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Perceptions of new online education models in the context of the COVID-19 pandemic. A case study of the Bucharest University of Economic Studies

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Abstract. *The traditional educational models have been challenged by the appearance of the COVID-19 (SARS-CoV-2) pandemic, which made online education an imperative almost everywhere in order to ensure a minimized health risk for population through social distancing while continuing the educational and administrative activities of educational facilities. As a measure of protection for their students and personnel educational facilities in the European Union decided to close and continue the activities online starting with March 2020. By using the Delphi method with two rounds of questionnaires the present paper intended to inquire the experience of students from the German department of the Faculty of Business Administration of the Bucharest University of Economics Studies in Romania in the early stage of complete online teaching due to the COVID-19 outbreak. The results of the inquiry indicated the majority of students evaluated positively the easiness and accessibility of information and tasks during the online courses, tended to feel still as a community and not as isolated individuals and preferred to continue with both online and face-to-face classes in the upcoming period, thus, overall rating positively the online teaching of the second semester between March 2020 and May 2020.*

The study offers a basis of inquiry for future research papers in the sense of analyzing the public perceptions of a sample of students from the included faculty in order to determine improving directions for the future of online learning.

Keywords: management strategy, online education model, COVID-19, perceptions, online learning.

Introduction

While the world is facing the challenges of a major outbreak of the COVID-19 (SARS-CoV-2) virus, educational institutions have been forced to adapt from face-to-face teaching to an online environment of teaching and other research and educational activities in order to ensure continuity. The COVID-19 pandemic has made the educational institutions go from offline to online teaching (Dhawan, 2020; Chayomchai, 2020). According to UNESCO (2020) more than 1 billion learners, approximately 61,9% of the total global learners, were affected already in March 2020 by the COVID-19 pandemic, which imposed the closure of educational facilities. As a result educational institutions found themselves facing a major issue of continuing the educational, research and other types of activities of their employees and ensuring the continuity of the teaching process for their students.

Due to the need of social distancing and isolation of population imposed through law by several countries globally, the online education was one of the only, if not the only solution to ensure both continuity of the educational facilities' personnel activity and their students' learning programmes. While online education has proven to be an effective method to continue the activities of educational facilities, the challenge now lies in the varied methods and levels of using technology to ensure a quality remote learning from the perspective of the learners as well (Duraku and Hohxa, 2020; Onea, 2020). Distance learning is a formal learning activity, which takes place

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when students and teachers are separated by geographic distance or by time, while learning is performed through communications technology such as television, videotape, computers, email, and mail (Appana, 2008; Pollák, et al., 2021).

The COVID-19 outbreak forced the massive and in many times complete digitalization of teaching, exams, graduations and other activities of the members and students of Universities in the European Union and worldwide, but also the digitalization of the society in general. Romania was one of the first countries, where universities and educational facilities introduced online education in order to reduce the COVID-19 cases starting with the 11th March 2020.

More regions were equipped with Internet and technology facilities as a consequence of social distancing due to the pandemic. According to the report of the UN's International Telecommunications Union, before the COVID-19 outbreak only 47% of the population of developing countries used the Internet, while after the outbreak the percentage increased to 86% of the population of developed countries (EN.UNESCO, 2020). The digitalization of the educational systems all over the world also emphasized the issue of many learners from several developing economies, who do not have access to technology to attend courses, as well as costs and ensuring the necessary IT infrastructure and training of personnel.

However, remote learning is generally positively considered as being associated with more creativity and innovation of teachers and students as according to certain studies (Yokozeki, 2020), as well as other advantages, such as accessibility from any place with Internet or Wi-Fi, flexibility of the space you work from, such as from home, which is associated with less stress, lower commuting costs to the university for personnel and students, possibility of a direct and rapid feedback to students (Gilbert, 2015).

Other authors found disadvantages of online learning, including: collaborative learning, student-faculty interactions, and discussions with diverse others and less exposure to effective teaching practices, less social interaction and feeling of isolation and lower quality of interactions (Dumford and Miller, 2018, Gilbert 2015; Sinoi, 2021).

Thus, online learning has determined a change in the modelling of activities and organization within educational facilities, which represented a challenge itself for all participants of the teaching activity.

The present paper inquires the experience of students with online learning during the second semester of 2020 during the COVID-19 pandemic and the closing of the educational teaching in terms of some of these advantages and disadvantages, such as easiness of access to information, homework and other tasks online, the quality of connection, in terms of feeling isolated or feeling as a community, perceived advantages and disadvantages, as well as the preference for online or face-to-face learning in the next years at the Faculty of Business Administration of the Bucharest University of Economic Studies Romania, German department. The study is one of the first to analyse the practical experience of a sample of students during the second semester, which coincided with the closure of educational facilities during the COVID-19 pandemics between March-May 2020.

Literature review

The COVID-19 outbreak has led to radical changes in social interaction and organization, as well as the educational sector in terms of eliminating where possible physical interaction of people (Murphy, 2020). The necessary precautions called “social distancing” or “physical distancing” were introduced in order to reduce interpersonal contact and thus, to minimize the kind of community transmission that could develop quickly in dense social networks like the university

campus (Weeden & Cornwell, 2020). Large scale, national efforts to utilize technology in support of remote learning, distance education and online learning during the COVID 19 pandemic have emerged and developed quickly (Ali, 2020). E-learning has already been implemented partially or totally before the COVID-19 pandemic given the digitization process, the necessity to offer learners the possibility of working and also studying more flexibly, however the pandemic has imposed a complete offer of e-learning in many higher education facilities. Online learning is generally associated with many advantages especially in the current digitalized era.

Main advantages of online learning as mentioned by authors include:

- Adapting of educational facilities in the digitized educational sector in order to maintain competitive advantage;
- Cost effectiveness, as less time and money is spent by learners and teaching personnel with travelling;
- Flexibility, as classes are available online even if the learners are physically distant and can be available 24 hours;
- Can offer a variety of teaching methods;
- Can offer teaching with lower costs (Luaran et al., 2014).

Some of the challenges of online teaching were also emphasized by the World Bank (2020), especially in terms of:

- Transitioning to online learning at scale is a very difficult and highly complex undertaking for education systems, even in the best of circumstances;
- Highly motivated learners, especially those with previous experience in online learning, are the most likely to take the most advantage of online learning opportunities;
- When first going online, education systems and parents should expect dips in student achievement in the short term;
- Organizing digital educational content to align with existing curricula can be critical in providing users and teachers with a way to ensure that the learning opportunities provided correspond to broader educational objectives within an education system;
- Making content available to be mobile friendly and accessible on several devices is critical;
- Staff teaching online need to be supported;
- Universities need to negotiate with internet vendors to help provide access to online learning for students for free or at a cheaper rate;
- Providing supplemental guidance and support on how to use and access remote and online learning content can be critical;
- Some academic subjects are easier to move online than others.

Online education has been previously implemented before COVID-19 as it started at the same time with the creation of the modern Internet in the 80s (TheBestSchools.org, 2019) and has encountered a significant development until current time.

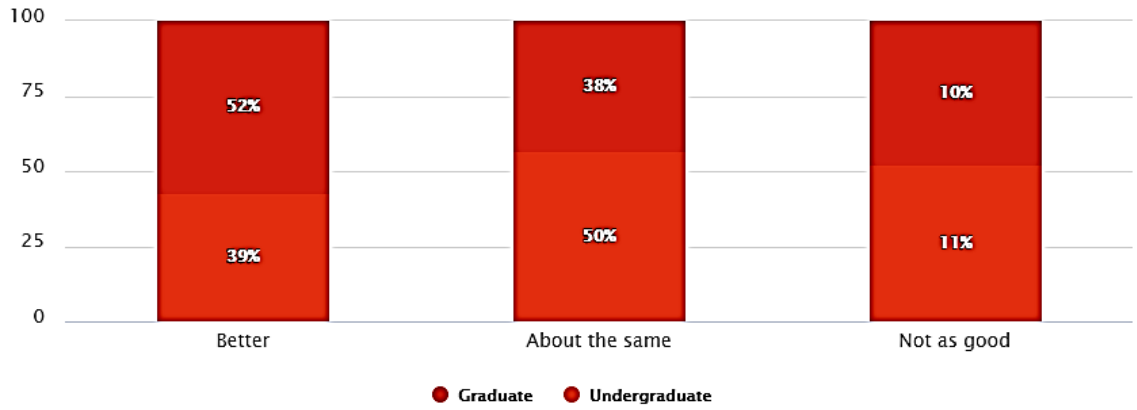


Figure 1. Opinions of online college students on quality of online education U.S. 2019

Source: Statista (2020).

There were more studies in the years preceding the COVID-19 pandemic, such as the report of Statista regarding opinions of online college students on the quality of online education in the United States in 2019, as shown in Figure 1, where 52% of the college students considered online college-level education to be better in comparison to their experiences with college-level education in the classroom. However, several authors have emphasized the issue of interactions, which can lead to a feeling of isolation (Wang and Newlin, 2001, Kruse, 2001).

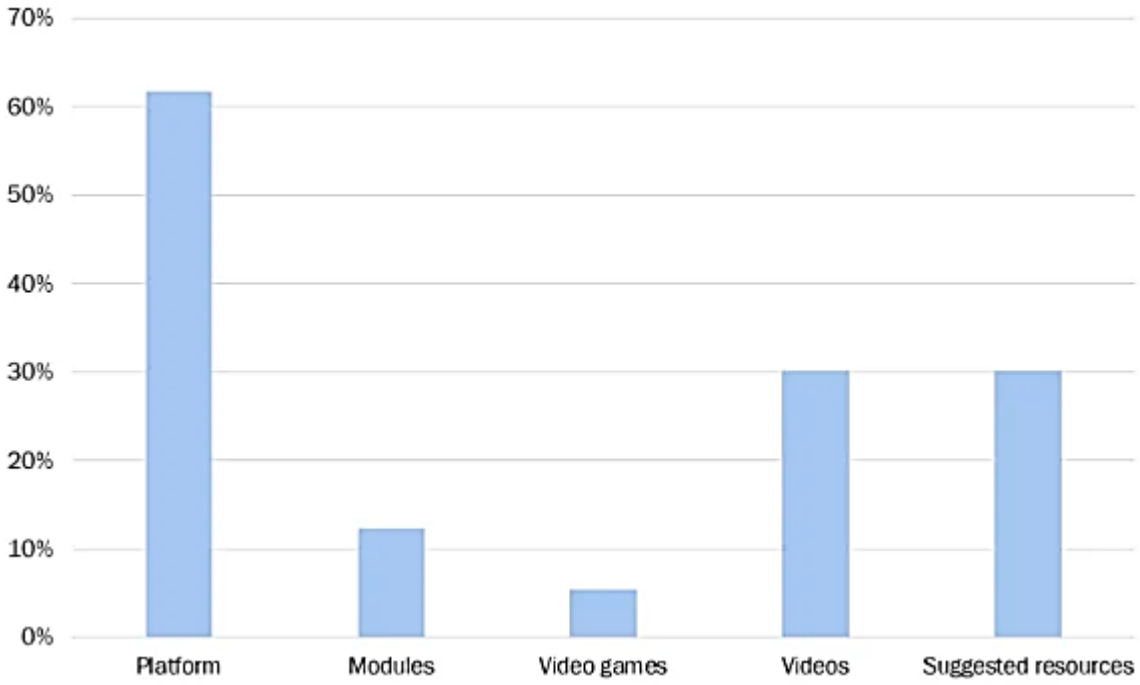


Figure 2. Share of countries using different types of online education resources

Source: Brookings, 2020.

Regarding the diversity of tools and methods used with online education, approximately 60% use online platforms, 35% use educational videos online, while 30% of the countries use online educational resources through social websites or Ministry of Education websites, as shown in Figure 2. Other online educational tools used before and especially during the COVID-19 pandemic were platforms of educational facilities and Zoom, as well as other such similar conferencing services and courses creations platform, for example Coursera and Kaltura (Shwayder and Sampathkumar, 2020). Another aspect is increasing the focus of the learners during the courses as long online classes can have the downside of distractions for students. As a solution to increase efficiency of online learning and the focus of students on remote learning some authors propose that subjects would be content of the in-class teaching into different topics and follow a modular teaching method with each module having a maximum 25 minutes (Bao, 2020).

Methodology

There were 56 respondents willing to answer out of an approximately 150 students population clustered from the German department from the Faculty of Business Administration at the Bucharest University of Economic Studies. The participants referred to their online education experience from the 16th March 2020, when the educational facility was closed due to the COVID-19 until 31st May 2020, namely the end of the semester. One cluster of members of the German department at the Faculty of Business Administration in Bucharest was used. The formula of Cochrane was used in order to determine the necessary sample of respondents. No subpopulations were created. The confidence level used is 95%. The margin of error is +10,-10%.

The average age of the sample of respondents was 21.85 years old. The Delphi method was used with 2 rounds of questionnaires sent through Google forms and interviews at the classes with the students. We used Likert scales from 1 to 5 for each question to rate the experience with the online classes of the students. Users mainly used Zoom, Discord and the online educational platform of the Bucharest University of Economic Studies (online.ase.ro).

In the case of the Delphi process preparation the following steps were performed: choosing a topic and preparing the questionnaires, selecting the sample of students, the first round of questionnaires, informing respondents about the results, the second round of questionnaires, informing respondents about results, analyzing and interpreting statistically the results, writing the final statistical report, sending the report to the respondents (Häder, 2014).

Two hypotheses were established in the beginning of the study:

H1. The respondents of the study felt more isolated with the online education of the second semester, but they found the content of classes more accessible.

H2. The respondents of the study will prefer continuing with online education completely.

The first hypothesis (H1) was tested in the first part of the questionnaire, that referred to used online platforms, the preferred online platform, rating the personal engagement of each participant during online classes and the feeling of community or isolation during online learning.

The second part of the questionnaire inquired the perceived easiness or difficulty in accessing class content and the perceived gained knowledge, as well as if students would like to continue with face-to-face or online or a combination of online classes. In the second part of the study the second hypothesis was tested.

Results and discussions

Perceptions of respondents on the new online educational model due to COVID-19 pandemic used from March 2020 to June 2020 at the Faculty of Business Administration, the Bucharest University of Economic Studies

The first question referred to the preferred platform from the perspective of the respondents. Regarding the preferred platform most respondents (82,1% of the sample) mentioned they preferred Zoom as a platform for online learning, while 10.71% mentioned Discord and 3.57% preferred the educational platform of the University as illustrated in Figure 3. The Adjusted Wald test was performed for the proportions and the results were significant with a p-value below 0.05 for Zoom (p-value=0.017, F= 1404.52) and online.ase.ro (p-value=0.014, F= 1843.27).

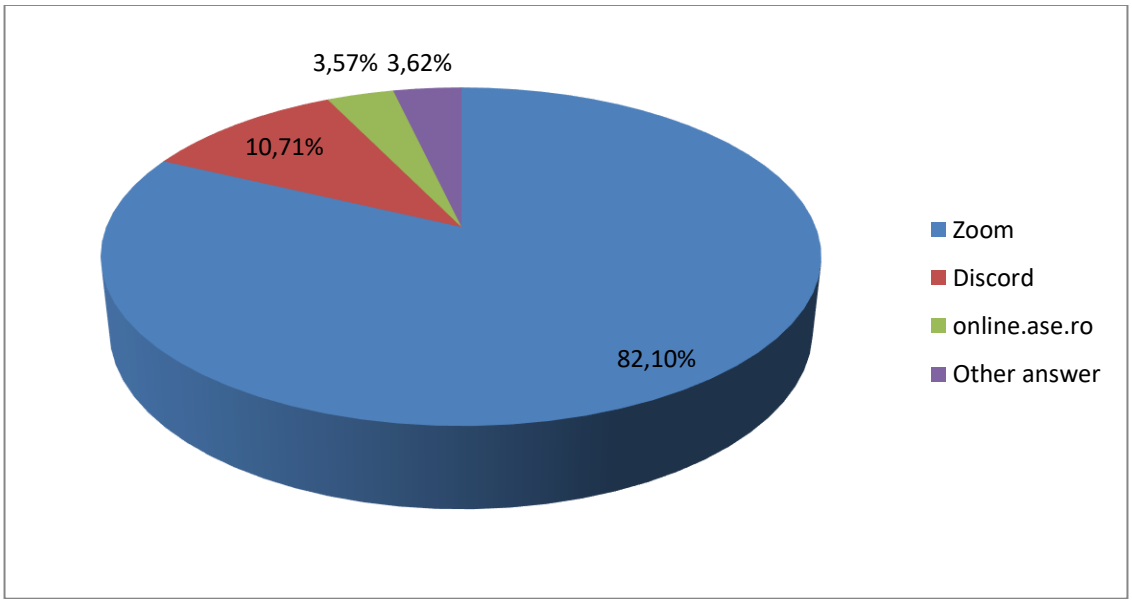


Figure 3. Preferred online education platform as mentioned by the respondents

Source: Authors'own reseach.

When asked about their experience with the online education platform in terms of a very high engagement degree during online classes (grade 1 on Likert scale) and a very low engagement and motivation to participate during online classes (grade 5 on Likert scale) about 51% of the participants mentioned a high engagement on the preferred platform during online classes, meaning responding often, answering tutor's questions, engaging in teamworks for tasks, etc., as illustrated in Figure 4. Only 20% of the respondents mentioned low degrees of engagement during online classes (mentioning a grade of 4 or 5).

The mean was 2.5818 and linearized standard error 0.0456, implying the participants felt engaged during online classes , namely responding often, answering tutor's questions, engaged in teamwork for tasks, etc. The standard error is below 0.05 indicating we accept the mean is different from the median, namely 3.

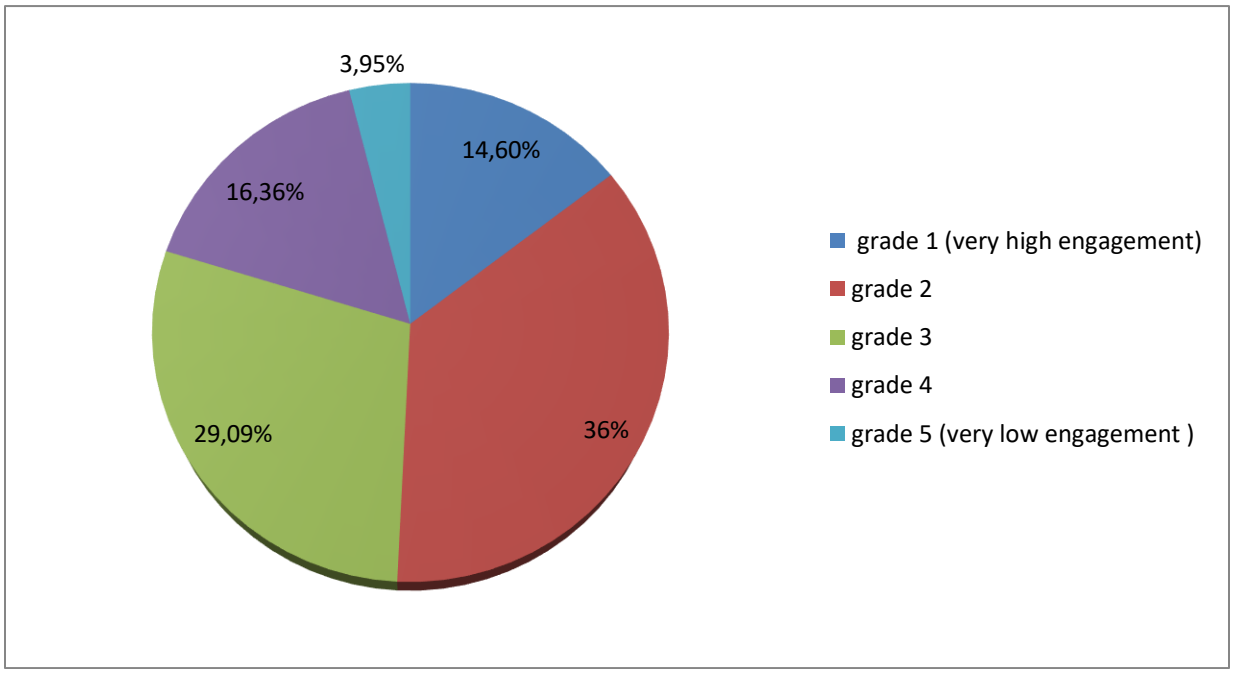


Figure 4. Rating of the experience with the preferred online education platform according to respondents (using a Likert scale from 1-5) grade 1-very high engagement, grade 5-very low engagement during online classes (mean 2.5818, lin. st. error 0.0456)

Source: Authors'own reseach.

The next inquired aspect was the feeling of community or isolation during online classes during the COVID-19 pandemic. Participants had to score from a very strong feeling of community of students, professors, etc. during online classes (grade 1 maximum on Likert scale) and feeling very isolated during online classes and the tendency not to communicate so much with others (grade 5 on Likert scale). The mean was 2.5178 (median value is 3), implying participants felt more towards a feeling of community still on average and the linearized standard error was approximately 0.015. The Adjusted Wald test for the mean had a result below 0.05, namely a value of 0.021, implying it is significant and the mean is different from 3. Approximately 51.77% awarded grades of 1 or 2, which corresponded to a very strong feeling of belonging to a community of students, professors, etc. during online classes and only 3,57% mentioned they felt very isolated and tended not to communicate to others.30,35% awarded a grade of 3, which is the median value on the Likert scale. Half of the respondents mentioned they still felt much like a community as their previous face-to-face experiences also helped with this.

The following question referred to easiness of accessibility and the perception of gaining knowledge and for this a Likert scale from 1 to 5 was used, where 1 implied ''submitting homework, viewing course materials online, reading material online, posting class materials (PowerPoint presentations and projects) was easy to access, convenient and I earned very good knowledge with this method' and 5 implied ''submitting homework, viewing course materials online, reading material online, posting class materials (PowerPoint presentations and projects) was hard to access and I gained very little knowledge with this''. More than 62% of the participants at the online courses mentioned a grade of 1 or 2 meaning they considered the access to submitting homework, viewing materials and posting class materials was easy to access and that they earned very good knowledge with this method, as illustrated in Figure 5. The mean was 2.19 and the

linearized standard error was 0.014, implying that respondents had more a feeling of engagement during online classes as opposed to the first statement of H1, where it was expected the respondents would feel more isolated with online education. The participants of the study also mentioned they had the feeling of gaining knowledge during the online learning. The Adjusted Wald test for the mean had the following results: F= 3001.13 and a p-value of 0.011, so below 0.05, implying a significant difference of the mean of 3.

The classes at the selected faculty lasted 90 minutes each, as this was imposed by the schedule of the institution.

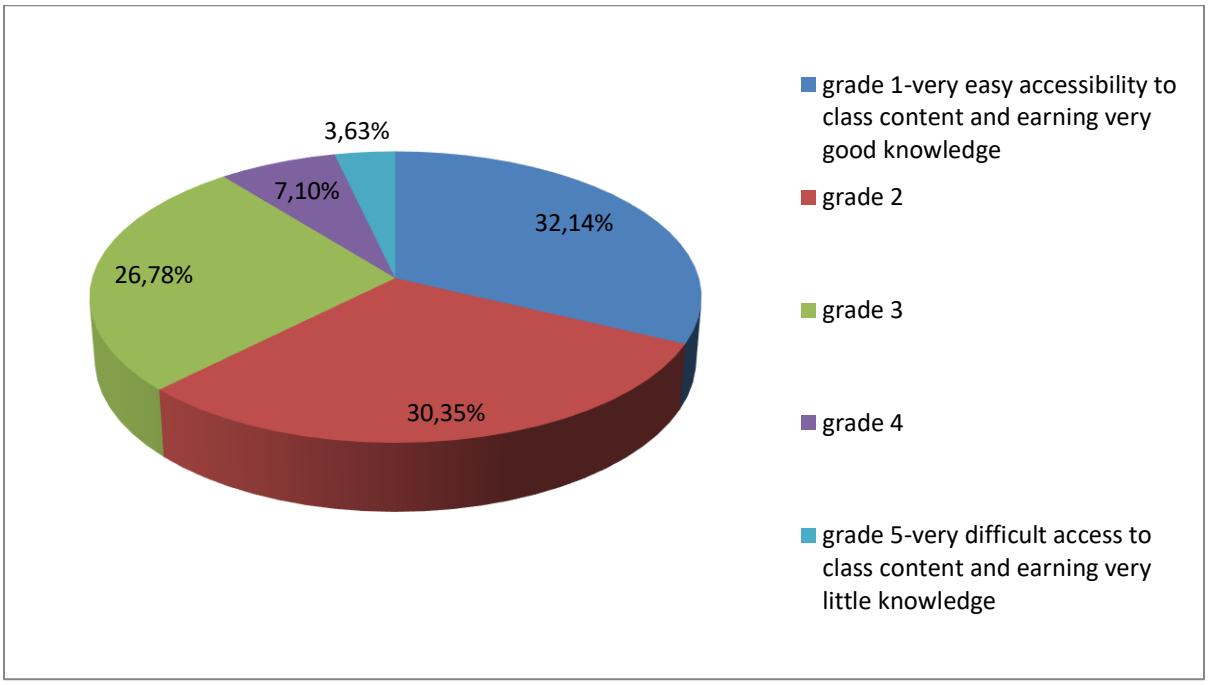


Figure 5. Rating of the experience with the preferred online education platform according to respondents (using a Likert scale from 1-5) grade1-very easy accessibility to class content and earning very good knowledge, grade 5-very difficult access to class content and earning very little knowledge (mean 2.19 and lin. st. error 0.014)

Source: Authors'own reseach.

Participants were also asked if they would like to continue with the online classes or face-to-face classes or a combination of the two. Most participants 61, 8% mentioned they would like to continue with both online and face-to-face classes combined, while surprisingly only 5,45% mentioned they would like to continue completely online, as mentioned in Table 1. Approximately 31% mentioned they would like to have face-to-face classes again. The combined form with face-to-face classes and online classes was motivated by the respondents, that the two complete each other in terms of flexibility, transparency and easier access to content and participation of the online teaching and the personal interaction, filling missing information through direct discussions with the professors in the classes with face-to-face classes. The adjusted Wald test was also performed to see the significance of the proportions. As the p-value was below 0.05 for all elements, the proportions are significant and statistically different from random choice. We also performed the joint adjusted Wald test and the p-value was 0.0194, so also below 0.05, which confirmed the proportions are significant and statistically different from random choice.

Table 1. Participants'answers on continuing with online learning

Would you like to continue with e-learning?				
Sample = 56, Strata 1, PSU=1	Percentage	Lin. Standard Error	Adj. Wald	P-value
Other	1.82%	0.0019	13659.77	0.0054
No, I would like face-to-face learning	30.90%	0.0026	499.24	0.0285
Yes I would like to continue completely online	5.45%	0.0059	1078.94	0.0194
Yes I would like to continue with online e-learning, but also face-to-face learning (combined)	61.81%	0.0052	4845.47	0.0091

Source: Authors'own research.

The last inquired element of the study referred to the perceived advantages and disadvantages of online learning from the respondents' own perspective. The respondents named more than one option in both cases. Referring to the perceived advantages of online learning during the second semester in 2020 most participants named the accessibility from anywhere geographically (66%), no costs and time spent with physical transport as they did not need to go to the educational institution (60.71%) and the same percentage (55.35%) mentioned uniform access to materials and less stress due to staying in a comfortable space. The Adjusted Wald test was also performed as illustrated in Table 2. The majority of students did not choose the options "Less stress as I was not obliged to stay in a classroom full of people" (21.42%) and "Better focus on the topics discussed as less distraction were present for me" (17.85%), both of the outcomes are statistically significant with a p-value below 0.05.

Table 2. Perceived advantages of online learning from the perspective of students

Perceived advantages of online learning	Percentage	Lin. Standard Error	Adj. Wald	P-value
Uniform access to materials	55.35%	0.02	5.15	0.2641
Less stress due to staying in a comfortable space for myself while having the online courses (such as at home in a most comfortable room, etc.)	55.35%	0.02	5.15	0.2641
Less stress as I was not obliged to stay in a classroom full of people	21.42%	0.022	154.86	0.05
Accessibility from anywhere geographically and from laptop/phone as long as there is WI-FI/Internet	66.07%	0.035	20.99	0.13
Possibility of more self-learning	32.14%	0.034	26.89	0.121
Learning new IT skills and new online platforms	42.85%	0.01	49	0.09
No costs and no time spent with physical transport to the faculty	60.71%	0.029	13.34	0.17
Better focus on the topics discussed as less distractions were present for me	17.85%	0.019	282.24	0.03

Source: Authors'own reseach.

Regarding the perceived disadvantages of online learning from the perspective of the participants of the studies most mentioned "Technical issues due to lack of internet periodically, sound problems, materials sending problems, etc. "(53.6%) and "Less socializing for each of them and classmates due to online learning, as during face-to-face classes they used to talk more and meet during breaks, before and after classes" (55.4%). The Adjusted Wald test was also performed and obtained significant values where the p-value was below 0.05, namely in the case of: lack of clear regulations from the University regarding rules for online learning classes, etc., time limiting assignments can be stressful for me, less control over supervising students during assignments, tests, etc., as illustrated in Table 3. The p-value below 0.05 implies the proportions are significant and different from random choice. The answer ''limited competences to use the online platform-I had difficulties because of this'' had also a p-value below 0.05, but was chosen by only one person.

Table 3. Perceived disadvantages of online learning from the perspective of students

Perceived disadvantages of online learning	Percentage	Lin. Standard Error	Adj. Wald	P-value
Technical issues due to lack of internet periodically, sound problems, materials sending problems, etc.	54%	0.021	2.71	0.3474
Distractions on Internet (such as concentrating on games, conversations on social media, etc.) instead of concentrating on the discussed topic during class	30.35%	0.03	36.47	0.1
Distractions from home (such as muting the microphone in orde to eat, do chores, etc.)	44.64%	0.012	19.55	0.1416
Limited competences to use the online platform-I had difficulties because of this	1.78%	0.0019	63504	0.0025
Lack of clear regulations from the University regarding rules for online learning classes, etc.	12.50%	0.013	784	0.0227
Isolation feeling comparing to face-to-face education, where I could physically see and talk to members of my faculty	50%	0.017	0	1
Less socializing for me and my classmates due to online learning	55.35%	0.02	5.15	0.2641
Time limiting assignments can be stressful for me	35.71%	0.002	3136	0.0114
Less control over supervising students during assignments, tests, etc.	14.28%	0.015	544.44	0.0273

Source: Authors'own reseach.

Conclusion

As a conclusion, online education during the COVID-19 pandemic at the German department of the Faculty of Business Administration was overall rated as a positive experience by the majority of the respondents. The first hypothesis was only partly confirmed. The majority of the participants did not feel isolated, but had more a feeling of community, meaning they did not confirm the first part of the first hypothesis that expected respondents to feel more isolated.

As 62% of the participants mentioned an easy accessibility of the classes content and satisfaction with the gained knowledge and more than half mentioned a high engagement during online classes, it can be mentioned that the online learning experience was a successful factor in continuity of the teaching and gaining knowledge, confirming the second part of the first hypothesis. The second hypothesis that the respondents would like to continue completely with online education was not confirmed, as the majority of students stated that they would like to continue with online, but also with face-to-face activity in order to complete the online learning (61%). The study also confirms the preference for the Zoom platform from the student users' perspective of the inquired sample.

The research confirmed a mostly positive experience of the participating students, which ensures a basis for future online learning. The general perceived advantages from the literature (Gilbert, 2015), namely accessibility from anywhere geographically was confirmed also in this study by 66% of the respondents, no costs and time spent with physical transport as they did not need to go to the educational institution (61%) and 55.35% mentioned uniform access to materials and less stress due to staying in a comfortable space.

The need for new, innovative models of teaching and interactions between several members of the educational facilities in the context of social distancing was already emphasized in the period of closure starting from March 2020. The online education offers a wide variety of possibilities for learning, however, with the limitations of social interaction, which in time can be discouraged by physical distancing and which is a field that needs a separate handling. However, the need for face-to-face education was still felt by the respondents, the majority mentioning they would like both face-to-face and online education further on. Thus, although online learning offers many advantages, the need for socializing face-to-face with classmates, professors and faculty personnel members regarding courses, feedback, personal connections and other was mentioned by the students, not being able to be replaced by online tools fully. The organizational and process models of educational facilities, especially universities are expected to change and use mostly online educational and interaction tools. A major issue is the need for human interaction for a complete problem solving orientation, as well as the need for more information apart from the one offered online. The Faculty of Business Administration of the Bucharest University of Economic Studies is considering combining face-to-face learning and online learning starting with October 2020, if the legislation will allow it depending on the COVID-19 situation. The proposal is to organize either courses face-to-face and seminars online or vice-versa, as to combine the need for learning, but also for human interaction between students and professors.

The trends for education are expected to be mostly online for the upcoming years as the COVID-19 pandemic is also expected to continue at the same time with legal restrictions of quarantine, social distancing and other health security measures. However, this can affect the social skills of the learners and employees, as less social contact can lead on a longer term to the trend of avoiding it.

A future objective of the present study is to analyse further the perceptions of the students regarding the online teaching experience at the Faculty of Business Administration of the Bucharest University of Economic Studies, as well as in comparison to other faculties from other countries in order to determine best practices and potential improvement measures for the online education process.

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