concerning university tasks, and to avoid attributing them to external causes like unluck concerning the constraints brought by the emergency. Finally, specific actions to improve students' digital self-concept could include both courses to teach how to use the technological devices/software and the economic support for acquiring them.

Fostering Emotional Competence

We know that some coping strategies are adaptive while others are maladaptive. Therefore, improving awareness of this can influence achievement emotions, and thereby performance. Authorities, policymakers, universities etc. can promote a range of actions to increase knowledge of emotional awareness, particularly adaptive coping strategies. A set of suggestions refers to the activation of on-site and/or on-line psychological support help-desks for students, as requested by several students in our surveys in their verbal reports on what was missing during the first wave (e.g. *I think that the university should have tried to activate a psychological support service to help the students who were alone in their flat, far from everything and everybody [...] who suffered from psychological damage*). Another set of suggestions relates to the development of applications, on-line courses or webinars to foster emotional knowledge and competence relating to disasters. One example of such an application is HEMOT® (patent-pending) (Raccanello et al., 2020c; Vicentini et al., 2020), a web-application for emotional prevention and earthquakes for children developed by the University of Verona within the PrEmT project (Emotional Prevention and Earthquake in primary school project). Another example is the possibility to activate on-line trainings such as the “Coronavirus and emotion regulation” training already tested with workers during the lockdown in Italy (Raccanello et al., 2020d). Finally, public communication campaigns could be promoted to ensure the vast majority of the population is reached. One example here is the campaign activated by the University of Verona on 28 February 2020 through the dissemination of a pamphlet to help adults cope with children and adolescents’ emotions (Raccanello et al., 2020a) (see <https://www.hemot.eu>).

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PART4

Proposed Policy Measures for Higher Education Students in Romania after the First Wave of the Covid-19 Pandemic



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1. Introduction

Along with other countries, Romania saw its schools close in March 2020. The higher education system's resilience in times of the coronavirus pandemic has depended on its capacity to continue education after the closure of schools. Home-schooling has become a solution for many students, as supported by various virtual education tools. Data collected via a questionnaire-based survey among 933 Romanian students from 22 universities in May 2020 provide an insight into how the life of higher education students has been impacted by the pandemic (Aristovnik et al., 2020).

2. The case of Romania

Like other countries, the Romanian higher education system has encountered an unprecedented disruption, with 95% of students experiencing the cancellation of on-site classes (Aristovnik et al., 2020). The changes and shifts in seen in the approach to education have been more rapid and significant during this pandemic than ever before. Lectures and seminars transitioned to being on-line mostly via on-line, real-time videoconferences. Sending on-line presentations to students and written communication through forums and chat had been used to a smaller extent. Online lectures and seminars not conducted in real-time supported by audio and video recordings had rarely been used to deliver lectures and seminars.

Since on-site classes had been cancelled, around 60% of students were satisfied by the organization of the on-line lectures and around 50% by the on-line seminars. However, about 1/4 of the students were dissatisfied with the on-line lectures and seminars (Aristovnik et al., 2020). Compared to the workload before the onsite classes were cancelled, 2/3 of the students consider that their study workload had become larger or significantly larger. The share of students experiencing a larger study workload is much higher among bachelor students than among master students. Still, around 2/3 of students consider that they had adapted well to the new teaching and learning experience, although the share of well-adapted students is higher among master students than among bachelor students.

With respect to learning outcomes, around 60% of students stated they could master the skills taught in the on-line classes, but the share is lower among bachelor students. More than 2/3 of students feel that it is more difficult for them to focus during on-

line teaching than in on-site teaching, while the difficulties are more frequent among bachelor students. Further, almost 1/2 of the bachelor students and 1/3 of the master students said their educational performance had worsened.

Regarding the required infrastructure for on-line classes, the data of the survey show that more than 1/4 of students had limited access to a quiet place to study. A minority of students had limited access to a desk, a computer and the necessary software and programs. However, important differences were seen among students with financial difficulties and other students with respect to the infrastructure required. More than 1/3 of financially challenged students lacked the infrastructure to support home-schooling via virtual tools.

A large majority of the Romanian students expressed many concerns due to various personal circumstances. First, they were worried about their future professional career, confirming that young workers are highly vulnerable in pandemic times and that the school-to-work transition is more difficult. They were also worried about current studying issues and their future education. Their personal finances are another reason for the anxiety of most students. Another important aspect is that students are more worried about their mental health than their physical health. Over half the students were worried about their mental health, with education-related worries thus being among the top three causes of anxiety among Romanian students (Aristovnik et al., 2020).

No support measures have directly targeted students during the Covid-19 pandemic in Romania. In the students' opinion, emergency support granted to vulnerable people, emergency childcare for essential workers and the postponement of monthly payments are the most important support measures during the pandemic. Since many students are renters, they also favoured measures like financial assistance granted to renters and the freezing of rents, as well as the removal of public transport fares.

3. Conclusions

The coronavirus pandemic has significantly affected the life of higher education students in Romania. Bachelor students had experienced greater difficulties in adapting to on-line education. The collected data show that while the higher education system's resilience has relied extensively on on-line classes, socio-economic disparities could widen educational inequalities.

In the autumn of 2020, a new school year began in Romania with most lectures and seminars being delivered on-line (Romania Insider, 2020). These results show that authorities and universities must provide more consistent support to students, especially bachelor students and those with financial difficulties.

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PART5

Proposals for Polish policy-makers Covid-19 in the field of Higher Education

19/29



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1. Introduction

The development of the Covid-19 pandemic and the ensuing national lockdown introduced in Poland led to the first decision to suspend on-site classes at universities being made by the Minister of Science and Higher Education for the period between 12 and 20 March 2020. It was later extended, formally until the end of May. However, in most cases, where possible, classes, consultations with teachers and exams were provided on-line until the end of the academic year (Zdziebłowski, 2020). The Ministry of Science recommended replacing on-site education with e-learning where possible, even if this method of conducting education was not planned and provided for in the curriculum. Various forms of distance learning have been introduced at universities all over Poland, in many cases initially based on making materials available to students. More advanced forms have gradually been offered since, using different platforms and tools in order to provide classes in “real-time” (Nauka w Polsce, 2020). The greatest challenge was experienced by fields of study where a significant part of the curriculum is based on education provided in the form of practical training, e.g. medicine and health sciences. These fields of study belong to the so-called regulated professions and are hence based on strict rules regarding the number of hours which should be realised in a clinical environment, as included in EU directives (Directive 2013/55/EU).

The aim of this report is to provide an overview of selected aspects of on-line education during the first wave of the Covid-19 pandemic and lockdown in Poland.

2. Material and methods

The presented Polish results form part of the study: A global student survey “Impact of the Covid-19 Pandemic on the Life of Higher Education Students” led by the University of Ljubljana (Slovenia) conducted on-line between 5 May and 15 June 2020 among higher education students from across the world in which 31,212 students, from 133 countries (Aristovnik et al., 2020a), participated.

The Polish results are based on data collected from 2,742 students (Aristovnik et al., 2020b) on all levels of higher education, representing various disciplines and universities/high schools from across the country.

3. Results

Analysis shows that 92% of the students surveyed declared that their on-site classes had been cancelled. Regarding the infrastructure for studying at home, the results reveal that 95% of Polish students have access to computers ("often" and "always" answers combined), which was the available equipment most often indicated. In addition, 86% of students reported having access to a desk, 84% to headphones and microphone, 81% to the required software and programs, 74% to a webcam, 70% to a good Internet connection, and 67% to a printer. These results exceed the international average, which for the mentioned equipment was calculated in the range of 44%–84%. However, only 44% of Polish students reported having access to study materials, which is below the international average of 50%.

While reporting satisfaction with different forms of on-line lectures or seminars/practical training, Polish students were most satisfied with those provided on-line in real-time (videoconference) ($M=3.33$ in the case of lectures and $M=3.38$ in the case of seminars/practical training) when compared to those provided on-line with a video recording, on-line with an audio recording, on-line by sending presentations to students or written communication. Analysing the availability of the on-line methods for supervision/mentorship, via a video-call was the method most often indicated by Polish students (45%). Yet, the most preferred method was via email communication (35%).

Regarding the chosen aspects of satisfaction with on-line education, the results for Polish students are very close to the results for the calculated international average. Students reported greater satisfaction with lectures ($M=3.23$) than with seminars and practical classes ($M=3.03$). Their satisfaction with supervision/mentorship was reported at the level of $M=3.20$. Considering the cancellation of on-site classes and the epidemiological situation, students pointed out their slightly higher satisfaction with teaching staff support ($M=3.30$) than their satisfaction with the university dealing with the Covid-19 pandemic ($M=3.13$).

When it comes to students' adaptation and performance in the new teaching/learning environment, Polish students reported moderate agreement with the following statements: "it is more difficult to focus during on-line teaching when compared to on-site teaching" ($M=3.58$); "my performance as a student has improved since on-site classes were cancelled" ($M=2.74$); "I have adapted well to the new teaching and learning experience" ($M=3.30$); "I can master the skills taught in class this year even though on-site classes were cancelled" ($M=3.04$).

More than half of the surveyed students (56%, answers: "larger" and "significantly larger") reported their workload had grown since the on-site classes were cancelled. Most students (60%, answers: "a good part of the time", "most of the time", "all of the time") reported worrying about their future education as well as about their future professional career (65%, answers: "a good part of the time", "most of the time", "all of the time").

Among the emotions felt by students while attending classes and studying and preparing for them after the outbreak of COVID-19, frustration (56%, answers "often" and "always"), anger (43%, answers "often" and "always"), anxiety (45%, answers "often" and "always") prevailed. However, joyful was also reported (56%, answers "larger" and "significantly larger").

4. Conclusion

The results described above and the so-called second wave of the Covid-19 pandemic across the world allow certain recommendations for policymakers on the national and EU level to be formulated. Various methods of material, information and psychological support should be organized for higher education students and teachers on both the local (e.g. university) and national levels. Material support regards the equipment/infrastructure needed for effective on-line education in the case of students (and teachers) who do not have access to it. The information support should contain a clear message from university authorities and the ministry in charge of higher education about the state of implementation of the curriculum, possible threats to achieving learning outcomes, recommended solutions, and about the options to develop digital competence. Finally, psychological support is needed and should be offered in different forms of counselling.

Considering the national and international level, any initiatives which support research on different aspects of distance learning, interdisciplinary collaboration and cooperation with information technology should be encouraged.

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PART 6

The impact of Covid-19 on Croatian Higher Education Students

22/29



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1. Introduction

This report brings huge insights into the implications of the coronavirus pandemic for the higher education system. The crisis was caused by COVID-19 (Coronavirus Disease 19), which had rapidly transformed the lives of people all around the world in the first 4 months of 2020. Nobody could imagine that life would change so drastically in such a short time. The people of today, who have already experienced two world wars and other smaller wars, natural disasters and various forms of financial and economic crises, could not even imagine what the term 'total locking' or the more popular 'lockdown' represents. A 'lockdown' is an obligation for people to stay where they are, usually due to specific risks to themselves or to others if they were to move freely about. The term "stay-at-home" or "shelter-in-place" is often used for a lockdown that affects an area rather than a specific location. Data from China where the pandemic first began at the end of December 2019 showed shocking results in the number of illnesses and deaths as a result of the spread of the new coronavirus (Apolone et al., 2020). After the first few months of 2020, it had become clear that the virus would bring unimaginable and previously unseen consequences for all levels of society and the economy.

This report analyses the Global student survey "Impacts of the COVID-19 Pandemic on the Life of Higher Education Students" in the case of Croatia. The survey results provide detailed insights into students' fulfilment and perception of different aspects of their life during the biggest human crisis of the last century. This research concentrates on implications of the coronavirus pandemic for the higher education system, more precisely, the way it has affected higher education life, work and students' mental well-being.

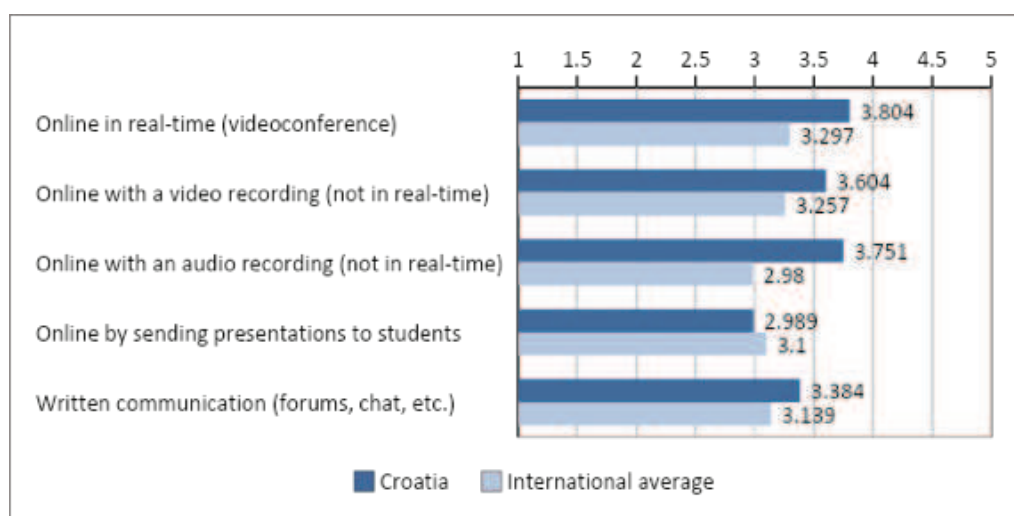
By 15 June 2020, the global student survey "Impacts of the COVID-19 Pandemic on the Life of Higher Education Students" had been completed by 30,877 students. The students come from 129 countries, of whom 13,610 (44.08%) were from Europe, 7,306 (23.66%) from Asia, 4,220 (13.67%) from South America, 2,708 (8.77%) from Africa, 2,419 (7.83%) from North America and 186 (0.60%) from Oceania. Information on a respondent's country was not provided by 428 (1.39%) students. The response rate was 34.80% (30,087 out of the 88,716 who opened the link), (Aristovnik, 2020.b). In the Croatian part of the survey, the number of responses was 687, thereby comprising a share of 2.2% of all responses (Aristovnik, et al. 2020b).

2. Experiences from Croatian case

In the Croatian case, six public universities (University of Zagreb, Juraj Dobrila University of Pula, University of Osijek, University of Rijeka, University of Split, and University of Zadar) and one private university (Zagreb University of Applied Sciences) were covered by the survey.

Considering academic life in Croatia, students were dominantly satisfied with the on-line organization of lectures.

Figure 1
Satisfaction with different forms of on-line lectures

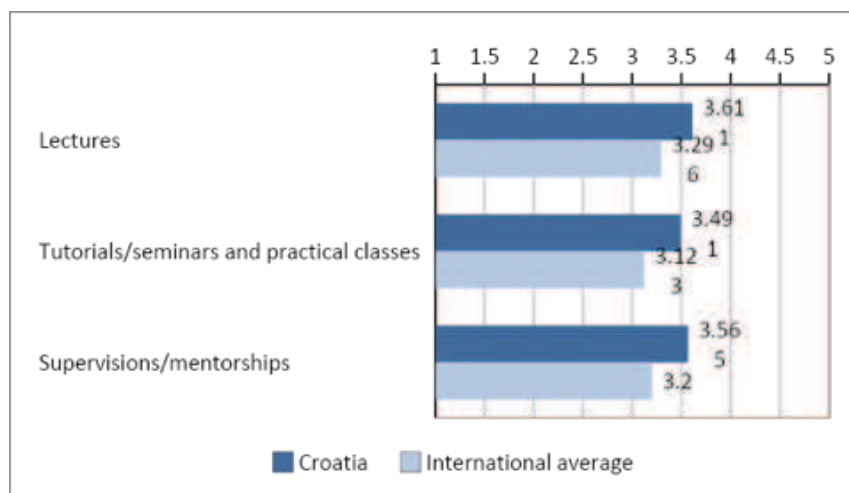


Note: Mean value calculated considering students answers: 1-very dissatisfied - 5-very satisfied.

The students were mainly satisfied with the on-line aspect in real-time (videoconferences), (3.804) and on-line with an audio recording (not in real time), (3.751) compared to the international average (3.297) and (2.98).

At the same time, they were very satisfied (4.2) with the on-site classes, but mainly with the lectures and less with the seminars and practical classes.

Figure 2
Satisfaction with the organization of the on-site classes



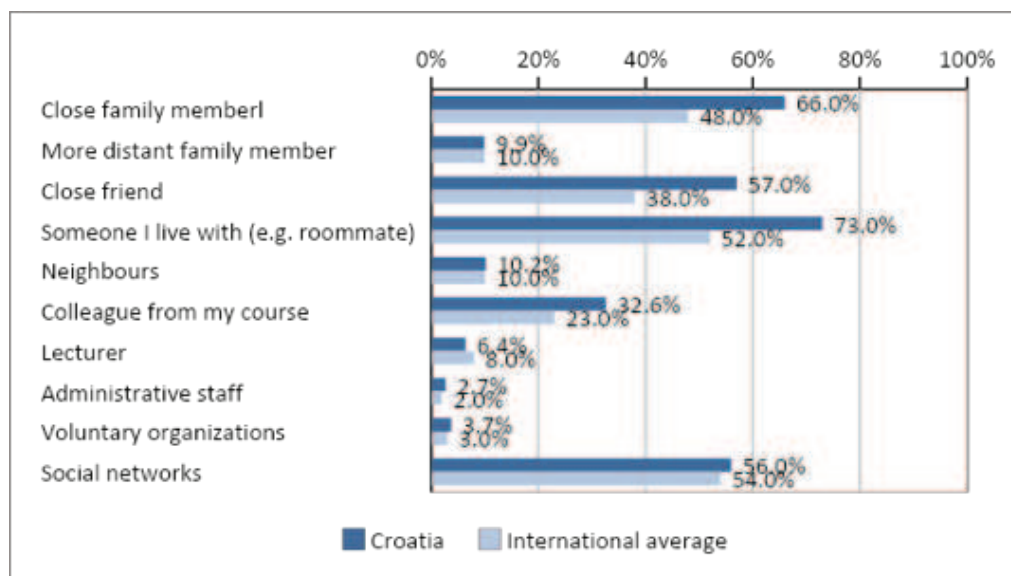
Note: Mean value calculated considering students answers: 1-very dissatisfied - 5-very satisfied.

Altogether, their satisfaction with the on-site classes was significantly above the international average.

Like for everyone else, the social life of students suffered greatly during the lockdown. The survey shows that Croatian students communicated mostly on-line with their roommate (73.0%) or a close family member (66.0%), while students in other countries chiefly communicated through social media (54.0%).

Figure 3

On-line communication with other people since the COVID-19 pandemic



Students were very worried about various life circumstances that had changed drastically since the start of pandemic. In Croatia they were mostly (42% of them) worried about different studying issues (lectures, seminars and practical work) and surprisingly less worried about their future professional career (29%) and future education (30%) when compared with other international students. Others were mainly concerned with their professional career in the future (47% of them) and studying issues (41%), yet they were all mainly bored, anxious and frustrated. Like internationally, the results for Croatia also show that teaching staff and universities' public relations offered students the greatest support at university during the pandemic (Aristovnik, et al., 2020. a).

3. General observations – best practices, worst practices

In order to make some general observations and better understand the depth of the pandemic's impact on the study and teaching experience in Croatia, it is useful to analyse and compare the results of the global student survey with the domestic one.

The Agency for Science and Higher Education (AZVO) also collected assessments of survey participants from Croatian universities regarding certain aspects of work and study during the exceptional circumstances as well as the participants' personal experiences in the period between March and July 2020. The assessment was provided through survey questionnaires for the students and staff of higher education colleges (AZVO, 2020).

The questionnaires were delivered by email. The questionnaire for employees of higher education institutions was answered by 764 respondents, of whom 102 were leaders

or members of the administration of the higher education institution, 96 heads of organizational units (e.g. departments, divisions, institutes etc.), 540 teachers and 26 employees of the professional service of the higher education institution (secretariat, department secretariat, staff of deans' offices, student services, libraries, information services). A total of 1,114 students responded to the student questionnaire, of whom 395 were male and 719 female. Of the total number of students responding to the questionnaire, 914 students were studying at a public college and 199 at a private college (AZVO, 2020).

As already concluded for the Global Student Survey, the domestic survey reveals that student experiences vary from positive to negative. Positive experiences claimed that Croatian students (especially those who study and work) were happy with the fact the on-line classes meant they did not have to spend time traveling and going to college, and they also found it helpful to be able to record the lectures and to re-watch them. However, some stated that while they like the on-line lectures, when it comes to exercises and so on, they prefer live instruction (AZVO, 2020).

Negative experiences revealed in the Global Student Survey include many international students who had problems due to a lack of computer skills (Aristovnik et al., 2020). Students in Croatia pointed out that their Internet connection had created problems for them and that not all teachers were equally trained to use the applications required to perform on-line teaching (AZVO, 2020). Some respondents answered that they had limited access to a computer because they were sharing it with other household members and that they needed a more stable and faster Internet connection (AZVO, 2020).

4. Recommendations

When considering both surveys (global and domestic) that mainly aimed to assess students involved in the higher education system with respect to certain aspects of work and study during the exceptional pandemic circumstances, the perception and views held by the Croatian students proved to be quite similar.

They were relatively satisfied with the different on-line learning options, but believed that the additional involvement of the higher education institution or other stakeholders, primarily in the organization of on-line exams, had enabled live exercises or the better organization of on-line exercises. The results show that not all teachers at all universities were equally well prepared for the new situation of virtual teaching. They indicated it was necessary for all teachers to teach and to adjust the content and materials to a greater extent to the new form of teaching. According to the AZVO (2020) survey, more than half the students (56%) believed that during their studies in the virtual environment they were more and much more burdened by preparations for the teaching process than before the lockdown.

As concerns the socio-psychological aspects of teaching in a virtual environment, respondent students stated that it was necessary to provide psychological counselling to all students and have an understanding of individual situations, that higher education institutions should seek feedback from students and make a well-considered decision on how to study during such a situation (AZVO, 2020).

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PART 7

Adaptation of Higher Education Students from Bosnia and Herzegovina to the Covid-19 Pandemic

27/29



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1. Introduction

The Covid-19 pandemic formally started in Bosnia and Herzegovina on 14 March 2020 and remains a great threat to both society and university life (Arapović & Skočibušić, 2020). Most classes were moved to the on-line sphere and the situation is undermining the ability of researchers to do their work and of universities to provide a high-quality and safe educational experience for students (Lancet, 2020).

During the first months of the pandemic, through an initiative of the School of Economics and Business, University of Sarajevo, Bosnia and Herzegovina participated in a global survey entitled *Impact of the Covid-19 Pandemic on the Life of Higher Education Students* which includes different aspects of student life like socio-demographic and academic characteristics, academic life (lectures, tutorials/seminars and practical classes, supervisions/mentorships, assessment and workload, teaching and administrative support and student performance/expectations), infrastructure and skills for studying from home, social life, emotional life and life circumstances (general circumstances, financial circumstances, support and behaviour, general reflections) (Aristovnik et al., 2020a).

2. The Case of Bosnia and Herzegovina

In Bosnia and Herzegovina (BiH), 409 unique responses from students were collected, covering the majority of universities in the country. Students from seven of the eight public universities responded to questions, namely: University of Sarajevo, University of Banja Luka, University of Tuzla, University of Mostar, University of "Džemal Bijedić" Mostar, University of Tuzla, University of Zenica, as well as students from several private universities (e.g. Sarajevo School of Science and Technology; International University of Sarajevo). A variety of programmes, years of study and demographic background is included in the sample from B&H.

When it comes to student life, the data from the survey show that 80% of students had their on-site classes cancelled, while they were relatively satisfied with the on-line mode of work (mean value above 3.5). Further, lecturers had provided a timely response to their needs, with a range of on-line materials being available. Mentorships and advisory activities were mainly conducted by e-mail communication (in 53% of cases). Students claimed they owned most of the basic and additional equipment in more than 80% cases

(a quiet place, a desk, a computer). Interestingly, only 25% had a printer at home. When it comes to the students' adaptation and performance in the new teaching/learning environment, students from B&H hold third place globally in terms of their improved study performance.

As regards the institutional environment, satisfaction with the performance of the universities during the crisis was relatively high. Namely, B&H universities score slightly above the international average in terms of student satisfaction. However, there is a general lack of satisfaction with the work of the institutions (fourth-last place) and the work of hospitals (fifth-last place) during the COVID-19 pandemic. It is encouraging that students noticed the efforts of all universities to continue operating and provide them with a knowledge and study experience. Conversely, it is evident that students were following the situation and were not happy with the institutional response and coordination.

This has been a challenging time for students, as demonstrated by their comments (Aristovnik et al., 2020b):

"Living through this, one lesson I have learnt well is that we all need people around us. In addition, more than ever before, I am appreciative of the technological developments that make communications so easy."

"I think it was a difficult situation for everyone, but mostly they have been able to deal with the situation. It was also a good teaching experience and hopefully if it happens again institutions and government will be better prepared."

3. Conclusions

To summarize, these brief results show that, institutionally, a better response from various levels of institutions is indeed necessary. Since the COVID-19 pandemic remains a pressing issue, a lot more coordination and security are expected and required. Such coordination is particularly difficult in a country with a complex institutional system in which higher education is not regulated on the national level (European Commission, 2017).

Namely, since the country is divided into the two entities of the Federation of Bosnia and Herzegovina and Republika Srpska and given that the Federation of Bosnia and Herzegovina is further divided into cantons, the regulation of HEI occurs on the cantonal level (European Commission, 2017) (and the level of Republika Srpska). This means that each of the 10 cantons plus Republika Srpska has taken a different approach to tackling the COVID-19 pandemic issues in HEI. For example, in the Canton of Sarajevo final decisions about the start of the new academic year were only made on 5 October (after when the academic year should have already started), creating various issues with managing the students' academic obligations and with the structure of the semesters (see Skupština Kantona Sarajevo, 2020). Universities received no clear guidance on how to act and prepare for the next periods and much more coordination and organization is still necessary.

Policy proposals should be much more coordinated, at a minimum agreed upon in consultation with all of the main stakeholders involved (i.e. ministries on various levels should consult their respective universities and all actions and decisions should be made with the agreement of all interested). Moreover, coordination on the entity and even the national level is desired in order to more easily gain access to the best practices and apply policies.

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