Perceptions and attitudes of the students of Babeș-Bolyai University towards online, face-to-face, and hybrid learning during the COVID-19 pandemic

Réka Geambașu
Univ. Lecturer, Babeș-Bolyai University and HUN-REN Centre for Economic and Regional Studies, Romania, email address: reka.*geambasu@ubbcluj.ro*

Júlia Szabó
Sociologist, Qualitas Centre, Babeș-Bolyai University, Romania, email address: julia.szabo@ubbcluj.ro

Éva László
Univ. Lecturer, Faculty of Sociology and Social Work, Babeș-Bolyai University, Romania, email address: eva.laszlo@ubbcluj.ro

Valér Veres
Associate Professor, Faculty of Sociology and Social Work, Babeș-Bolyai University, Romania, email address: veres.valer@ubbcluj.ro

Anamaria Bogdan
Analyst, Qualitas Centre, Babeș-Bolyai University, Romania, email address: anamaria.bogdan@ubbcluj.ro

Abstract: This paper presents the findings of an exploratory sociological survey conducted at Babeş-Bolyai University of Cluj-Napoca focusing on student experiences during the COVID-19 pandemic. The paper aims to investigate student experiences and attitudes toward different modes of education. Our research goals were to evaluate students' perspectives on online, face-to-face, and hybrid teaching activities, to assess the challenges they faced, to group students into clusters based on their attitudes toward online learning and to identify those factors that shape student experiences and preferences. The study utilizes cluster analysis as a methodological approach to categorize students into three groups according to their preferences for teaching modes: (1) 'Balancers' (43.5%) favored a blend of online and in-person classes, (2) 'Onliners' or

https://doi.org/10.24193/JRHE.2023.2.1

‘screenagers’ (28.9%) preferred online courses, as opposed to (3) the adepts of face-to-face learning (27.6%).

In spite of its challenges, online teaching was preferred by nearly 30% of the students, among whom those pursing their master’s degrees and young people coming from lower status families and thus already in employment were overrepresented. Their experiences and attitudes show that these students have indeed developed effective strategies for online education. In opposition to those who preferred face-to-face classes, ‘onliners’ were more likely to show satisfaction with their teachers, more likely to be better equipped for online courses and also to have passed the exams. With these results the article contributes to the scholarly and expert debate concerning the possible effects of the flexibilization of higher education upon students’ access to tertiary education. We argue that for an important segment of the students, online courses provided a valuable chance to pursue their studies which they took advantage of, showing higher levels of commitment and willingness to meet the university requirements.

Keywords: higher education, COVID-19 pandemic, online education, student experience, student preference

Introduction

Within the context of digitalisation, higher education around the world is working toward innovating learning and teaching methodologies, and the unforeseen and exceptional circumstances created by the COVID-19 pandemic have accelerated this process. In March 2020, the vast majority of European universities transitioned from traditional 'face-to-face' education to various forms of digital, online learning. Although teachers and students adapted to this swift transformation and embraced its advantages, certain adverse societal consequences have become evident. These include stark manifestations of the digital divide among diverse student and faculty groups, challenges for employed students managing both work and studies, and an array of psychological issues stemming from reduced personal interactions.

In this context, the purpose of this article is to present the findings of an exploratory quantitative sociological survey conducted on a student sample at Babeş-Bolyai University (BBU) of Cluj-Napoca, Romania's largest higher education institution. A 44-item questionnaire was implemented which covered issues such as university studies at the time of answering the questionnaire, respondent experiences related to both face-to-face and virtual learning, as well as questions related to the COVID pandemic, well-being, and sociodemographic data.

The primary research objectives were the following:

(1) to assess students' perspectives on online, face-to-face, and hybrid teaching activities and the learning challenges they were facing at the time.

(2) to identify groups of students using cluster analysis, looking at multivariate positioning towards online learning, and examining the sociodemographic, labour market, and social background characteristics that define these identified groups.

(3) to explore the distinct difficulties encountered by students in their online learning experiences, according to their attitudes towards online-offline teaching.

Theoretical background

The COVID-19 pandemic has profoundly impacted societies at large, as well as individual lives, shattering not only entire social and economic systems, but also people's and families' everyday practices and livelihoods. Although the impact and costs that different social groups incurred were unequal and intersectional, most people were negatively affected by the closure of several institutions and by the suspension of public and private services, from educational, social and health to sports or leisure institutions. Some of the services that were previously offered in person were replaced by virtual or online programs, and many were simply discontinued. For many people, though not for all, the pandemic's primary experience, especially that of its first wave, was that of their confinement to the private sphere. Paid work, education, as well as other activities were relegated to people's homes, and carried out using digital and online means of communication. Nevertheless, a significant share of the population has not benefitted from the possibility to pull through those months in the safety of a home, either because they were employed in the frontline or in vital sectors (Robert et al., 2023) that could not be replaced or suspended, or because they were exposed to financial, physical, or psychological hardship in their private spheres.

During the first months of the pandemic, a more optimistic approach that saw the lockdown as a living lab, a "natural experiment" (Hrubos, 2021) that would improve people's lives was particularly popular (Kortemeyer et al., 2023, Hrubos, 2021). According to this interpretation, the measures taken in this period, while doubtlessly disrupting the rhythm of everyday life, would also be able to make social injustice and inequalities visible. There were important voices in the media which questioned the taken-for-granted nature of Western consumption patterns, the social and regional inequalities they rested upon, or the consequences of neoliberal states' disinvestment from public services (Poenaru, 2021). It has quickly become obvious that social and economic status, as well as unequal access to material resources and health care would impact people's chances to tackle the challenges of the pandemic (Chung et al., 2020, Fortier, 2020). The sudden closure and unavailability of several public and market services revealed the value of service and frontline workers, while disruptions in global labor and care chains called into question the sustainability of global economy (Stevano

et al., 2021, Whiley, Sayer & Juanchich, 2021). However, as months and years passed, the commitment to an in-depth rethinking of past social and political systems faded, and a vast corpus of empirical evidence has been accumulated that showed that instead of 'equalizing', the pandemic would deepen social inequalities and fail to lead to a more just division of work and access to resources (Fisher et al., 2020, Fortier, 2020, Nagy et al., 2023).

Public, private, and higher education were among the most important systems affected by the suspension of face-to-face encounters. In March 2020 virtually all schools and 95% of universities worldwide closed their campuses (Hrubos, 2021). The narratives of education in the pandemic and expectations about its future were shaped by the duality described above. On the one hand, its almost complete shift to the online space was considered an emergency response that implied great losses for all participants, students and educators alike, deepening the digital divide and affecting especially students of lower social and economic background (Montacute et al. 2021, Jæger & Blaabæk, 2020, Hrubos, 2021). On the other hand, several analysts underlined that the COVID-lockdown created the momentum for the acceleration of digitalization, a process that has been unfolding for the past decade in most Western universities (Hrubos, 2021). In the following we provide a short summary of the most important costs and benefits at the individual and institutional level of universities' switch to online teaching during the pandemic.

Since the pandemic has led to partial or total suspension of face-to-face courses and a mandatory switch to exclusively online or hybrid learning activities (Deaconu & Olah, 2022), universities around the world adopted a wide variety of solutions to replace face-to-face courses (Hrubos, 2021). In this paper, we rely on Svihus's conceptualization of online learning or teaching and we use it as a generic term that encompasses all forms of learning on a technology platform that can be relied upon to create both synchronous (real-time video conferencing systems, real-time interactive activities) and asynchronous (pre-recorded presentations, messaging at different times) learning environments (Svihus, 2023).

Digitalization has been among the key objectives of universities across the world, as part of a general endeavor to re-conceptualize the very meanings of higher education amidst rapid global economic, social and political transformations. The urge to rely more

heavily on digital solutions is driven by the attempt to make higher education more inclusive in terms of social class and regional background, and to better adapt educational programs to the needs of the labor market. In this respect, the "flexibilization" of higher education, within which online courses and degrees or "micro degrees" are offered, may contribute to the lowering of thresholds, to "upskilling" and to improving access for "second chance learners" (Hrubos, 2021, Farrell & Brunton, 2020). However, the flexibilization of higher education might have its pitfalls, represented in high dropout rates, varying quality, or the lack of recognition of such degrees by employers (Hrubos, 2021).

Similarly to the ambivalent effects of digitalization on the functioning of universities, its consequences for students are manifold. Some institutions, or faculties within universities, already had online education programmes in place, and both teachers and students had received training (Almahasees et al., 2021) which greatly facilitated the adaptation to the forced shift to online education that occurred during the COVID-19 outbreak. For others, the transition was so unexpected that they simply tried to transfer face-to-face education to the online space (Svihus, 2023; Tang et al., 2021) and progressively adapt to distance and online teaching. Higher education institutions had different experiences with online operations and education before 2020. Digitalization of higher educational processes has been carried out since the 80s and the 90s in the institutions of the Global North, but it has been conceived and implemented on two levels. On one level, it involved administrative, communication, and HR processes where results were more obvious. On the other level, in teaching activities, a so-called dual digitalization has been under way: one carried out by IT-departments and aiming to create digital solutions for online learning (learning management systems, MOOCs, digital libraries etc.) and the other, more content-oriented effort by researchers and teachers, working towards the setting up of digital subjects (Bygstad et al., 2022). These two levels have been developed in parallel, creating a more fragmented approach. Bygstad et al. (2022) claim that a more integrated conceptualization of digitalization, where "digital learning spaces" are being developed on multiple — technical, scientific, pedagogical and organizational — levels, improves its efficiency.

There has been a growing body of research focusing on how the shift to online education during the pandemic affected students already enrolled at university. Most of

these studies prioritized topics such as mental health, individual differences (in terms of personality or digital literacy) in coping with challenges, or the role of social background in tackling digital teaching. Among the personal traits that were found to have a positive impact on students' coping strategies researchers identified self-regulation, self-organization and flexibility (Kortemeyer et al., 2023), while on the other hand social and economic background through access to equipment, a proper study space and financial support also determined students' ability and success to adapt to online studying (Butnaru et al., 2021; Montacute et al. 2021).

According to studies on the impact of remote instruction on students, carried out both before and after COVID-19, there are several strategies teachers can apply to efficiently address student needs and increase their commitment to online courses: students usually appreciate if several types of tasks are included in a course, if the setup allows for a wide variety of interactions between participants, and if a course design creates and builds on various student groups, thus preventing their isolation (Farrell & Brunton, 2020). A different study underscored a number of advantages of digital learning for both students and teachers: increased autonomy, flexibility, convenience and access, and whenever discussion forums are provided, communication between students and teachers is also improved. Other studies on educational processes during the epidemic concluded that both university students and teachers saw online learning as a flexible and useful learning option that helps to maintain continuity in educational work, even in extreme circumstances such as those during the COVID-19 crisis (Almahasees, et al., 2021, Jayanthi & Rajalakshmi, 2022). Accessibility (even from geographically isolated regions), comfort, flexibility, cost and time efficiency, and the ability to control the learning environment are major contributors to the usefulness of online learning over time (Abbasi et al., 2020; Almahasees et al., 2021; Dhawan, 2020; Khalil et al., 2020; Martín-Blas & Serrano-Fernández, 2009; Riaz et al., 2023). The advent of online learning has fostered a paradigm shift towards self-directed learning, wherein the student assumes an active role in the educational journey. Students are actively engaged in the pursuit of gaining or cultivating additional competencies, such as time management and self-discipline (Almahasees et al., 2021).

However, several challenges and potential barriers were highlighted. These findings indicate that online learning, even synchronous videoconferencing, cannot

completely substitute traditional in-person learning (Lee et al., 2023). Among its costs, the same research found that distance teaching and learning is much harder work and can easily lead to burnout. If not sufficiently prepared for it, teachers are likely to fail in their attempt to deliver meaningful and efficient courses, while students are very likely to face isolation and to experience a weaker sense of belonging, self-discipline, and efficiency (Soliman et al., 2022). The research conducted by Maqableh and Alia (2021) investigated the responses of undergraduate students to online learning in the context of the COVID-19 pandemic, also assessing its advantages and disadvantages for them. Two online questionnaires were administered to evaluate online learning, student happiness, and the advantages and disadvantages associated with the former. The initial survey encompassed data collected from a total of 483 participants subsequent to the transition to online learning in response to the emergency situation. The second survey was conducted among a sample of 853 students who had undergone three consecutive semesters of online courses. The findings indicate that students faced multiple obstacles when transitioning to online learning during the COVID-19 pandemic. The main challenges identified by the students were technological difficulties, psychological issues (around 80%), mental health problems (around 50%), financial problems (nearly 50%), time management (over 50%), and the need to balance studies and private life (about 60%). Half of the student population reported dissatisfaction with online learning, with an increasing trend over time (increasing from 41% to 50.3% between the two measurements). The primary determinants contributing to students' discontent in the context of online learning include distractions and diminished concentration, poor interaction between peers, students, and teachers (similar results found by Almahasees et al., 2021; Riaz et al., 2023), psychological challenges (boredom, anxiety, and frustration), and management-related concerns. Students also mentioned loneliness and isolation as problems that they associate with the increased workload during online learning.

According to the study by Maqableh and Alia (2021), the main positive aspects of online learning reported by students can be categorized as follows: effectiveness (time and cost of transportation saved), health and safety (reduced risk of contracting the COVID-19 virus), convenience (ability to attend classes from home and have control over course materials online), and increased participation (facilitated by the ease of accessing recorded classes and course materials). Being prepared for online learning promotes

student engagement, which, together with teachers' active involvement, social presence, support, and interaction increases student satisfaction (Alenezi, 2022; Jayanthi & Rajalakshmi, 2022).

When, in general, students report a lower level of motivation during the pandemic period (Almahasees, et al., 2021, Aguilera-Hermida 2020), this study shows a difference in perception between the two study levels, with master's students being more motivated to participate in courses, seminars, or labs, compared to undergraduates. Regarding obstacles to involvement in distance learning and potential dropout, a large percentage of students (more than a quarter at bachelor level and 20% at master level) stated that they encountered problems due to material causes, such as lack of equipment or adequate internet connection. The educational institutions were not very likely to provide any material support for these students. The risk of dropping out was predominantly high among bachelor students (15.3% compared to 11.5% in the case of master's students).

In Romania, a series of sociological studies have been carried out in different universities, especially during the first phase of the pandemic, evaluating the experiences and attitudes of students and teachers towards educational transformations. For example, the National Student Survey, a large survey conducted among 23,706 respondents from 76 higher education institutions, collected students' perceptions of the transformation of higher education, their satisfaction with the quality of the study programme and with the services offered by the university during the pandemic period, and showed a high level of student satisfaction in general (Deaconu & Olah, 2022; Olah et al., 2022). At the beginning of the lockdown, a different online survey was carried out in Iaşi among students from the Faculty of Philosophy, Sociology and Political Science which pointed to general dissatisfaction among students with the strategies of their teachers to address the pandemic, leading to concern for their future (Apostol, 2020). In a somewhat later research, Butnaru et al. (2021) demonstrated that social background shaped students' chances to meaningfully participate in digital education.

Starting with 2021 and with the availability of the vaccine on a larger scale, universities have gradually reopened their gates and allowed for a return to the classrooms – albeit these decisions were just as varied as initially the ones that switched to digital education. Policy and decision makers at all levels relied on data, as well as on their own experience, when trying to propose an optimal combination of classroom and

digital learning. By 2021 and 2022 it has become obvious in most cases that technology in itself does not address old inequalities of the educational system (Facer & Selywn, 2021), especially in a neoliberal context. However, according to a Swiss study, digital or classroom education could not be evaluated as efficient in themselves, but depends on the specific situation of students, who seemed to be able and willing to choose rationally, according to their study needs and life possibilities, the form of education that ensures that they benefit from the educational offer (Kortemeyer et al., 2023). Our research aimed to investigate a similar question, that is, students' experiences and perceptions of online and offline education and their preferences for their future years of study.

Methodology

1. Research questions and hypotheses

The consequences of the shift of higher education to digital teaching can be explored on multiple levels, from social, economic, or institutional to the personal, where its impact on faculty and on students are both relevant. In addition to the complex impact it had on students' mental health, personal or professional status, it is equally important to investigate the students' assessment and perception of online and face-to-face courses. As part of our attempt to explain their perceptions of and preferences for one form of learning or another, in our paper, we test two hypotheses:

H1. Preferences for different online or offline forms of teaching are determined by students' financial and social background.

H2. Participation in paid employment and higher degree level (MA/MSc) increases the likelihood of preferring online teaching at the university.

2. Data sources

Our research targeted the population of students enrolled at BBU in the academic year 2021-2022, pursuing bachelor's or master's studies on a full-time basis, in Romanian, Hungarian and German.

Data collection was conducted online, using a 44-item questionnaire that covered aspects such as university studies at the time of filling in the questionnaire, respondent's experiences related to both face-to-face and virtual learning, issues related to the Coronavirus pandemic, as well as well-being and socio-demographic data. The questionnaire, available both in Romanian and Hungarian, was developed by members of the Faculty of Sociology and Social Work in collaboration with experts from BBU's Qualitas Centre. The data collection interval was 24 May–22 June 2022.

The students were contacted by email and were also encouraged through social media posts or by their departments to take the survey, and were offered incentives such as tickets to popular festivals. Students' email addresses were provided by BBU's Directorate of Information and Communication Technology (DTIC), but responses were anonymous. The responses were collected using the QuestionPro platform. Given that the questionnaire was sent to all active students instead of just a sample, the data collection can be considered exhaustive. The final sample consisted of 2,732 respondents.

The sample was weighted by faculty, degree level, and the language of study. The weights ranged from 0.5 to 3, but for most faculties the values were close to 1 (between 0.7 and 1.5). These weights were calculated as the ratio of the number of students in the university's faculties in the academic year 2021/2022 to the total number of students in BBU. Both the students' gender distribution and the distribution by degree level were checked and validated, with the percentages in the sample showing very small variations compared to those in the total BBU student population. The final number of cases following the weighting procedure is 2,572. This sample is representative of BBU's student population and the maximum permissible error is approximately 2.5%.

Results

The majority of the students who took the survey was formed by young women pursuing their bachelor's degree in Romanian, aged on average 23.6 years and studying either economics, business, psychology or political science. Most of the students in our sample were not originally from Cluj, in fact almost 10% were from abroad, but by the

time the research was concluded two-thirds returned to Cluj. Moreover, two-thirds of the respondents came from families where the father's highest education was secondary school and most of the students themselves were still single (see Table A1 in the Annex).

Cluster Analysis

To explore students' experiences and evaluation of their own coping strategies with online education we asked them two sets of questions made up of 4 items each in which they had to assess the degree to which they were able to benefit from online courses, compared to classes held in person. Although data were collected in Spring 2022, the respondents were asked to evaluate courses held in the previous, fall semester. The responses for each of the items are included in Table 1.

Table 1. Students' evaluation of different online and offline education experience (%) (N=2,466)

Variables	Entirely disagree	Rather disagree	Rather agree	Totally agree	Sum
When there is online education, the amount of schoolwork increases.	12.2	30.2	38.8	18.8	100
I understand the material better online than in face-to-face classes.	28.8	30.8	26.1	14.3	100
When I have online classes, I can manage my time better.	6.7	9.9	30.1	53.3	100
I feel less motivated during online classes than during face-to-face classes.	26.3	22.2	24.3	27.2	100
My teachers were prepared and used digital teaching methods well.	3.0	11.7	46.4	38.9	100
My teachers took into account that teaching online is different from teaching in the classroom.	3.4	14.0	44.4	38.2	100
My teachers gave appropriate feedback on homework, assignments, submissions, projects.	3.7	14.2	42.3	39.8	100
The online exams were a good way to assess my knowledge.	10.1	20.5	35.7	33.7	100
My teachers understood the possible problems of the students.	4.6	15.8	43.8	35.8	100

Source: Online survey, Babeş-Bolyai University 2022 (own calculations)

In the next step, we conducted a hierarchical cluster analysis using the variables presented above. Cluster analysis was performed using the Ward method and, based on

the dendogram of the model, three clusters were retained which were sufficiently consistent and relevant to students' attitudes toward online education in relation to the Covid-19 Pandemic. The three groups are the following: The first group was composed of those who prefer blended education, i.e., a combination of online and face-to-face classes. This group accounted for 43.5 percent of the respondents and was the largest group. The second group is that of those who prefer online education, accounting for 28.9% of respondents, while the third one was made up of students (27.6 per cent) who felt the most comfortable with face-to-face education.

The three clusters can be thus characterized in the following way:

1) *'Balancers' (43.5 per cent), that is, those who preferred a combination of online and classroom classes***,** developed better time management during online instruction, although they did not feel they had a better understanding of the subject matter. In terms of motivation, they were more similar to those who prefer face-to-face instruction, feeling less motivated during online instruction, however, they evaluated the online courses of their teachers rather positively, both in terms of preparation, use of digital teaching methods, and online examination.

2) *'Onliners' or 'screenagers' (28.9 per cent)* had not experienced heavier workload during online teaching, also reporting that they had understood the course material better in online classes. From an organizational point of view, these students had experienced an improvement in their time management and a boost in motivation during the period of online teaching. Just like the members of the previous group, they were satisfied with teachers' preparedness for the classes, with the way they had used digital teaching methods and how online exams were able to assess students' real knowledge.

3) *Adepts of face-to-face learning (27.6 per cent)* were motivated in their preferences by the experience that online teaching generally tends to increase the number of tasks for students. They felt less motivated during online instruction and were less able to manage their time or to understand the course material. Still, they were satisfied with their teachers' digital competences, although not to the same extent as 'onliners'. They were also less convinced that online exams were suitable for assessing the student's knowledge.

The sociodemographic profiles of the three clusters are different. Preference for online education seems to be connected with age, level of degree, marital, and social status: older and lower-class students are more likely to find digital teaching more

beneficial. By age, it can be seen that 19 to 22 year-olds prefer a mixed mode of education, while those aged 23 and upwards prefer online education, the latter being the ones who are more likely to be married. Those who prefer face-to-face education are also more likely to be single, aged 22 and under. One main feature is striking relating to the educational attainment of the father: children of unskilled fathers with only primary education are much more likely than others to choose online education (7,6%), which is also related to financial situation, as we will see. By respondents' mother tongue, we observe that Hungarian speakers prefer face-to-face education in much higher proportions (35.0%) than the Romanian-speaking majority (Table 2).

Table 2. Sociodemographic profile of the students, by clusters (%)

	Balancers (mixed education) (43.5%)	**Onliners/ Screenagers/ (28.9%)**	**Adepts of face-to-face learning (27.6%)**	***Total***	**Cramer`s V**
Age group**					.222
19-20 years old	27.1	20.5	31.0	26.2	
21-22 years old	38.2	24.4	44.7	36.0	
23-24 years old	20.4	20.3	17.1	19.5	
25-30 years old	7.9	13.9	5.4	9.0	
Over 30	6.4	20.9	1.8	9.3	
Total	**100.0**	**100.0**	**100.0**	**100.0**	
Marital status**					.194
Single, no relationship	41.0	32.2	51.1	41.3	
In a relationship ("seeing someone") but living separately	34.9	26.9	34.4	32.4	
In a relationship and living with my partner	17.4	22.3	13.1	17.6	
Married	6.0	17.1	1.3	7.9	
Divorced	0.5	1.4	0.1	0.6	
Widowed	0.5	1.4	0.1	0.6	
Total	**100.0**	**100.0**	**100.0**	**100.0**	
Father's education*					.072
Primary school (8 grades) or less	4.1	7.6	3.3	4.9	

	Balancers (mixed education) (43.5%)	**Onliners/ Screenagers/ (28.9%)**	**Adepts of face-to-face learning (27.6%)**	***Total***	**Cramer`s V**
Father's education*					
Vocational school (no school leaving certificate)	24.8	**21.3**	22.5	23.2	
Secondary education	29.5	**33.1**	34.5	31.9	
Post-secondary school, technical school, other non-university education	10.4	8.6	8.7	9.4	0,72
University	20.1	20.3	20.9	20.4	
Postgraduate education (master or doctorate)	11.1	9.0	10.2	10.3	
Total	**100.0**	**100.0**	**100.0**	**100.0**	
Language of the survey**					.245
Romanian	81.9	90.8	65.0	79.8	
Hungarian	18.1	9.2	35.0	20.2	
Total	**100.0**	**100.0**	**100.0**	**100.0**	

* p<0,05; ** p<0,01; Gender, Type of settlement, Type of municipality not significant.
Source: Online survey, Babeș-Bolyai University 2022 (own calculations)

On the one hand, the variables of the learning situation confirm the previous findings: preference for online education increases with age and degree level. The relationship between the age of the respondents and their preferences implies that bachelor's students tend to prefer face-to-face instruction, while master's students are more likely to prefer online and mixed modes of instruction. By field of study, differences are less significant, students in natural science, sport and humanities preferring more face-to-face education, while students in economics and social sciences prefer more online education (Table 3).

Table 3. Study characteristics of the students, by clusters (%)

Variables	**Balancers (mixed education) (43.5%)**	**Onliners/ Screenagers/ (28.9%)**	**Adepts of face-to-face learning (27.6%)**	*Total*	Cramer`s V
Level of degree**					.149
Bachelor' degree	77.4	66.9	83.5	76.1	
Master's degree	22.6	33.1	16.5	23.9	
Total	**100.0**	**100.0**	**100.0**	**100.0**	
Field of study**					.071
Mathematical Sciences	11.9	8.4	11.0	10.7	
Natural Sciences and Sports	11.9	9.1	14.0	11.7	
Economics and Law	32.6	35.9	29.0	32.5	
Social Sciences	29.8	33.4	28.7	30.5	
Humanities	13.8	13.2	17.2	14.6	
Total	**100.0**	**100.0**	**100.0**	**100.0**	
Where did you live during the first semester of the academic year 2021-2022?**					.179
Mostly in Bucharest	0.4	2.1	0.4	0.9	
Mostly in Cluj-Napoca	58.5	38.5	70.1	55.9	
Mostly in another Romanian city	24.3	36.6	17.5	26.0	
Mostly in a Romanian village or town	14.6	19.5	11.0	15.0	
In a large city abroad	2.1	3.4	0.9	2.1	
Total	**100.0**	**100.0**	**100.0**	**100.0**	

* p<0,05; ** p<0,01
Source: Online survey, Babes-Bolyai University, 2022 (own calculations)

The role of social-material status in online education preferences is confirmed by the answers to the question on the subjective assessment of the size of the total family income. To start with, among those who preferred classroom education the probability to be based in Cluj at the time of the survey was nearly double, compared to "onliners". There are further significant differences between "onliners" and the adepts of face-to-face learning in terms of the financial background provided by their families. The share of those students who evaluate their families' material status rather negatively (that is, the first three options) among the "onliners'" group is more than 10 percentage points higher than among the face-to-face adepts' group. Similarly, those students who were more

satisfied with online teaching were more likely to come from families which were hit harder by the pandemic and almost twice as likely as the ones who prefer classroom learning to be in employment. Students' paid work is presumably one of the most decisive factors to shape preferences for one teaching mode or another. Generally, an increasing share of students has taken up paid work during the past years. In March 2020 nearly one third of BBU students were in some sort of employment, which has seen a significant boom during and due to the pandemic: by the Spring of 2022 44% of students were working. If employed, onliners on average work 10 hours more per week than those who prefer face-to-face classes, but are less likely to have flexible schedules (Table 4).

Table 4. Financial characteristics and economic status of students, by clusters (%)

	Balancers (mixed education) (43.5%)	**Onliners/ Screenagers/ (28.9%)**	**Adepts of face-to-face learning (27.6%)**	*Total*	Cramer`s V
Where do you currently live**					.213
Cluj-Napoca	69.9	44.5	81.2	65.7	
My permanent residence (outside Cluj-Napoca)	26.5	48.1	15.6	29.7	
Other place than permanent residence	3.6	7.4	3.2	4.6	
Total	**100.0**	**100.0**	**100.0**	**100.0**	
Accommodation arrangement in Spring 2022 (of those based in Cluj-Napoca?)**					.139
At home with my family	11.2	16.6	7.2	10.9	
I live in university residence	25.6	16.3	29.1	25.0	
In a rented home, alone	10.5	14.7	7.6	10.4	
In a rented home, with others	43.0	36.7	48.6	43.7	
In my own or family apartment, alone or with others	8.1	13.2	6.9	8.7	
Elsewhere	1.5	2.5	0.5	1.4	
Total	**100.0**	**100.0**	**100.0**	**100.0**	
How do you rate your family's total income?**					.064
Not enough for basic needs.	2.9	2.9	2.1	2.7	
Only enough for basic needs.	9.4	10.1	6.7	8.9	
We live acceptably, but we can't afford to buy more expensive things.	27.7	33.9	28.9	29.8	
We can buy more expensive things if we cut back on other spending.	51.3	46.8	52.6	50.3	

	Balancers (mixed education) (43.5%)	**Onliners/ Screenagers/ (28.9%)**	**Adepts of face-to-face learning (27.6%)**	*Total*	Cramer`s V
How do you rate your family's total income?**					
We can buy everything we need without cutting back.	8.8	6.3	9.7	8.3	
Total	**100.0**	**100.0**	**100.0**	**100.0**	
How has the epidemic affected your family financially?**					.066
The epidemic has affected us very negatively financially.	7.1	11.3	7.2	8.4	
Rather negatively affected financially by the epidemic.	41.1	41.7	42.4	41.7	
The epidemic has not affected us financially.	46.6	43.1	46.5	45.6	
Rather positively affected financially by the epidemic.	4.9	2.9	3.4	3.9	
Very positively affected financially by the epidemic	0.2	0.8	0.4	0.4	
Total	**100.0**	**100.0**	**100.0**	**100.0**	
Have you worked in the last 4 weeks in addition to your university studies?**					.208
Yes	40.4	59.7	33.6	44.1	
No	59.6	40.3	66.4	55.9	
Total	**100.0**	**100.0**	**100.0**	**100.0**	
On average, how many hours a week did you work at the time of the survey?					
Average working hours per week (F=34,3***)	27.8	33.1	23.3	28.9	
Flexibility of work**					.163
I have a fixed schedule, it is not flexible.	27.0	39.2	20.6	30.5	
The schedule is partially flexible.	45.3	45.3	39.9	44.2	
The schedule is totally flexible.	27.7	15.5	39.5	25.4	
Total	**100.0**	**100.0**	**100.0**	**100.0**	

**p<0.01 level significant associations (Chi-square)
Source: Online survey, Babeș-Bolyai University, 2022 (own calculations)

Experience seems to shape preferences, as those students who were more satisfied with online education were also more exposed to it during the semester which

preceded our survey. Also, if being offered the possibility, those who developed adequate strategies to tackle online learning would continue to pursue their studies online even after the pandemic (Table 5).

Table 5. Online education experiences and preferences, by clusters (%)

	Balancers (mixed education) (43.5%)	**Onliners/ Screenagers/ (28.9%)**	**Adepts of face-to-face learning (27.6%)**	*Total*	Cramer`s V
How was the education delivered in the first semester?**					.141
Exclusively online	64.8	74.8	57.0	65.5	
Mixed, hybrid mode	35.2	25.2	43.0	34.5	
Total	**100.0**	**100.0**	**100.0**	**100.0**	
If you had to choose, what form of teaching would you choose for the next academic year?**					.410
Online (100%)	24.3	64.7	8.7	31.8	
Traditional face-to-face (100%)	25.5	3.1	59.5	28.5	
Hybrid, mixed education	50.2	32.1	31.8	39.8	
Total	**100.0**	**100.0**	**100.0**	**100.0**	

* p<0,05; ** p<0,01, ***p<0,001
Source: Online survey, Babes-Bolyai University (FSAS), 2022 (own calculations)

Table 6. Technical conditions of participation to online education by clusters

Questions		Balancers (mixed education) 43,5%	Onliners/ Screenagers/ 28, 9%	Adepts of face-to-face learning 27,6%	*Total*
What did you participate in online classes with?					
smartphone	often	21.7	23.6	17.9	21.2
	every time	12.7	18.8	7.5	13.0
computer or laptop	often	34.4	30.6	39.9	34.8
	every time	54.9	58.1	49.6	54.4
tablet	often	2.0	4.1	1.8	2.5
	every time	.6	1.7	.9	1.0
To what extent were the following resources available to you last semester under acceptable conditions?					
Functional computer/laptop***	To a large extent	13.5	11.2	16.9	13.8
	Totally	82.8	85.4	77.5	82.1
Specific software we have studied ***	To a large extent	25.6	19.5	29.1	24.8
	Totally	50.1	59.7	46.9	52.0
Video camera***	To a large extent	19.7	19.1	20.7	19.8
	Totally	70.4	70.5	65.5	69.1
Microphone*	To a large extent	17.1	13.9	18.6	16.6
	Totally	75.0	78.9	71.1	75.0
Bibliography available online**	To a large extent	41.1	36.0	44.2	40.5
	Totally	39.7	51.9	32.6	41.3
Functional internet connection***	To a large extent	38.8	24.7	41.7	35.5
	Totally	53.5	71.5	44.9	56.3
Quiet room***	To a large extent	39.3	29.5	40.3	36.7
	Totally	46.8	63.1	36.5	48.7
Quiet family or home climate***	To a large extent	34.5	25.8	40.4	33.6
	Totally	55.5	68.2	38.5	54.4
	Total[1]	100	100	100	100

Obs. 1 The percentages up to total 100% are composed by the answers 'not at all', in 'small part', by columns.
* p<0,05; ** p<0,01, ***p<0,001
Source: Online survey, Babeș-Bolyai University, 2022 (own calculations)

From a technical point of view, a higher proportion of online cluster members always joined classes online, on a computer, which shows that they were better prepared to participate actively. Also, in terms of the technical conditions of online education, we observed a higher proportion of better equipped members in the onliner cluster, both in

terms of functional computer/laptop and software or other accessories (camera, microphone), their online access to literature being significantly better than that of the face-to-face enthusiasts cluster (see Table 6.)

As might be expected, there was a marked difference in the extent to which members of the onliner cluster actively participated in online education and that they took it much more seriously than members of the face-to-face cluster. The majority of "onliners" actively participated in the interactive classes, doing no or less other activities during the lessons than the face-to-face cluster, the majority of whom (60%) engaged in other activities during the online lessons (playing games, working, searching on the Internet, etc.) (see Table 7.)

Table 7. Personal satisfaction with online education, by clusters (%, by columns)

Questions	Options	**Balancers (mixed education) (43.5%)**	**Onliners/ Screenagers/ (28.9%)**	**Adepts of face-to-face learning (27.6%)**	Total
In interactive classes I actively participated and contributed to discussions***	Characteristic to a large extent	38.1	42.0	27.9	36.4
	Total characteristic	13.6	25.4	7.5	153
I did not always manage to pay attention in class.***	Characteristic to a large extent	37.4	15.0	43.8	32.7
	Total characteristic	10.7	4.5	23.1	12.3
I attended class, but at the same time I was busy with something else (games, work, searching the internet, cooking, etc.).***	Characteristic to a large extent	33.3	16.5	41.0	30.6
	Characteristic total	8.5	6.9	19.3	11.0
Total[1]		100	100	100	100

Obs. 1 The percentages up to total 100% are composed by the answers 'not at all', in 'small part', by columns.
* p<0,05; ** p<0,01, ***p<0,001
Source: Online survey, Babeş-Bolyai University, 2022 (own calculations)

According to the data presented in Table 1 members of the online group also assessed teachers' performance in a radically different manner, evaluating it better than those who preferred face-to-face teaching: 71.5 percent of the former group strongly agreed that teachers were well prepared and used online teaching tools well, compared to 10% of the latter. Onliners were much more likely to perceive their teachers as understanding, and were also much more likely to be largely or completely satisfied with the organisational performance of the faculty (85%) than those who preferred face-to-

face teaching (56%). The fact that behind stronger preferences for online classes lays better strategies to tackle its challenges can be proved by two additional pieces of data. On the one hand students who were more exposed to online education and were also more in favor of it, are less likely to experience a strong conflict between study and private life, although they are also more prone to work. On the other, we found that, to a small but significant degree, the success rate at school was also higher for onliners, based on the percentage of students who passed the exams (17.4 versus 11.8%, see Table 8).

Table 8. Evaluation of teacher performance in online education by clusters (%, by columns)

To what extent do you agree with the following?	Options	**Balancers (mixed education) (43.5%)**	**Onliners/ Screenagers/ (28.9%)**	**Adepts of face-to-face learning (27.6%)**	Total
Learning affects your private life.	Often	20.8	16.2	23.5	20.2
	Always	6.1	5.3	8.8	6.6
How do you rate the way the Faculty has managed the relationship with students in organisational matters?**	I am rather satisfied.	59.4	54.3	49.5	55.2
	I am completely satisfied.	15.7	31.0	6.7	17.6
Passed all exams in last semester (Pandemic)***	Yes	15.7	11.8	17.4	15.0
	No	84.3	88.2	82.6	85.0
	Total[1]	100	100	100	100

Obs. 1 The percentages up to total 100% are composed by the answers 'not at all', in 'small part', by columns.
* $p<0,05$; ** $p<0,01$
Source (all tables): Online survey, Babeş-Bolyai University, 2022 (own calculations).

Discussion and conclusions

The sudden and radical transformations caused by the pandemic affected the structural conditions of people's daily lives, including paid and unpaid work, as well as their access to basic services. Education, and within it, higher education, was one of the major social systems that was compelled to react quickly and fundamentally by reducing physical contact. The closing of campuses and the switch to remote instruction have been interpreted during the months and years of the pandemic with the same ambivalence that has shaped societies' attitudes to lockdown in general. Although most experts and stakeholders warned about the pitfalls and negative consequences of education lacking personal encounter, there were also voices who argued that the lockdown just accelerated the necessary and unavoidable digitalization of higher education. Therefore, the pandemic has been seen primarily in terms of momentum for higher education reform, which was thought to strengthen teachers' digital competences and equalize the access of lower-status students to university degrees.

Our paper aims to contribute to the understanding of this dilemma by investigating student experiences and attitudes about different types of education during the pandemic. For this, we conducted a case study in Romania's largest higher education institution, Babeş-Bolyai University from Cluj-Napoca in Spring 2022, through an online survey among bachelor's and master's students. The timing of our study is special, as data collection was carried out in the period when all institutions were gradually reinstating face-to-face interactions, but both universities and teachers were granted significant autonomy to decide the extent to which they were willing to return to classrooms. The retransition to in-person functioning was not without tensions, however: some people were still considering the threat of the virus significant, others, especially students, were either working or lacking proper accommodation in the location of their university.

The present analysis focuses on students' evaluation of the teaching methods that had been used during the first semester of the academic year 2021-2022, and of their own coping strategies, attempting to understand the conditions that shaped students' preference for online or face-to-face education. In particular, we were interested to find out how students assessed their own participation in courses and to identify the factors

that determined their attitudes toward these methods of teaching. In line with previous findings, we tested two hypotheses, which assumed that students of lower social and economic status and those who were taking up paid employment during university studies were more likely to embrace online courses.

Using cluster analysis, we have grouped students into three groups according to their preferences of online, face-to-face or mixed teaching modes. Students who preferred online or blended teaching were those with a financially more vulnerable family situation, while students from better-off families were over-represented in the group with preferences for face-to-face teaching. We also showed that working students preferred online or hybrid teaching more than the rest. It was found as well that older students preferred online teaching methods, most of them studying at master's level.

Our paper brings an important contribution to the scholarly and expert debate on the potential costs and benefits of lowering the threshold of entry to higher education. In contrast to expectations that the digital divide would increase the gap between lower and higher status students in access to online courses, due to a lack of proper technical means or inflexible work schedules, we found the contrary. Although they continued to work, 'onliners', where students of poorer social status and Master's students are over-represented, were better prepared technologically and had better access even to study materials and software. Furthermore, they were more satisfied with their participation and, indeed, passed their first semester exams in higher shares compared to the group that preferred face-to-face courses.

In conclusion, we argue that by the end of the COVID pandemic approximately one third of the students of Babeș-Bolyai University have developed proper strategies to tackle the challenges of online or blended education. Based on our data, we claim that online education provided a real study opportunity for an important group of 'second chance learners' and also that most of them responded with a higher level of motivation and readiness to meet teacher expectations. Therefore, the conditions under which digitalization can improve access to higher education need further and more careful exploration.

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Annexes

Table A1. Social demographic characteristics of the sample (%)

level of education	
Bachelor's	76.5
Master's	23.5
language of study	
Romanian	70.9
Hungarian	18.6
other	10.3
year of study	
1	45.6
2	31.9
3	20.6
4	1.1
study extension	0.8
age	
19–20	25.9
21–22	36.5
23–24	19.5
25–30	8.9
31 years and over	9.2
gender	
male	26.6
female	72.9
no response	0.5
marital status	
Not in a relationship	41.3
In a relationship (with boyfriend/girlfriend), but living separately	32.3
In a relationship (with boyfriend/girlfriend) and living together	17.7
Married	7.9
Divorced, widowed	0.8
type of locality	
County town	40.9
Other city in county of residence	25.3
A commune/village in the county of residence	33.8
father's highest education	
Elementary school (8 grades) or less	4.9
Vocational school (without baccalaureate)	23.1
High school (theoretical, vocational, etc.) with baccalaureate	31.7
Post-secondary, other pre-university courses	9.4
University, undergraduate level	20.5
Master's or doctorate	10.3