Adaptation and Perception of Online Learning during COVID-19 Pandemic by Albanian University Students

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Abstract
The aim of this study is to evaluate the perceptions and challenges of Albanian students during online learning carried out due to COVID-19 pandemic. The students were invited via email to give their perception of ongoing online learning. Responses were obtained from 627 college students from various study fields, such as natural, medical, and life sciences. The results showed that students had a more positive attitude towards the classroom learning environment. The main challenges that students faced were the unavailability of internet connection and the lack of technology devices. Students enrolled in technology-based programs and also those with high academic performance were more comfortable and satisfied with online classes (p<0.001). The % of students who preferred the learning process be continued in the classroom was higher than those who preferred online education or a combination of both on-campus and online learning environments (p<0.001). Students firmly state that online learning cannot replace the classroom. The findings suggested that Albanian students are not familiar enough with technology-based education. Online teaching must be integrated gradually into Albanian education depending also on students’ characteristics. The learning process must be effectively organized by professors, taking into account students’ dissatisfactions and difficulties with e-learning and considering the overall limitations of this method.

Introduction
Educational institutions around the world closed the doors during 2020 due to the COVID-19 pandemic. The pandemic has created an enormous disruption of educational systems, affecting 94 percent of learners in more than 190 countries in all continents (UN, 2020). To keep education going on, educational institutions had to quickly adapt to the situation and switch to online learning. Under these global conditions, the teaching establishments could not continue their activities. Hence, alternative learning methods were applied, such as the use of online learning platforms from all the academic community. This learning model which consists of utilizing electronic equipment and information technologies was almost new for the educational system in Albania.

As claimed in previous studies (Rapanta et al., 2020), it is difficult to make a sharp difference between face-to-face learning in the classroom environment and online education, as they are considered both "heterogeneous". However, there are advantages and limitations related to this subject (Mukhatar et al., 2020); online learning is estimated as a supplement to traditional learning and a complementary way of increasing the students' satisfaction and cost-effectiveness (Sadeghi et al., 2014), but it does not seem to substitute the classroom environment, as students find it hard to gain the same amount of knowledge they would gain in the traditional environment (Spurlock-Johnson et al., 2004)

A well completed online course requires a detailed and organized lesson plan design, technical skills, instructional materials, early preparation, and online teaching experience. Furthermore, studies show that students have to deal with many problems, such as the lack of motivation and suitable learning environments since they are isolated (Bao, 2020). In the case of on campus learning, if the students struggle, the faculty members can determine, through the observation and reactions, whether they are in need of something and attempt to take over the situation, which could not be completely possible during online learning.

The distance learning approach has however some potential benefits: Students are more autonomous, so they can be self-paced during their study process, be able to review their learning resources, and the instructors can
monitor their progress, which means that this model of learning is more focused on the students and offers flexibility in choosing the proper time for their studies (Bao, 2020; Dyrybye et al., 2009). Increased access and students’ ability to prepare for a future based on technology are considered successful points of online learning (Appana, 2008). Mirkholikovna (2020) discusses availability, flexibility and low cost as advantages of distance learning and the limited social interaction and participation as disadvantages. Previous studies have shown that the lack of social interactions may reduce motivation and minimize students’ discipline (Ainoutdinova et al., 2017).

According to studies published before the pandemic outbreak (Islam et al., 2011; Duan et al., 2018), demographic factors such as gender, age, the program of study, and level of education influence students’ commitment to e-learning. The student’s adaptation depends on the level of awareness, the level of familiarity with information technology, and the willing to get involved and adapt to the e-learning approach (Naresh et al., 2016). In this never-before-seen situation created by the pandemic, for the very first time, Albanian students have been confronted by the prospect of distance learning. As supported by a study that concluded that the pandemic had adverse effects on school characteristics (Onyema et al., 2020), the increase in the use of technology must be the focus of higher education to prevent the effects of COVID-19 pandemic and other future pandemics in the learning process (Ananga, 2020). Students certainly have their perception and adaptation approaches to online learning during this global health crisis. The purpose of this study was to evaluate the Albanian students’ adaptation, challenges and perceptions towards online learning, and to estimate the effectiveness of online education in Albanian higher education.

**Method**

**Data Collection and Study Group**

The population of interest included higher education students who were above 18 years old. The respondents were invited via email to fill out an online questionnaire. The questionnaire consisted of twenty two closed questions and one open question. The questions were organized into two sections. The first section included eleven questions on the students’ demographic and academic characteristics, e.g., the study program, level of studies, age, gender, job status. This part was completed with questions covering the infrastructure for studying from home (equipment, an internet connection). The second section asked students about their perception of online learning. It included 11 questions on how the COVID-19 pandemic had affected their learning experiences, as well as their performance and expectations.

The questionnaire questions were formulated based on the survey studies conducted on this topic and reviewed by two experts in distance learning. The draft questionnaire was first sent to 15 students in order to avoid possible problems in the process and to achieve the result reliably. After this step, the survey questions are finalized. The web-based survey was sent to students via email on 16 May 2020 and remained open until 17 June 2020. By 17 June 2020, 627 students had participated in the study, coming from different study fields such as natural and computer sciences, medical studies, and life sciences. The study fields were then divided into two categories based on their relation with technology. The IT based programs included mathematics, computer sciences, and engineering, while the non-IT-based programs included biology, biotechnology, medical sciences, chemistry, and social sciences. The response rate was 11.1 % (627 out of 5658 invitations sent). Some questions were only offered to respondents who admitted to having had online classes during the lockdown, meaning the number of responses can differ across questions.

Participants follow bachelor’s studies (496 students) and master’s studies (131 students). The respondents’ average age was 20.69 ± 2.01 years, where 83.9% were females and only 16.1% were males. The vast majority (58.8%) never worked during the studies, 24.0% used to be employed previously during their studies but there were no longer, 9.9% of students work part-time, and 7.3% of them have a full-time job. The majority of respondents owned a smartphone (87.9%), but only 63.4% of them had a personal computer or laptop. Most of the students (74.3%) had unlimited access to the internet, 21.4% of them connected with the internet via cellular phone service providers, and the rest (4.3%) used public Wi-Fi.

**Statistical Analysis**

The data preprocessing step and statistical analysis were performed in SPSS 26.0. The data is first explored using frequencies, descriptive statistics, and graphical visualizations. The Shapiro-Wilk test is performed to
check if the numeric data followed a normal distribution. Chi-square test is used to test the relationships between general features of the respondents and several selected nominal variables in the questionnaire. Mann Whitney test is performed to determine if there was any significant difference between the medians of two groups for the Likert scale questions (1 to 4 scale) which are considered as ordinal variables since they did not met the normality assumption. Kruskal Wallis test with pairwise comparisons is used to determine if there was any significant difference between the medians of more than two groups for the Likert scale questions (1 to 4 scale). Spearman Correlation is used to estimate the correlation between ordinal variables and the chi-square goodness-of-fit test is used to determine whether the distribution of cases in a single categorical variable was equal across categories.

Results

Adaptation to Online Learning

The results showed that only 52.5% of respondents adapted easily to online learning during the COVID-19 spring 2020 lockdown. In addition, only 14.2 % stated that the learning process was easier to follow and understand in online class, whereas 85.9% of them did not share the same opinion. More than half of the students claimed that they had to change their method of study during distance learning studies. Based on the Likert scale question, 47.4% of students agree or strongly agree that they had difficulties in acquiring and processing course materials because of the lack of familiarity with technology (see Table 1).

Table 1. Considerations about Online Learning during the COVID-19 Pandemic

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have adapted easily to online learning</td>
<td>14.8 (85)</td>
<td>32.6(187)</td>
<td>34.7(199)</td>
<td>17.8(102)</td>
<td>3.00</td>
</tr>
<tr>
<td>The learning process is more effortless to understand in online class.</td>
<td>52.7(302)</td>
<td>33.2(190)</td>
<td>10.5(60)</td>
<td>3.7(21)</td>
<td>1.00</td>
</tr>
<tr>
<td>I have changed my method of learning.</td>
<td>17.1(98)</td>
<td>26.9(154)</td>
<td>36.3(208)</td>
<td>19.7(113)</td>
<td>3.00</td>
</tr>
<tr>
<td>I have difficulty in accessing and processing course materials because of technology devices.</td>
<td>19.0(109)</td>
<td>33.3(191)</td>
<td>30.4(174)</td>
<td>17.3(99)</td>
<td>2.00</td>
</tr>
<tr>
<td>I feel tired of learning via technology devices for a long time</td>
<td>5.2(30)</td>
<td>14.8(85)</td>
<td>34.0(195)</td>
<td>45.9(263)</td>
<td>3.00</td>
</tr>
<tr>
<td>Online exams cause me more anxiety than examinations in the classroom.</td>
<td>16.8(96)</td>
<td>17.1(98)</td>
<td>23.2(133)</td>
<td>42.9(246)</td>
<td>3.00</td>
</tr>
<tr>
<td>Online learning has a positive impact on my academic performance</td>
<td>36.1(207)</td>
<td>36.3(208)</td>
<td>22.5(129)</td>
<td>5.1(29)</td>
<td>2.00</td>
</tr>
<tr>
<td>I will achieve my academic goals through online learning</td>
<td>27.1(155)</td>
<td>40.3(231)</td>
<td>25.0(143)</td>
<td>7.7(44)</td>
<td>2.00</td>
</tr>
<tr>
<td>My technology skills have improved during online learning</td>
<td>14.8(85)</td>
<td>22.3(128)</td>
<td>41.4(237)</td>
<td>21.5(123)</td>
<td>3.00</td>
</tr>
<tr>
<td>I have reduced the use of internet for entertainment.</td>
<td>19.5(112)</td>
<td>26.9(154)</td>
<td>32.6(187)</td>
<td>20.9(120)</td>
<td>3.00</td>
</tr>
</tbody>
</table>
Moreover, there was a statistically significant difference in perceived learning difficulty via devices between students with technology educational background and those whose study field is not technology based (Mann Whitney U=32881.0; p=0.009). Students enrolled in technology-based study fields had less difficulty in acquiring course materials than students who attended other study programs, with respective medians equal to 2 and 3. About 79.9% of students claimed that they felt tired during online learning for a long period of time, and this was positively correlated with the difficulty of acquiring and processing course materials (Spearman Correlation ρ=0.452, p<0.001). Master’s students adapted easier to online learning compared to bachelor’s students (median 2.5 for bachelor’s students and 3 for Masters’ students; U=18442.0, p=0.001).

About 66.1% of respondents agree or strongly agree that online exams cause more anxiety compared to examinations in the classroom, and only 27.6% of them admit that distance learning had a positive impact on their academic performance. Furthermore, only 32.7% of students think that they would be able to achieve their academic goals via online learning mode. Students with medium and high academic performance had a more positive perception about the influence of technology than those with low academic performance (Kruskal Wallis, $X^2(2) = 8.943$, p= 0.011). About 62.9% of students admitted that their technology skills had improved since the beginning of online learning and 53.5% declared that they had reduced the use of technology for entertainment purposes (see Table 1).

### Perceptions on Online Learning

About 68.1% of students showed that they were more motivated in the classroom, 5.9% in online class and 26% were equally motivated in both learning environments. Additionally, the learning process for the 75.4% of students was more attractive in class and for 11.2 % learning was more interesting during e-learning (see Figure 1). There was a statistically significant association between the field of study and the perception of learning (Chi Square $X^2(2) = 11.625$, p= 0.003). About 15.2% of students with a technology background of study say that online learning is more interesting, while 8.9% of students enrolled in non-technology-based programs considered the learning process more interesting during online class.

![Figure 1. Students’ Perceptions about Online and on Campus Learning](image-url)
About 64.9% of students say that they were more productive and committed to their study during face-to-face learning, 9.9% during online learning and 26.1% are equally productive in both modes. Only 9.8% claimed to be more concentrated on online learning and 13.1% were more communicative during online class while 63.7% were more active in the classroom and 23.2% show the same behavior in both environments. Half of the students (52%) stated that their level of attendance was the same in both online and on campus lectures (see Figure 1).

About 59.2% of students estimated that the use of technology is not difficult for learning purposes, but 85.2% of them think that the on-campus mode increases students’ engagement compared to the distance learning approach. Only 10.1% agreed that virtual laboratories have the same effectiveness as the physical laboratories. There was a significant difference in the perceived effectiveness of virtual laboratories between different programs of study (Kruskal Wallis $X^2(1) = 39.799$, $p<0.0001$). Students who follow study programs based on laboratories have a more negative perception on virtual labs.

Despite the difficulties and negative opinions on distance education, 58.4% of students agree that technology brings large benefits to education and 44.8% of them agree that online learning has been a positive experience overall, despite coming because of the pandemic (see Table 2). The agreement with the benefits of technology were strongly correlated with the positive or negative experience students had during online classes (Spearman Correlation $r=0.535$, $p<0.0001$).

### Table 2. Perceptions about the Role of Technology on Education

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>The use of technology is difficult for learning purposes.</td>
<td>25.0 (143)</td>
<td>34.2 (196)</td>
<td>26.4 (151)</td>
<td>14.5 (83)</td>
<td>2.00</td>
</tr>
<tr>
<td>On campus traditional learning increases students’ engagement compared to online classes.</td>
<td>4.9 (28)</td>
<td>9.9 (57)</td>
<td>26.9 (154)</td>
<td>58.3 (334)</td>
<td>4.00</td>
</tr>
<tr>
<td>Virtual laboratories have the same effectiveness as laboratories developed in university.</td>
<td>75.0 (430)</td>
<td>14.8 (85)</td>
<td>6.8 (39)</td>
<td>3.3 (19)</td>
<td>1.00</td>
</tr>
<tr>
<td>Technology brings large benefits to education.</td>
<td>9.6 (55)</td>
<td>31.9 (183)</td>
<td>37.5 (215)</td>
<td>20.9 (120)</td>
<td>3.00</td>
</tr>
<tr>
<td>Technology enables a good cooperation between students.</td>
<td>11.3 (65)</td>
<td>28.8 (165)</td>
<td>41.4 (237)</td>
<td>18.5 (106)</td>
<td>3.00</td>
</tr>
<tr>
<td>Online learning is a positive experience despite coming as a result of the pandemic.</td>
<td>21.8 (125)</td>
<td>33.3 (191)</td>
<td>30.5 (175)</td>
<td>14.3 (82)</td>
<td>2.00</td>
</tr>
</tbody>
</table>

This study revealed that there is a significant difference in students' learning preference, where 10.1% of students agreed that traditional learning in class can be replaced by online learning, while 59.3% were not in agreement with this statement and 30.5% of students were undetermined ($p<0.0001$). About 59% of students preferred the learning process to be continued in class, 4.5% online and 36.5% preferred that learning be involved in a combination of the class and online environment ($X^2(2) = 257.372$, $p<0.001$) (see Figure 1).
In the open remarks question, students expressed several positive and negative opinions about their first experience with distance learning as follows:

“I would like to return to university as soon as possible.”

“Learning in the classroom is much more effective, while online learning causes me more stress, we need to get back to university as soon as possible.”

“I think that learning in class is more effective, we are more concentrated, and we express ourselves more freely. Despite the benefits of online learning we had faced technical problems such as the lack of internet, technology devices and also we couldn’t take notes during the lesson.”

“I prefer learning in class because electricity problems do not interrupt the lesson.”

“The prolonged usage of technology devices causes us physical and mental exhaustion.”

“Recently I have vision problems, I am demotivated, my concentration on learning and my desire to study are decreased.”

“I believe that we must move with the pace of time. I attend the lectures more often than I did when in faculty. I am very PRO with online teaching.”

“A combination of online and classroom learning would be incredibly positive for me as a student. The only difficulty I have is the limited internet access.”

“No matter how effective it may be, in these times of pandemics online learning is one of the best choices.”

Discussion

Due to the outbreak of COVID-19 pandemic, higher education institutions in Albania were heavily affected, and students went through unprecedented and stressful situation. On campus lectures were moved 100% online, semesters were postponed, and examinations adjusted. This was the first time, universities switch to online teaching in Albania, and this was done unexpectedly, not allowing the teaching staff and students to prepare for this situation. In our study conducted between 16 May and 17 June 2020, we tried to evaluate how students adapted and what were their perceptions on online learning and teaching.

The Albanian students faced barriers and difficulties during online learning. Only a small percentage of students considered online learning effortless and most students had to change their method of learning to adapt to online class. According to a study in a Spanish university (Alba-Linero, 2020) more than 90% of students claim they need to make more effort in their studies and they feel more demotivated than before. Students stated that their primary problems were the limited internet and the lack of technology devices. Similar findings are reported by Hebebci et al., (2020), Yılmaz İnce et al., (2020), and Kado et al., (2020). As Adnand, (2020) also pointed out, online learning cannot produce effective results in developing countries because of technical and monetary problems.

Students had difficulty in concentrating and understanding course materials and felt anxiety about their exams. Some students declared that they had health problems, mentioning vision difficulties. This was also reported in another study (Subedi et al., 2020) which concluded that 59.6% of students suffered from eye/headache problems during online learning. In addition, Cole et al., 2014 reported that incompatibility with students’ learning style was one of the reasons for students’ dissatisfaction with e-learning. The use of technology devices for a prolonged period caused them tiredness and difficulties in assimilating their course materials. Students’ experiences would be more positive if shorter online parts, was integrated into traditional classes in small online units for students before this situation occurred.

Our study revealed that students enrolled in technology-based study fields are less challenged to online learning and consider this method more interesting compared to students who follow programs without a strong technology background. Educational background and internet usage have an influence on e-learning readiness (Naresh et al., 2016). According to Sofi and Laafon (2020), students appreciated the idea of distance learning through the Google Classroom platform, but by introducing continuous training parallel to this process for the effective utilization of ICT. Liaw and Huang (2011) reported that computer-based experience is a predictor of e-learning attitudes, perceived self-efficacy, perceived enjoyment, and perceived usefulness.

The majority of students felt that they would not achieve their academic goals. Nevertheless, students with medium and high academic performance had a more positive perception about the effect of online education on their academic performance. Bir, (2019) showed that online teaching has a negative effect on students’ academic performance, except for students with high academic performance.
Students were more pleased with the process of learning in the classroom environment, where according to them they were more motivated and productive. Nevertheless, they reported that they spent less time for their studies during online learning, as it was also shown in Kapasia et al. (2020). The majority of them agreed that the university environment engages them to study and did not prefer virtual laboratories, especially those whose study field is based on practical laboratories. Alba-Linero (2020) showed that the practical work has been the most affected part, where the effect of lockdown impacted heavily the medical students, whereas engineering students were less affected. In addition, online test anxiety is one of the reasons for students’ resistance to online learning (Tuncay & Uzunboylu, 2010).

Many students had a positive view of the role of technology in education and 62.9 % of them claimed to have improved their technology skills. The same result is reported in other studies conducted during the pandemic. Kedraka and Kaltisidis (2020) showed that 56% of students had developed new skills. Albanian and other countries’ students prefer the learning process to be continued in class and according to them online learning cannot replace the classroom (Abbasi et al., 2020; Kedraka & Kaltisidis, 2020).

Conclusion

It is the first time that Albanian students attend online learning, and they faced a lot of challenges and dissatisfaction. Characteristics of students such as the educational background and academic performance have an impact on students' adaptation and satisfaction with online education. On top of that, students have a positive opinion about the role and benefits of technology to education. Most students prefer classroom to online learning and according to them distance learning cannot replace the classroom environment. These results suggest that technology must be integrated gradually into Albanian education to be appreciated by students, depending also on their characteristics. In this emergency a considerable support should be provided by the professors to encourage students to get successfully involved in online learning, even those who have limited abilities to cope with online learning because of technical problems.

Acknowledgements

This work would not be possible without the contribution of the numerous students who shared with us their perception and opinions about online learning. We are very grateful to all of them.

References


**Author Information**

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