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University Students' Online Learning Experiences in Context of COVID-19: Study in Greece

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Abstract: Online teaching and learning during the COVID-19 pandemic was a sudden experience for all students, including those studying at university. Therefore, this study aimed to provide evidence on university students' online learning experiences in the context of the COVID-19 pandemic. 24 Greek students participated, and their data were collected via semi-structured interviews. The findings indicated that the main advantages experienced were time-saving and the comfort of being at home, while the main perceived disadvantages regard technical problems (such as bad internet connectivity) and lack of practical training experiences. Students' feelings were negative, in particular, at the beginning of the pandemic. Although communication collaboration with peers was experienced as effective, student-teacher communication-collaboration was described as a positive and negative experience at the same time. For the improvement of online education, students hope to have better university infrastructure, preparation, and training for tutors, as well as student training. Implications for educational policy and practice are discussed, accordingly.

Keywords: Online learning, Student experiences, Student perspectives, University, COVID-19

1. Introduction

During the consecutive COVID-19 lockdowns, universities and higher education institutions had to close, and many institutions implemented emergency remote teaching (Van der Graaf et al., 2021). The adoption of online education on a large scale was a challenge since many universities had not applied this method before the COVID-19 pandemic (and their students were never taught within an online environment). During the pandemic, digital technology such as online courses and e-learning platforms had a key role in students' learning (European Data Portal, 2020), online platforms (e.g., Zoom and MS Teams) were widely used by university students and staff (Saikat et al., 2021), while at the beginning of the pandemic, video conferencing and synchronous courses/meetings were used (Bond et al., 2021). Digital technologies assisted and supported students' online learning, while the sudden transition from face-to-face to online education has affected students in many ways (Iqbal et al., 2022).

Although there is increasing research evidence, from March 2020 onwards, regarding the efforts universities made while transitioning from traditional face-to-face to online distance education during the COVID-19 pandemic and the challenges associated with it (Crawford et al., 2020; Greenhow & Lewin, 2021; Vital-Lopez et al., 2022; Nikolopoulou, 2022a, b), a fewer number of studies focused on university students' online learning perspectives and experiences (e.g., Malik & Dahiya, 2021; Khan et al., 2022; Iqbal et al., 2022). Therefore, this study was carried out to explore Greek university students' online learning experiences in the context of the COVID-19 pandemic. Understanding students' experiences is significant, as these shape their attitudes about online education for years to come (Stewart & Lowenthal, 2021) and provide valuable insights for educational policy and practice. For example, universities can enhance students' online experiences in future crises, when adopting hybrid modes of education. In this study, (i) 'online learning' refers to learning that relies on digital technology and is implemented via the internet – it differs from distance learning, (ii) 'online teaching' differs from 'emergency remote teaching' (as lately proposed by Hodges et al., 2020), but these terms are associated with the existence of distance between students and educators, and (iii) hybrid-blended education is conducted, to an extent, via the internet, as this includes several students being in class while others are online or all students meeting part of the time online and part of the time face-to-face (Sullivan, 2022). In this study, online education refers to the education provided to students as an emergency response during the COVID-19 pandemic.

2. Literature Review

Online and distance learning are not new at the university level, but they are a novel and sudden experience for university students who traditionally attend face-to-face classes. Before the COVID-19 pandemic, online learning represented distance learning or part-time courses from open universities. All studies in this section regard university students' online learning perspectives and experiences during the COVID-19 pandemic (online education was offered as a response to an emergency).

Khan et al. (2022) investigated university students' perspectives on remote education experiences in Dubai. Participants were concerned about altered human interaction (e.g., not active engagement in lessons and limited student interaction) and indicated a preference for synchronous online sessions/lessons, while their challenges were associated with technology (complete dependence on technology, possible internet failure, and stress to adapt), health/wellbeing (e.g., increased screen time), institutional policies (e.g., lack of guidelines on acceptable means of communication and policy for recordings), and privacy issues (lack of private space for study and dislike for using cameras during exams). Advantages/benefits of online learning included continuance of education, more flexibility (for those with difficulty in attending physical classes), availability of recorded sessions, and time efficiency. The culture was found to influence accessibility, assessments, and interaction in the context of online education. Regardless of the challenges, with time, students were able to accept and adapt.

Iqbal et al. (2022), in Pakistan, investigated higher education students' experiences and perceptions on various aspects of online education during the pandemic (students' satisfaction, the support provided to them by institutes and instructors, and others). The students considered as advantages of saving transportation costs and developing different digital skills (e.g., information search and use of digital tools). However, there was considerable dissatisfaction among the participants who expressed concerns about connectivity issues, the quality of online teaching, and the lack of institutional support. The majority of the students indicated that they would not like to opt for online classes in the future, once the pandemic was over. Li (2022) examined Chinese students' perceptions of online classes during the pandemic. Perceived benefits included the improvement of students' digital skills, the creation of a digital learning community, and staying connected during lockdowns. Perceived challenges regarded adaptability issues, technological obstacles, time-management issues, and distractions by social media. Students believed that a blended model is necessary for the post-pandemic era. Students' suggestions for sustainable post-pandemic online classes included fast and stable internet connection, provision of recorded lectures, and unification of online platforms across different subjects. Malik and Dahiya (2021) investigated students' experiences and perspectives on online learning in India. Half of the students stated that online learning had negatively impacted their health and lifestyle. Perceived disadvantages regarded lack of infrastructure for effective platform usage and poor connectivity, while students felt a drop in their interest and attention toward online teaching methods. Improvement of online skills was an advantage, and students' suggestions towards improved e-learning include proper training for using different online platforms and provision of better quality study material (e-resources).

At the beginning of the pandemic, Aristovnik et al. (2020) carried out a large-scale study with students from 62 countries. Students were satisfied with the support provided by their educators and their universities' public relations. They were mainly concerned about their future professional careers/studies, and experienced anxiety, frustration, and boredom, while deficient computer skills prevented them from perceiving their improved performance in the new teaching environment. The study also indicated that students with specific socio-demographic characteristics (male, part-time, applied sciences, and a lower living standard in Africa or Asia) were significantly unsatisfied with their academic work/life during the pandemic. Stewart and Lowenthal (2021), in the Republic of Korea, investigated international exchange students' experiences when attending online courses. They found ambivalent experiences with regard to quality for student support, the teaching-learning processes, and course structure. Negative experiences included often the absence of instructor-student or student-student interaction-communication, unclear course directions, and limited technical skills of faculty members (to teach effectively at a distance). Students appreciated the flexibility of learning online at their convenience and indicated several courses as interactive and engaging. Students' views and experiences were influenced by their dispositions and characteristics (e.g., cultural background), as well as their instructors' behavior.

Other benefits of online education, as expressed by university students, include the ability to study in the safety/comfort/familiarity of their home (Sahbaz, 2020; Chattaraj & Vijayaraghavan, 2021), the flexibility of time and location (Serhan, 2020; Paudel, 2021; Muthuprasad et al., 2021), benefits for promoting online research and obtaining the authentic resource of knowledge (Paudel, 2021), as well as general positive perceptions about the usefulness of online learning (Gorghiu et al., 2021). Other obstacles and negative online learning students' experiences include pedagogical, technical/financial/organizational obstacles (Lassoued et al., 2020; Hussein et al., 2020; Paudel, 2021), negative emotions and feelings of anxiety/stress/depression (Cameron et al., 2021; Ela et al., 2021; García-González et al., 2022), low satisfaction level with online teaching (Natarajan & Joseph, 2022), limited motivation (García-González et al., 2022; Siah et al., 2022), difficulties with time-management or self-management skills (Li, 2022; Paudel, 2021; García-González et al., 2022), and lack of laboratories and libraries (García-González et al., 2022).

However, communication and collaboration are important components in the online learning environment, and few studies explored relevant student perceptions. Indicatively, limited/decreased quality of teamwork and decreased interactions between students and tutors were reported by Siah et al. (2022), while communication and collaboration in online learning were perceived as ineffective by mathematics students in Indonesia (Supiyati et al., 2022). Within the Greek context, there is a small number of studies on the topic (Zagkos et al., 2022; Giannoulas et al., 2021; Salta et al., 2022; Zacharis & Nikolopoulou, 2022). It is noted that in Greece, the emergency transition began in March 2020 and lasted till September 2021 (with an exception of one month at the beginning of autumn 2020 which started with face-to-face classes, but due to the continuation of the pandemic, all universities closed again). During this period of three academic semesters, university educators were asked to teach their courses online (synchronously and/or asynchronously). Zagkos et al. (2022) found that students expressed the belief that online learning cannot replace face-to-face learning (especially when it comes to laboratory training), while major obstacles regarded the limited communication and cooperation between students and teaching staff and the general restriction of social contact in the academic context. In another study (Giannoulas et al., 2021), Greek students considered time-saving and improvement of digital skills as benefits of online classes, while their perceived obstacles included online classes' poor organization and limited communication between students and teachers. Decreased levels of interactions between students and students/tutors resulted in low levels of emotional engagement with online learning (Salta et al., 2022). Finally, Zacharis and Nikolopoulou (2022) indicated students' behavioral intention to use eLearning platforms in the period following the pandemic.

Disruption to education is not limited to pandemics, since wars/conflicts and natural disasters can also interrupt face-to-face classes. It is thus essential to educate students during such disruptions and find out what we learn from the COVID-19 pandemic can be useful for the future. Therefore, Greek university students' online learning experiences were investigated in the context of COVID-19. An aspect of this study was that it was carried out after the universities had returned to face-to-face education. In order to explore students' experiences throughout the whole pandemic period (from March 2020 to September 2021), the following research questions were addressed.

1) What advantages/pros and disadvantages/cons did students experience during online learning, in the time of COVID-19?
2) What was students' communication and collaboration with tutors and peers, during online education?
3) What are students' suggestions for the improvement of online education?

3. Materials and Methods

3.1. Sample and procedure

The convenience sampling technique was used to reach the participants of this study, due to considering the accessibility and willingness of respondents for taking the interview (Fink, 2011). Emails were sent to reach out to potential participants to record an expression of interest, while students were asked to recruit peers through their social networks. It was a requirement that students were in their third year of studies and/or above so that their online learning experience was obtained solely at university (since the pandemic lasted about 1.5 years, first and second-year university students experienced online learning and within the secondary school context). 24 students who were studying different academic subjects at different universities across Greece, participated in this study. The sample characteristics (gender, age, year of study, and field of study) are indicated in Table 1. 18 students were female, six were male, and the age range was 21−24 years old. 20 participants were in their fourth or fifth (final) year of study, and four students attended their third year of study. The students participated voluntarily, and ethical issues were considered under the General Data Protection Regulation. Prior to their participation, all students were informed about the research purpose of the study and anonymity issues (e.g., their input would remain anonymous). They were also informed that the interviews would be recorded.

Table 1. Demographic characteristics of the sample (N=24 students).

Gender		Age	
Female (18)		21-22 (14)	
Male (6)		23-24 (10)	
Year of study		**Field of study**	
3rd year (4)		Education, Social Sciences (10)	
4th year (10)		Applied Sciences (7)	
5th year (10)		Natural and Life Sciences (5)	
		Other (2)	

3.2. Research instrument

The data collection took place via interviews which were conducted between March and April 2022. After the universities had returned to face-to-face education. Zoom (audio recording features) was used for recording the interviews. The interview questions were linked to the research questions of the study, and were designed by taken into account international research. Indicative interview questions were as follows: 'What were your positive and negative experiences during online learning?', 'What were your feelings?', 'What was your communication - collaboration with tutors and peers, during online education?', 'Which tools did you use to communicate and collaborate?', and 'What are your suggestions for the improvement of online education?'

3.3. Data analysis

Descriptive content analysis was used, so the codes for the data analysis were descriptive. Through the coding process, patterns of responses were used for the identification of themes and categories in line with their relevance to the research questions (Creswell, 2012). The responses provided (by the students) were thematically grouped into what was related to the pre-determined themes of advantages and disadvantages of online learning, collaboration-communication with tutors and peers (as experienced by students), and students' suggestions for the improvement of online education. Anonymity was confirmed to eliminate possible untruthful responses. To ensure anonymity, codes were used for the students.

4. Results

The presentation of the results is according to the three research questions of the study. In Tables 2−4, the first column presents students' responses, and the second one indicates the number of references (frequency). Different responses may correspond to (derive from) the same student. Besides the excerpts, the codes S1−S24 are used for the students (S1: Student 1, S2: Student 2, and so on).

4.1. Students' experiences of online learning advantages and disadvantages

Table 2 indicates the advantages/benefits and disadvantages of online learning, as these were experienced by students during the pandemic. The main advantages include time-saving since there was no need to travel to university campuses (16 replies) and the comfort of being/studying at home (14 replies). Other benefits include the enhancement of digital skills, immediate response by tutors, and the possibility of photographing lecture notes. Studying at home was experienced both as an advantage (linked to greater concentration) and as a disadvantage (due to more distractions at home) by one-third of the students. Major disadvantages experienced regard technical problems such as bad internet connectivity and slow performance of platforms (18 replies). Around half of the sample mentioned the lack of practical training (e.g., lab work and hands-on experiences) and difficulties of tutors in handling online platforms (11 and 10 replies, respectively).

Table 2. Online learning advantages and disadvantages as experienced by students (N=24).

Advantages/benefits	
Time-saving (no need to travel to university)	16
Comfort when staying at home environment	14
Greater concentration (when studying at home)	8
Enhancement of digital skills (familiarization with new programs, etc.)	7
Immediate tutors' response to students' emails	6
Possibility of taking photos of lecture notes	3
More participation (invisible face)	2
Disadvantages	
Technical obstacles (e.g., bad connectivity, slow performance of online platforms)	18
Lack of practical training (lab work, hands-on experiences)	11
Tutors' difficulties in handling online platforms (e.g., at the beginning [1])	10
More distractions at home	8
Lack of face-to-face contact (with tutors, peers)	7
For exams - limited time or lower expectations	5
Difficulties for dyslexic students	2

[1] At the beginning: during the first year of the pandemic – one academic semester (March 2020 - May 2020)
Then: during the second year of the pandemic - two academic semesters (October 2020 – May 2021)

Concerning students' feelings, most of the students (22 out of 24) reported negative feelings, as they felt anxiety, anger, and boredom. In parallel, one-third of the sample stated the existence of strong negative feelings (anxiety, uncertainty) at the beginning of the pandemic, while afterward - during the second year of the lockdown - they felt better. Examples of excerpts regarding the advantage of comfort while staying/studying at home included the following.

"The fact that you are at home and that you are more relaxed. You do not have the anxiety to wake up in the morning, to get ready, to miss a bus." (S7)

"It did not take me an hour and a half to go to my university." (S2)

One student shared her experience of improving her digital skills:

"I learned to better manage digital-interactive learning tools." (S16)

Another participant shared:

"I was more comfortable with asking questions since my face was not visible and I could send him (the tutor) a message in the chat." (S19)

Negative experiences associated with technical issues (and tutors' difficulty in handling the platforms) were:

"My negative experiences had to do mainly with the technical part. There were many problems such as that the connection signal was often lost. Other times the system stuck and the microphone or camera did not work, resulting in a delay for the course." (S5)

"During the first year of online learning we had some platforms that even the teachers did not know how to handle, we lost the signal, we did not hear, we did not see… and it was basically a completely boring lesson…then (during the second year of the pandemic) we were all more prepared." (S10)

About half of the sample expressed concerns about practical or laboratory classes:

"Our academic field (veterinary medicine) is more practical and in general the whole part of the computer screen was very tiring. Being behind the screen for so many hours sometimes gave me a headache, it discouraged me…It is not possible to learn to operate from a video. You have to put it into practice. You cannot do stitches theoretically." (S1)

"In my field (chemistry) we have a lot of laboratory classes that could not be done as they should be done… in subjects such as mathematics, physics, and those that have too many exercises, the teacher could not be so efficient." (S15)

Other statements of perceived negative experiences were:

"Loss of physical contact with fellow students and teachers." (S4)

"Limited examination time in relation to face-to-face exams." (S14)

Multiple students highlighted their negative feelings and, in particular, at the beginning of the pandemic; examples of relevant excerpts were:

"At the beginning (of the pandemic) I felt lost, I really felt so uncertain… Afterwards, I started to adapt to the new conditions and I was confident. I was quite happy to face this challenge." (S6)

"Most of the time I was bored. There were very few lessons I wanted to attend." (S13)

Few students expressed mixed feelings: "Emotions were generally mixed. It was a joy because I did not have to go to university every day, I had time to relax and engage with other favorite interests… there was also grief because I did not spend time with my friends and classmates." (S5)

4.2. Students' communication and collaboration with tutors and peers, during online education

Table 3 indicates students' experiences with communication-collaboration with tutors and peers during online education. Most students (18 out of 24) experienced good communication and collaboration with their peers (e.g., during group tasks/work). Regarding communication-collaboration with their teachers, the participants had mixed experiences since half of them reported good communication (including immediate responses to their queries), while the others reported limited (or no good) communication-collaboration. It is noted that various platforms were used such as MS Teams, Zoom, and Webex. The students communicated with their tutors and peers via these platforms and institutional emails, while social media (for example, Facebook) were also utilized for student-student communication.

Table 3. Students' experiences on communication-collaboration with tutors and peers (N=24).

Very good communication-collaboration with peers (e.g., in group tasks)	18
Good communication-collaboration with teachers	12
Limited (or no efficient) communication -collaboration with teachers	12
Immediate reply from our teachers (to our queries, emails, etc.)	7
Difficulties in collaborating online with peers	2

The majority of participants pointed out good communication and collaboration with their peers, and its facilitation via group work. Indicative excerpts were as follows.

"Communication and collaboration with teachers and peers was quite constructive and satisfactory. The software of the online courses helped us a lot in our collaboration, as we were asked to carry out group-work through which we had to produce a group result." (S16)

"Communication and collaboration with my teachers has been excellent… During online education, many courses required group-work. All the time I had to collaborate with my peers, I had no difficulty and everything went well." (S18)

"Communication with my classmates was excellent. We had communication via various applications that we all had access to… The groups that were created for each lesson also helped a lot." (S6)

Communication-collaboration with tutors was identified as positive experience by half of participants, and as negative by the other half, for example:

"The teachers themselves tried hard for good communication and cooperation. They were constantly trying to find solutions, trying to choose the right platforms for the lessons to run smoothly, trying to respond as quickly as possible to emails." (S23)

"Immediate response of teachers to questions and queries, via video conference chat or via e-mail." (S14)

"It was depending on the teacher, that is, there were teachers who had an immediate response to the emails, they answered almost immediately, they explained questions, and there were some others who did not have it at all with the communication..." (S8)

"Some teachers tried to help us and were eager to answer any questions… with fellow students I think we bonded through online education because we were all having a hard time and there was an understanding. We also did a lot of group-work." (S15)

"My collaboration was much better with my classmates. There was a better way to work through applications like Microsoft Team and messenger, we shared more files and exchanged a lot of information. I do not think there was much cooperation with the teachers." (S9)

Some excerpts describing the tools used for communication-collaboration were:

"The lessons were done through a platform. We had the (MS) Teams. And whenever you wanted to ask and say something you would open the microphone and talk. We also had the institutional email." (S13)

"Our teachers used eclass, Skype for Business, Webex and Zoom. For collaboration with peers we used Social Media, Zoom and Google Meet." (S24)

"We used Zoom and Webex which had an online chat and provided the ability to use camera and microphone. In a few cases we also used Skype which provided exactly the same tools." (S17)

"My fellow students and I had formed a group at MS Teams and we also communicated through this platform by video call. And with some teachers this was happening! In general, there was good mood." (S3)

"For the group work we had through MS TEAMS a common word file, and there we could make changes online and be saved automatically." (S20)

"E-mail, some Social Media, and chat (of online platform)." (S2)

4.3. Student suggestions for the improvement of online education

Table 4 presents student suggestions for improving online education in the future. Better university infrastructure and preparation (e.g., adoption of easier-to-use online platforms) were suggested by most of the students (15 replies). Other suggestions include better preparation and training for tutors, student training (e.g., in managing online programs/apps), and more interactive lessons.

Table 4. Student suggestions for the improvement of online education (N=24).

Better university infrastructure & preparation (e.g., adoption of easy-to-use online platforms)	15
Better preparation and training for tutors	8
Student training (e.g., in managing online programs/apps)	7
More interactive lessons (for greater student participation, etc.)	6
Vouchers for students (e.g., to buy laptops)	5
Improvement is difficult for practical courses	4

Examples of excerpts of students' suggestions were as follows.

"Each educational institution should ensure that the educational platform can accommodate the large number of students who attend the courses." (S22)

"I could suggest improving technical issues such as signal enhancement. In addition, teachers could use PowerPoint or video with a shared screen to make the lesson more interesting." (S17)

"Better information for teachers and students about e-learning. Also, creation by the university of a course suitable for online learning." (S4)

"Seminars for teacher training so that they know how to do things in online learning." (S20)

"To make the lesson a little more interactive to stimulate students' interest, just like that…it depends on the teacher how he will use the platform for his lesson." (S12)

Another student expressed doubt as to the possibility of improving practical courses:

"I do not know how you can improve something that is practical and cannot be replaced with something theoretical. Maybe something more interactive? … so that there is more participation." (S1)

5. Discussion and Implications

University students' online learning experiences were explored in the context of the COVID-19 pandemic to provide insights into how students experienced the phenomenon. This study's findings contribute to the emerging research evidence on online education during the pandemic. Exploring students' experiences and perspectives of online learning helps to understand their engagement in online or blended education in the future and contributes to the decisions made by universities for the enhancement of the online teaching and learning process; e.g., in future crises and disruption situations.

Concerning the 1st research question ('what advantages and disadvantages did students experience during online learning, in the time of COVID-19?'), it becomes apparent that online classes during the pandemic have brought advantages and disadvantages perceived by students. There is an agreement with research conducted during the pandemic with regard to the positive experiences (benefits) of time-saving (Serhan, 2020; Paudel, 2021; Giannoulas et al., 2021), the comfort/flexibility of studying at home (Sahbaz, 2020; Chattaraj & Vijayaraghavan, 2021; Stewart and Lowenthal, 2021; Khan et al., 2022), and the enhancement of students' digital skills (Giannoulas et al., 2021; Iqbal et al., 2022; Li, 2022). Technical problems were major challenges that students encountered with the online experience, and this is in line with earlier studies from 2020 onwards (e.g., Lassoued et al., 2020; Hussein et al., 2020; Malik & Dahiya, 2021; Khan et al., 2022; Li, 2022). Participants noted that the lack of practical training during the pandemic was a negative experience, which aligned with recent research. García-González et al. (2022) pointed out that the lack of laboratories was an obstacle, while Khan et al. (2022) and Li (2022) presented that students felt that online classes fitted into several subjects well. The finding that studying at home was experienced both as a positive and as a negative experience, is attributed to students' personalities such as having a private space to study at home.

Since this study explored students' experiences throughout the whole pandemic period, an interesting finding regards differentiations between the first and second year of the pandemic. More specifically, regarding tutors' skills in handling online platforms and students' feelings, tutors were more prepared, and students' feelings were more positive during the second year of the pandemic. The differentiation has consequences for both teacher and student training and is discussed in implications. Negative student feelings, anxiety, and stress were also documented in Aristovnik et al. (2020), Malik and Dahiya (2021), Cameron et al. (2021), and García-González et al. (2022).

Concerning the 2nd research question ('what was students' communication and collaboration with tutors and peers, during online education?'), most students reported they experienced excellent good communication and collaboration with their peers, and this was often facilitated via group work. Collaboration with peers is important since it affects students' satisfaction and academic performance when learning online (Iqbal et al., 2022), while peers are considered a source of support/assistance. In parallel, mixed experiences were revealed regarding student-teacher communication and collaboration. Half of the participants had positive, while the other half had negative experiences on this issue. Limited interactions may demotivate students and create feelings of isolation. Negative student-teacher experiences were documented in earlier pandemic-related research (Stewart & Lowenthal, 2021; Giannoulas et al., 2021; Zagkos et al., 2022; Siah et al., 2022). Since communication and collaboration are related to online learning being effective, university tutors are suggested to build better communication-collaboration and learning interactions with their students (e.g., more interactive lessons for increased student engagement/participation and group tasks). This has implications for teacher training/preparation.

Concerning the 3rd research question ('what are students' suggestions for the improvement of online education?'), better university infrastructure and preparation (e.g., adoption of easier-to-use online platforms) were suggested along with preparation and training for tutors and students (e.g., in managing online programs/apps). This is in an agreement with Li (2022)'s result that shows Chinese students hoped to have a faster and more stable internet connection and the unification of online platforms across

different subjects. Tutor and student training were also proposed by students in India (Malik & Dahiya, 2021). Forced online teaching (as it occurred in the pandemic period) is linked to both barriers and benefits, bringing an opportunity for university teachers' professional development and increased implementation of digital technologies.

Student perspectives on their online learning experiences have implications for educational practices and/or policies. Perspectives need to be considered in the decisions made by universities and education policy-makers. Initially, students' training is suggested to incorporate the development of different skills that prove to be useful in future crises such as autonomy, communication, collaboration, resilience, adaptability, and digital technology skills. Digital technologies are changing the context of teaching-learning with increasing access to the internet and online learning environments, thus resulting in different levels of technology integration within the university systems. To enhance online learning, universities need to revise their educational policies, improve the availability of e-resources, offer opportunities to educators to learn different web-based tools, implement (adapt the) pedagogy for online teaching, and redesign their courses. For example, educators need to be better preparing teaching under crisis circumstances (e.g., incorporating issues of online and blended modes of education) and better address students' needs and implement effective synchronous communication strategies (e.g., group collaborative and communication-associated activities to strengthen interactions). The teacher's role is essential in organizing and facilitating the online courses, utilizing digital resources, establishing communication and a positive learning climate, providing timely feedback (Nikolopoulou, 2022c; Nikolopoulou & Kousloglou, 2022), and consequently improving students' positive experiences.

More resilient and better-equipped universities were suggested by an international study on higher education and conducted at the beginning of the pandemic (Marinoni et al., 2020). Successful online learning is associated with the academic, organizational, and technological management implemented by the university in crises situations (García-González et al., 2022). Therefore, universities must be supported by convenient, flexible, and digital platforms (Li, 2022). For example, flexible digital platforms also facilitate communication and collaboration between teachers and students. University educators' training (professional development) together with efficient online platforms are expected to contribute to increased student-teacher communication-collaboration. Universities need to plan for the application of blended-hybrid approaches in education for a subsequent pandemic or future crises. After the forced implementation of online education during the pandemic, there is recently a move/debate towards the adoption of the hybrid-blended learning mode in universities (Li, 2022; Nikolopoulou, 2022b). This approach-mode is mainly useful in disruption periods (when in-person engagements are difficult) and raises an issue for future research.

6. Limitations and Future Research

One of the limitations of this study was the use of convenience sampling methods to recruit the participants. Thus, the findings of this study may not be generalized. Other limitations regard the use of descriptive content analysis to examine the qualitative data, and the little detail included in the analysis at coding levels. Also, students' answers might be influenced or biased by their satisfaction with online classes and/or well-being. As students' experiences were associated with their university, questions related to university profiles and available support would have added additional information to students' responses. The findings may not reflect the diverse experience of students of different ages, fields, and others. Future research needs to use a broader perspective to investigate perceptions of students from various academic subjects and levels, as well as different countries (and the possible differentiation of perceptions due to different characteristics). Additionally, student self-reported experiences-perspectives can be compared to stakeholders' (e.g., educators' and administrators') perceptions.

Investigating students' online learning experiences and perceptions is not a static issue. These establish a stage for future research. Future research is suggested to investigate the impact of different student characteristics (culture, field of study, gender, and so on) on their perspectives, and features of transition in different academic disciplines, as well as the design of online-digital pedagogy. For example, culture (Cahapay, 2021; Khan et al., 2022) and the field of study (Gorghiu et al., 2021) were shown to influence students' experiences and perceptions at the time of COVID-19. Different student groups could also be compared over time (Stewart et al., 2022). It is suggested to conduct research in different countries and cultures, with large samples, and various academic disciplines. Students' online learning experiences could contribute to the ongoing research on the acceptance of the hybrid mode of education in higher education. The horizon has now opened for its adoption in the post-pandemic era.

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