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## Article

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Article

# Online Teaching during the COVID-19 Pandemic: A Case Study of Albania

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**Abstract:** The spread of COVID-19 has caused the interruption of education in all levels of schools, forcing them to seek urgent solutions to reconfigure traditional education programs for distance learning. The emergency restrictions related to social distancing, gathering, etc., have generated a disruption, resulting in a massive quick shift to distance and online teaching. The disruption of teaching has been highly critical and complex, especially for developing countries due to the lack of technological infrastructure, low Internet access, low level of preparation of teachers and parents to use technology, and lack of learning motivation. This paper aimed at identifying the main teaching practices, challenges, and contextual characteristics that impacted the adoption and use of online teaching solutions, during the COVID-19 outbreak, in a developing country, Albania. The paper reached this goal by providing the results of a survey involving 100 educators from different levels of public education institutions in Albania (high schools and universities). The results revealed that despite a set of challenges faced, the online teaching experience during the pandemic time brought improvements in computer teaching skills and communication with students by using several applications for interactivity.

**Keywords:** education; online teaching; challenges and opportunities; technology; Albania



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## 1. Introduction

The COVID-19 pandemic has forced all levels of education to rapidly migrate into online learning. This migration was associated with unprecedented challenges for educators, students, and the education system in general (Myrri et al. 2022; Watermeyer et al. 2021).

The emergency restrictions related to social distancing, gathering, etc., have generated a disruption in various areas, including teaching and education (Daniel 2020; Ratten 2020).

Education systems worldwide were disrupted and were forced to find immediate solutions for distance learning. A radical transformational process was required (Secundo et al. 2021; Ndou 2021).

This disruptive process provided, on one hand, an occasion to reflect on the role of digital technologies in implementing new educational strategies, approaches, and processes and, on the other hand, presented a set of challenges and complexities at micro- and macrolevels.

Digital technologies were adopted as crucial solutions for designing and delivering effective education processes at all educational levels, without considering the level of familiarity with online education (Li et al. 2021).

Although online teaching facilitates the process of learning and information (through the provision of sophisticated learning and content management systems) and real-time online teaching tools (i.e., tools that directly allow live streaming of the teaching process such as Skype, Zoom, Viber, Google Hangouts Meet, Google Duo, etc.) (Varga 2020, p. 21), it is worth noting that there are fundamental differences between in-person teaching and online teaching methods for both teachers and students (Saha et al. 2022). “The online

context has prompted the need for new teaching approaches and teaching skills that are different from those used in teaching face-to-face courses" (Hampel and Stickler 2005, p. 312).

Diverse studies have reported the relevance of previous experiences and digital readiness of the teaching staff for an optimal process of shifting toward online education approaches (OECD 2021; Alexander et al. 2019).

Although education institutions had at disposition a bunch of digital technologies for teaching and delivering information such as video-conferencing solutions, social networking, augmented virtual-reality devices, emails, etc., their adoption encountered a set of challenges.

In particular, developing countries were hardly hit by the disruptive transformation in education due to their low level of digital infrastructure as well as digital skills and competencies (OECD 2021).

Departing from these issues, in this paper, we aimed to specifically understand how the teaching and education processes have been impacted during the COVID-19 period. In addition, more specifically, this paper aimed at identifying the main teaching practices, contextual characteristics, challenges, and opportunities that affected the adoption and use of online teaching solutions, during the COVID-19 outbreak, in the case of Albania.

Therefore, three main research questions are addressed:

RQ1. What are the main digital tools and education practices that have been adopted by high school and university educators?

RQ2. What is the effect of previous experiences, level of digital readiness, and other contextual characteristics on the adoption level of online teaching approaches?

RQ3. Which are the main challenges and opportunities encountered by high school and university educators during the COVID-19 outbreak?

To respond to these questions, we employed an exploratory methodology, more specifically a web-based survey administered through the medium of Google online platforms. The questionnaire was constructed in four main parts. We surveyed 100 teachers and pedagogues from education institutions (high schools and universities) located in Albania. The collected data were analyzed through descriptive analysis.

The paper is structured as follows. Section 2 presents the literature background regarding online education, challenges, and opportunities. Section 3 highlights the methodological approach used, and Section 4 discusses the research outcomes. Lastly, Section 5 highlights concluding remarks and implications for future research.

## 2. Literature Review

Despite the COVID-19 disruption on education approaches, online teaching has been significantly growing in recent years (Watermeyer et al. 2021).

Many organizations, startups, and education systems have achieved significant investments and innovation in deploying digital technologies and tools in developing web-based learning to deliver effective, just-in-time, and personalized learning (Elia et al. 2009). Different virtual educational platforms have been created and diffused for the online learning process at different levels, such as MOOC platforms including Coursera, eDX, Udemy, and Udacity (Petrie 2020), with the consequences of extensive use of online courses, simulators, interactive whiteboards, projectors, 3D printers, etc. (Vinogradova et al. 2019).

The literature on time has paid relevant attention to the opportunities and advantages of online education.

The pre-COVID-19 studies focusing on online learning have extensively argued the benefits they can provide for students' understanding, learning, monitoring, and assessing process as well as for creating a more collaborative learning environment (Sorva et al. 2013; Myrsky and Joutsenvirta 2015). In addition, scholars have highlighted the relevant advantages of online learning related to time and money savings, participation at any time and from anywhere, and contribution to environmental sustainability (e.g., due to the reduction of transport) (Chang and Vowles 2013).

Yet, while the use of digital technologies can be crucial for building effective, cost-efficient, and flexible learning solutions (OECD 2019), previous research has argued that despite these benefits, there has been limited use of digital tools among educators and students (Bond et al. 2018; Amhag et al. 2019).

This is because online teaching creates substantial changes in content delivery, content aggregation, people collaboration, interactive discussion, information sharing, idea development and validation, access to resources, project development, simulation, and prototyping (Secundo et al. 2020). In addition, the digital competencies and skills related to distributing learning materials through digital platforms, or communicating, interacting, and monitoring learning outcomes are crucial for the adoption of the new mode of teaching and learning (Al-Awidi and Aldhafeeri 2017).

Wolverton (2018) argues that students afford relevant challenges in terms of online collaboration, interaction with stakeholders, online engagement, and teamwork satisfaction. Moreover, the digital gap existing between students (digital natives) and teachers influences the performance of online teaching and learning. Different studies have been developed to understand the variables that impact the success and high performance of online teaching, learning, and collaboration. For example, Ku et al. (2013) identified three main variables affecting the success of online collaborative learning: team dynamics, team acquaintance, and instructor support. These variables enclose a set of conditions that are essential for high performance in online learning and collaboration, such as the communication process and style; the level of trust and cohesion in learning styles, personal beliefs, and professional backgrounds; and instructor support (Greenlee and Karanxha 2010; Liu et al. 2008; Miles and Mangold 2002).

While the extent of use and adoption of online learning before COVID-19 was limited, the emergency has exacerbated the shift toward online education methods, as there were no other options. Without considering their readiness state, teachers were forced to use various digital tools and devices in synchronous and asynchronous ways to support continuing education for students (Hodges et al. 2020).

Lederman (2020) argues that, due to the COVID-19 crisis, teachers and students both find themselves in a situation where they felt compelled to embrace the online teaching–learning process.

Many scholars have focused on analyzing the different aspects related to such a disruptive shift during COVID-19.

For example, Alabbasi (2022) focused on analyzing the factors that influence students' engagement in online education and argued that behavioral and the learning-experience design highly impact students' engagement.

On the other hand, Pandey et al. (2022) studied the overwhelming impact of the COVID-19 pandemic and the transformational challenges of shifting from an offline classroom into an online classroom, and they described the different online teaching platforms and technologies being used to ensure the continuity of the education process.

Other studies focused on the set of skills and competencies necessary for online teaching (Khemani et al. 2023) and the identification of the main issues faced by education institutions (HEIs) to rapidly move to online teaching (Webb et al. 2021). In addition, different country contexts and disciplines are analyzed by scholars to understand the kind of response and challenges faced by educators and students.

Yet the studies are more focused on developed countries' contexts, whereas there are limited studies considering developing countries' contexts.

For developing countries, the challenges for affording this transformative shift toward total digital learning have been much higher and at a different scale. Online learning in developing countries is additionally challenged by the lack of reliable tools, instruments, competencies, and infrastructure such as the lack of computers, laptops, tablets, or a smartphone at home; lack of access to the Internet; low readiness of countries to organize and distribute TV programs for learning; and difficulties in buying and using online learning platforms. Adedoyin and Soykan (2020) argued that also socioeconomic conditions related

to the affordability of broadband connection, Internet accessibilities, and the participation of students with low socioeconomic backgrounds in online learning impact the performance of online teaching and learning.

These conditions make much more disruptive and challenging the shift toward new learning and teaching modalities.

### 3. Methodology

The methodological process included three phases, i.e., survey design, data collection, and data analysis, as detailed below.

We adopted an exploratory methodology for this study. Specifically, it focuses on the experiences of teachers at high schools and universities in Albania to grasp learning challenges during crises.

A web-based survey was conducted through an online self-administered survey questionnaire using the Google platform. As [Chang and Vowles \(2013\)](#) argued, surveys provide different benefits such as time efficiency, bias elimination, cost efficiency, continuous and customized messages, and fewer errors.

The questionnaire contains four main parts:

- General information about the demographic information of respondents such as age, education, professional profiles, and role;
- Information about the experience with online learning tools;
- Previous experience with online teaching;
- Barriers and opportunities encountered.

The final questionnaire is composed of 20 questions (see the Appendix A). The questionnaire development was based on validated constructs developed by relevant prior research (e.g., [Khemani et al. 2023](#); [Webb et al. 2021](#); [Wolverton 2018](#); [Liu et al. 2008](#); [Miles and Mangold 2002](#)). This phase was followed by a qualitative stage consisting of interviewing teachers and students to collect knowledge for developing the questionnaire.

The questionnaire was sent to a convenience sample composed of 300 teachers and professors operating either in high schools (students aged 15–18) or universities in April 2021. The data were obtained in July 2021, at the end of the second academic year in the pandemic attending online teaching. In total, 118 responses were returned but only 100 were completed in all its parts. Therefore, the final set of responses was 100 out of 300, resulting in a 33% response rate. This is a valid response rate as it is larger than the 15% recommended by [Hair et al. \(2021\)](#). We received 50 responses from high school teachers and 50 responses from university academic staff.

Table 1 shows the descriptive characteristics of the respondent sample.

The majority of the respondents were women, specifically 84% of the teachers and 92% of the pedagogues. These data are mainly related to the teacher's profession being dominated by women in the case of Albania. International data for EU countries show that in most European countries, women continue to (numerically) dominate primary teaching. In lower secondary education (ISCED level 2) in the EU as a whole, the great majority of teachers are still women, with less than one-third being men ([Tašner et al. 2017](#)).

Regarding the age, as could be evinced by the table, there were 6 educators under 35 years old (4 teachers and 2 pedagogues), 44 educators between 35 and 45 years old (22 teachers and 22 pedagogues), 46 educators between 45 and 55 years old (22 teachers and 24 pedagogues), and 4 educators between 55 and 60 years old (2 teachers and 2 pedagogues). Most of the respondents' age range from 35 to 55 years (i.e., mainly from Generation X).

**Table 1.** Teachers' and pedagogues' characteristics: age, sex, education.

High School Teachers		University Pedagogues	
Sex		Sex	
Women	42	Women	46
Men	8	Men	4
Age		Age	
25–35	4	25–35	2
35–45	22	35–45	22
45–55	22	45–55	24
55–60	2	55–60	2
Education Experience		Education Experience	
Less than 5 years	2	Less than 5 years	1
5 years	3	5 years	4
10 years	10	10 years	10
20 years	25	20 years	30
Over 20 years	10	Over 20 years	5

Regarding the years of teaching experience, the majority of the educators have 20 or over 20 years of experience (55 educators have 20 years of teaching experience and 15 educators have more than 20 years in service). On the other hand, there were 3 educators with less than 5 years of service, 6 educators with 5 years of service, and 20 educators with 10 years of service. Therefore, it could be claimed that the final sample is composed of experienced educators, which means that they have had several teaching curriculum changes during their experience.

All respondent teachers are permanent teaching staff in high schools, while 10 out of 50 pedagogues are temporary staff at universities.

## 4. Results and Discussion

### 4.1. The Study Context

Albania, like other countries in the world, in this pandemic, sustained education through online learning. A TV channel (“RTSH Shkolla”) was offered to both teachers and students by the Albanian Ministry of Education, Sport and Youth for video lessons for every level and subject from elementary to high school, which were followed by teachers (96.5%), students (84.1%), and parents (85%.) These videos were also available on YouTube (Arsimi.gov.al 2020). All of these were good sources to have lessons from home. For university students, it was not the same because they needed to search by themselves (pedagogues and students) to take as much of the knowledge needed. That was a great benefit; the students were offered a great possibility to be open-minded and learn to search while being directed by tutors. Universities were not prepared for such a transition from classroom-based education to completely online education. Most universities initially lacked infrastructure and strategies (Zhang et al. 2020).

Firstly, they needed to choose the right and effective platform as the first step to online teaching. Secondly, they needed to adopt the use of technology for online teaching by choosing the right tools. The teachers could have some free training; the pedagogues searched by themselves. The pedagogues had some e-materials as they previously used PowerPoint in their lectures, but the teachers immediately started to prepare e-materials and videos for their students.

## 4.2. Survey Results

### 4.2.1. Digital Tools and Education Practices

In this section, we present the main results related to RQ1: What are the main digital tools and education practices that have been adopted by high school and university educators?

Choosing the right and effective platform is the first step to starting an online teaching experience. However, the choice of suitable online education tools is a matter of expertise and readiness of teachers to adopt and use technology as well as the easy use of such online education technologies. There are different online learning platforms available such as Microsoft Teams, Google Classroom, Canvas and Blackboard, and Zoom that enable teachers to create (Petrie 2020).

Therefore, the first question on our survey was aimed to find out which platforms were mostly used by the university and high school staff. Table 2 shows the online teaching platforms used by the teachers and pedagogues.

**Table 2.** Online teaching platforms.

	Platforms Used	
	High School Teachers	University Pedagogues
Teams	1	46
Google classroom	23	19
Zoom	61	18
Academia.al	54	

As it could be evinced, high school teachers mostly used zoom, academia.al, and google classroom, and a few used Teams. On the other hand, university teachers mostly used Teams, and a few used google classroom and zoom.

During the academic year 2019–2020, teachers and pedagogues were free to choose the online teaching platform available to them because all were unprepared of being locked down. Most of the teachers started with preparing e-materials, taking online classes, study materials being uploaded, sending videos, etc. Few teachers recorded their video lectures and uploaded them to WhatsApp groups or on social media.

One respondent says:

“For a video test preparation for Matura Exam it took 2 weeks, sketching the presentation, finding the right text and grammar points to be explained, working on PowerPoint, registering, but I am happy that have I helped not only my students but whoever needed. Having more than 4000 views and 50 shares made me feel well and helpful.”

During the academic year, 2020–2021 “Teams” has been the unique online platform for the university. The pedagogues stated that it was available. One of them stated that it was “A secure track of teaching and learning process. The evaluation of teaching and learning in real-time.” Five others emphasized that “Online teaching using Teams platform makes the interaction with the students a better level than traditional teaching.” Teams allow teachers and students to maintain face-to-face connections with those who remain at home. It makes life easier for teachers, helping them distribute assignments and files and communicate with their pupils one-to-one, while it gives students a safe space to engage with each other and collaborate on projects. The presentation of the lesson by both teachers and professors was mostly in PowerPoint. The professors used more videos than the teachers, and the teachers used more PDF presentations than the pedagogues. There was a noticeable less usage of graphics by both teachers and pedagogues. Table 3 presents the lesson presentation by both teachers and pedagogues.

**Table 3.** Lesson Presentation.

	High School Teachers	University Pedagogues
PowerPoint	38	39
Video	35	25
PDF	22	35
Word	24	28
Graphic	7	15

In face-to-face teaching in the classroom, the teachers used to apply a lot of techniques, but they could not all be applied in an online environment. There is a difference between the method and techniques used in teaching. Richard and Rodgers state that for an approach to lead to a method, it is necessary to develop a design for an instructional system. Design is the level of method analysis in which we consider

- a. What the objectives of a method are;
- b. How content is selected and organized within the method, that is, the syllabus models the method incorporates;
- c. The types of learning tasks and teaching activities the method advocates;
- d. Learners' role;
- e. Teachers' role;
- f. The role of instructional materials (Richards and Rodgers 2001, p. 20).

A method can be used in several techniques. The most used teaching techniques in the classroom are as follows:

- Brainstorming techniques (Electronic Brainstorming, PMI Brainstorming, Negative Brainstorming, Cluster, etc.);
- Creative techniques (SQ3R technique, SCAMPER, Do it, Checklist, Fishbone, Morphological analyses, Slip writing, Laddering, etc.);
- Creative techniques based on a computer (an AI model, a program system of ideas, visualization, and a graphic system) (Jubani et al. 2013, pp. 41–60).

Table 4 shows which techniques the teachers mostly used during their online teaching.

**Table 4.** Teaching Techniques by teachers.

Teaching Techniques									
Venn Diagram	Electronic Brainstorming	PMI Brainstorming	Cluster	Group Discussion	DLTA	Insert	SCAMPER	SQ3R	SWOT
17	20	11	22	23	17	9	3	15	10

Through online teaching, the teachers mostly used the techniques of “Group discussion, Cluster, Electronic Brainstorming, Venn Diagram”. According to Salas-Morera et al. (2012), given the results of using quizzes, and their relationship to the mark for the theoretical section of the subject, it is reasonable to consider eliminating the theoretical section and substituting it with quizzes. However, there is no certainty regarding the use of quizzes for evaluating certain competencies that must be reinforced and could perhaps be better assessed in an overall exam. On the other hand, quizzes have the added advantage of guiding students through the learning process with moderate and continual effort. This advantage would probably be lost if the quizzes had greater weight in the final mark. Likewise, increasing the weight of the quizzes in the final mark would have a significant repercussion on student study hours, which are already very high in comparison with the number of study hours anticipated in the initial work plan (Salas-Morera et al. 2012).



Figure 1 shows that more than 70% of the teachers and pedagogues who responded to the Google forms use quizzes during their online teaching as an assessment tool.

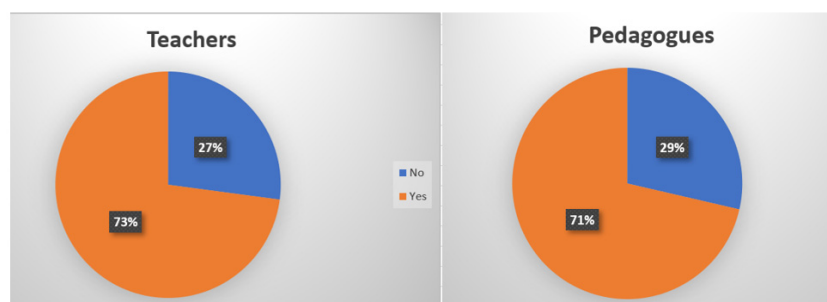


Figure 1. Usage of quizzes in online teaching by teachers and pedagogues.

Thirty out of fifty teachers stated that they used the quiz to encourage students to regularly study. Two teachers emphasized another aspect of the quiz value: “When the students finish the quiz, I notice by the percentage which concept has been well or less understood.”

It is useful to make evident some analysis based on teachers’ and pedagogues’ age, sex, and experience with online teaching.

The age and type of educators influenced the performance of the online learning process. While the teachers aged 45–55 and 55–60 years faced major difficulties in using online technologies, the pedagogues of the same age were familiar with online teaching and well-prepared. This is due to the context and to the fact that universities started before COVID-19 to embrace online learning techniques for project work, continuous interaction with students, etc. In general, the educators aged 25–35 and 35–40 years were the most effective ones in online teaching.

#### 4.2.2. Digital Readiness of Educators

In this section, we provide the findings related to RQ2: What are the effects of previous experiences, level of digital readiness, and other contextual characteristics on the adoption level of online teaching approaches?

We examined the prior experience of educators with online teaching. We asked them to indicate if they had any experience with online teaching before COVID-19. The results are provided in Table 5 and indicate that just a few teachers (10 out of 50 teachers) have occasionally used online teaching modalities before COVID-19, while 38 others have never had any experience before. The situation is slightly different for the university pedagogues; 8 of them have frequently used online teaching methods, 22 out of 50 occasionally use them, and 20 of them do not have any prior experience. In general, it could be said that more than 50% of the respondents do not have prior experience with online learning.

Table 5. Teachers’ and pedagogues’ prior experience with online teaching.

Question 8. Did You Have Any Experience with Online Teaching Experience before COVID?		
	High School Teachers	University Pedagogues
Frequently	0	8
Occasionally	12	22
Never	38	30

Teacher development and training are the key factors to face effective usage in online learning. The teacher’s development is important and helps manage the teaching methodology from being present in the classroom to virtual by noticing different dimensions themselves. “Teacher development looks beyond initial training and deals with the ongoing professional development of teachers. This includes a focus on teacher self-evaluation,

investigation of different dimensions of teaching by the teacher, and examination of the teacher's approach to teaching" (Richards and Schmidt 2002, p. 552). That means that a teacher's development needs also teacher training to be more effective in their explanation and teaching terms. On the other hand, "Teacher training deals with basic teaching skills and techniques, typically for novice teachers." These skills include such dimensions of teaching as preparing lesson plans, managing the classroom, teaching the four skills (i.e., reading, writing, listening, and speaking), learning techniques for presenting and practicing new teaching items, correcting errors, etc. (Richards and Schmidt 2002, p. 552). Teacher development and training are needed for effective usage, and teachers need more training nowadays. All the teachers and 85.4% of the pedagogues in our questionnaire stated that they still needed training for online teaching.

It is essential to emphasize that pedagogues compared with teachers were less trained for online teaching, as given in Table 6. They were mostly autodidacts. That is also related to their higher academic level compared with the teachers. They have been more up to the online platforms than the teachers.

**Table 6.** Teachers' and pedagogues' online training.

Question 14—Online Training					
High School Teachers			University Professors		
Are Trained	Autodidact	Aren't Trained	Are Trained	Autodidact	Aren't Trained
37	27	6	11	34	15

The female teachers (84%) and female pedagogues (92%) liked online teaching and expressed the desire to be trained more than the male teachers and pedagogues, who stated that it was difficult for them to stay many hours in front of computers doing the lessons, getting materials prepared, and correcting online.

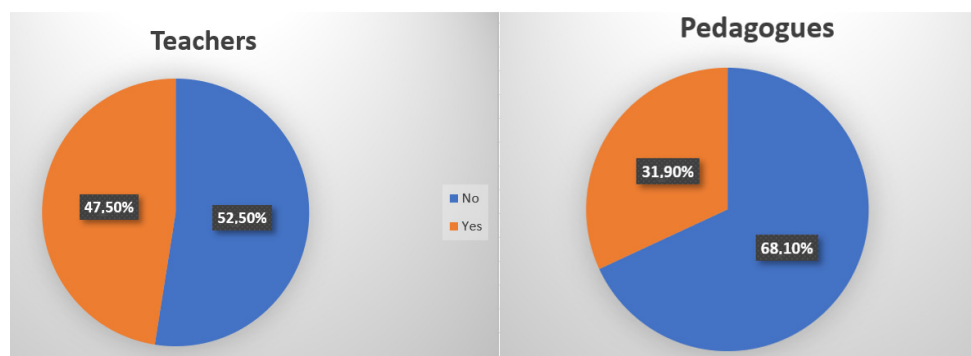
Referring to question 12: "For what will be trained for your online teaching?", most of them shared the opinion that "teachers and pedagogues" training is mostly needed for graphics and individual work, as reported in Table 7.

**Table 7.** Teachers' and professors' online training.

	Online Training Needs	
	High School Teachers	Pedagogues
Quiz	13	7
Graphics	22	14
Test	7	14
Individual work	31	22

According to the education of the teachers and pedagogues, it resulted that the teachers with 10 years of experience (20% in our study) were the most effective in teaching online.

Relating to the online correction of tasks, the pedagogues face less difficulty (31.9%) than teachers (47.5%). This is related to the fact that pedagogues have much more skills and practice in computer teaching than teachers (Figure 2).



**Figure 2.** Teachers' and pedagogues' difficulties—correcting tasks online.

Based on the above findings, it could be claimed that sex, age, and prior experience highly impact the performance and effectiveness of the process. Therefore, it is crucial to consider these characteristics in developing and implementing online teaching modalities in the future.

#### 4.2.3. Online Teaching Challenges

In this section, we present the results related to RQ3: What are the main challenges and opportunities encountered by high school and university educators during the COVID-19 outbreak?

The participants were asked to indicate the main challenges they faced and to evaluate them on a Likert scale from 1 (low) to 5 (high) for the following issues:

- Difficult to communicate and involve students with socioeconomic problems;
- Personal health problems;
- Confusion related to governmental directives;
- Lack of support from technicians administering;
- Difficulties in interacting and communicating with students or parents;
- Mixed personal needs with job tasks (parenting, homeschooling);
- Low level of skills and knowledge about online teaching instruments, devices, and approaches;
- Internet access;
- Quality of technological infrastructure;
- Difficulties in dealing with overwhelming online learning resources and tools available.

Figure 3 lists the findings obtained by our respondents.

As could be evinced from the graph, the major challenges are related to the following: the lack of time to learn new attitudes and devices; quality of technological infrastructure; and low level of skills and knowledge about online teaching instruments, devices, and approaches.

A negative aspect highlighted by both teachers and pedagogues was the lack of Internet. The most important part of doing online learning is supporting facilitation such as an Internet connection. Several research studies have shown that lack of access to facilities, including home access, is another dynamic obstacle that prevents teachers from incorporating modern technology into education (Ghavifekr et al. 2016). In our study, the lack of Internet was seen as a problem by 30 pedagogues and 15 teachers. Students found helpful the videos uploaded by the teachers, as they could see them at any time, pause, and take notes when needed. "Google Classroom is the simplest and appropriate way to communicate with teachers without missing any lesson." Even the university students stated the same for videos through the "Teams" platform. One teacher stated that "Using google classroom during the academic year 2019–2020 helped me because everything was saved, I only added extra material to the new academic year." Therefore, this is seen as a critical view for the teachers themselves, who want to improve their teaching materials.

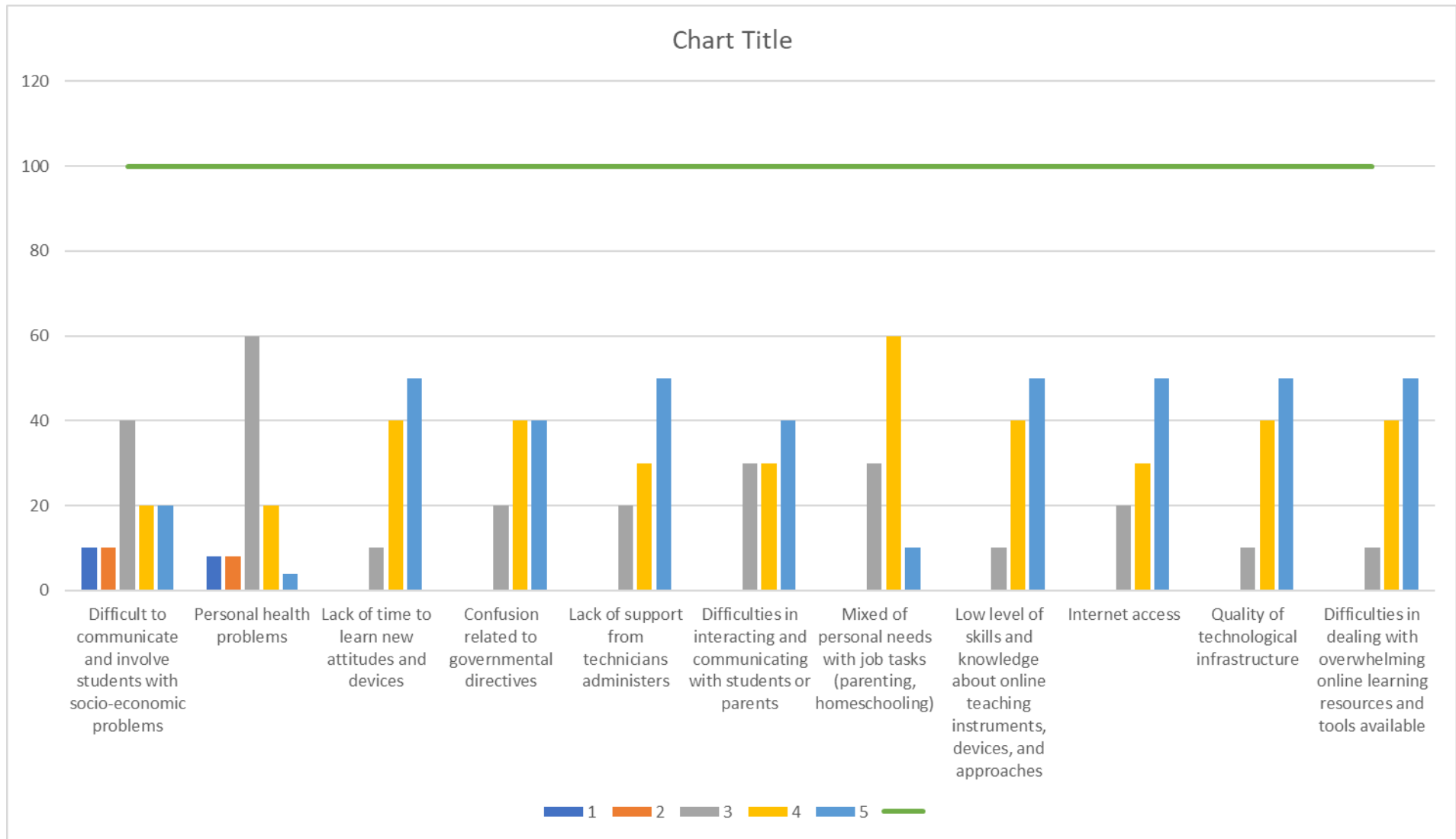


Figure 3. Online teaching challenges.

Some teachers confirmed also the “*Lack of concentration during the all-time lesson*”. That was not noticed by the pedagogues. They faced other difficulties, such as

- Lack of procedure practices and lack of direct contact with the student in the lecture especially during the evaluation;
- Difficulties in controlling the individual task of the pupil during the lesson;
- Low competencies in using ICT;
- The activation of the students in the seminars;
- Lack of interactivity and lack of feedback.

#### 4.3. Online Teaching Benefits and Opportunities

The respondents were asked to report any benefit or opportunity derived from the 2-year online teaching experience during the pandemic. The findings demonstrate, in general, that a positive impact of distance learning was recognized in terms of confirmation by the respondents, as reported in Table 8.

**Table 8.** Teachers and pedagogues benefit from online teaching.

Teachers’ Benefits from Online Teaching:	Pedagogues’ Benefits from Online Teaching:
<p>A great opportunity to exchange knowledge and ideas.            Update with new teaching methodology.            Interactive communication through technology.            A great possibility to demonstrate examples in real time.            Ability in gathering and sharing materials.            Extension of professional knowledge.            Improvement of computer teaching knowledge.            Fast correction of pupils’ knowledge through quiz.            A new way of communicating with students.</p>	<p>New computer skills, online teaching platform usage, the agility in using technology for teaching.            A secure track of teaching and learning process. The synchrony in the evaluation of teaching and learning in real time.            The right practice to carry out the lesson or the test in online platform.            Fast correction of task and tests.            Several applications for more interactivity.            Audiovisual illustration is simpler and gives more possibilities than in the auditorium.            Knowing several computer programs.            Experience on online teaching platforms, graphics, and online tests.            Time management.            A fast communication with the students.            Expanding students’ knowledge through a lot of videos.            A more organized, efficacious, and updated teaching.            Sharing the work online, to teach the students how to search on their own, how to find the right information.            Exchanging experience between homologues and students.            Improvement of teaching quality using technology.            Another teaching alternative using technology.</p>

An interesting aspect emphasized by the teachers is their improvement through online teaching. Loveless (2003, p. 14) stated that digital technologies are being used to locate, search, and capture information in a variety of forms; connect networks; and attach meanings to spaces.

Most teachers and pedagogues claimed that online learning helped them to continue the interaction with their students and created an alternative for increasing the participation and interest among the students. Moreover, most of them considered the emergency an opportunity to embark on this new teaching modality and consider it an effective way to engage with students also in the future, in strict combination with face-to-face teaching.

Comparing the two groups, it is possible to identify some differences and similarities between teachers and pedagogues. For what concerns the teaching process, the results show that lecturing with a PowerPoint screen was mostly carried out by pedagogues. The most used online platform was teamed with pedagogues, which allowed for a more interactive and practical teaching process. On the other hand, teachers mostly used Zoom as it was easier to use, considering the low level of their digital competencies. Both groups use synchronous and asynchronous teaching methods. Yet the level of readiness and

competencies was different between the two groups. Pedagogues were more prompt in dealing with new technologies and unexpected challenges faced.

## 5. Conclusions

The COVID-19 outbreak interrupted the learning process at all levels of education. Teachers and pedagogues found themselves dealing with online teaching in a matter of days. This immediate transformative shift was associated with many problems, difficulties, and challenges at different levels of education. To understand the experience of online teaching activities among pedagogues and teachers in Albania during the COVID-19 period, we realized this study that involves 100 respondents.

The objective of this study was to explore online teaching activities and understand the main challenges faced as well as any opportunities.

The findings demonstrate the progress of teachers and pedagogues in computer skills even while the effectiveness of online learning is not compared with classroom learning.

The development of digital skills and competencies among teachers of all levels remains an issue to be afforded through dedicated upskilling and reskilling programs. Experienced teachers should get more use of new technology by exploring online platform quizzes, Google documents, diagrams, and videos to share not only their knowledge with the students but also their experience with new teachers. It is very important for teachers' professionalism for effective use in online learning.

Moreover, technical issues have a large impact on the effectiveness of online learning. Therefore, technological tools, technical support, as well as some technical skills are compulsory to ensure an effective online learning process.

The teaching techniques are as important as the knowledge itself because they are the right way of explaining to students. From the techniques used before in the classroom, some of them can also be used through online platforms such as "Group discussion, Cluster, Electronic Brainstorming, Venn Diagram". Of course, teachers should be aware of the different roles and responsibilities in the online learning system so they can refer to the appropriate resources as well as find a simplified way of explanation.

Both teachers and pedagogues extensively use the quiz function on Google forms as an assessment tool during their online teaching.

Our findings indicate that educators' behaviors are highly dependent on sex, age, and prior experience characteristics, and this highly impacts the quality and effectiveness of the process. Therefore, it is crucial to consider these characteristics in developing and implementing online teaching modalities in the future.

The 2 years of online teaching experience during the pandemic improved the computer teaching knowledge of the teachers and pedagogues for interactive communication, great possibilities to demonstrate examples in real time, and widening of professional knowledge.

Progress in the teaching methodology can be noticed because all teachers and pedagogues have advanced in new computer skills, new online teaching platform usage, and agility in using technology for effective and interactive teaching. Therefore, it is evident that the teaching quality improved using technology.

The findings of this study are coherent with previous studies in different contexts, such as the study of [Abid et al. \(2021\)](#) that argued that "online teaching effectiveness is challenged by the content and technology management, lack of previous online teaching experience, lack of systematic approaches, and cultural and gender-related issues, and consequently, low student engagement was experienced which was of a temporary or a superficial nature" (p. 382). In addition, [Saha et al. \(2022\)](#) reported on the challenges faced in shifting toward online learning in the case of Ethiopian universities and the essential role played by training, appropriate online learning platforms, and suitable infrastructure.

Meanwhile, [Malik \(2018\)](#) highlighted the role of educators' previous experiences, digital competencies, and online education tools as essential for a performant online learning experience.

Therefore, this study contributed to strengthening the body of research especially for understanding developing countries' experiences and characteristics as well as for defining main constructs and variables for developing a general framework for implementing effective online learning.

In addition, comprehending the role of educators' experience and their behaviors to engage in online training is a useful reference for future online learning initiatives.

### *Implications*

The results of this study imply that there is an urgent need today for all education institutions to rethink their learning approaches. Online and face-to-face teaching will become a standard way of teaching; hence, it becomes compulsory to adjust structures, infrastructures, and educational models to the new transformative situation. As argued by [Cameron and Green \(2019\)](#), it is necessary to create trust, rethink processes, reinforce the collaboration of different parts, and be aware that the adoption of online teaching and learning requires new competencies, skills, attitudes, and behaviors, as well as constant evaluation and upgrading, far from conforming to an ordinary standard ([Merrill 2020](#)).

Yet, the question for the future is: can teachers and pedagogues obtain the best of online platforms and integrate them into our everyday teaching? Should this online teaching experience go ahead? Or is it better to go back to traditional classes face to face?

Therefore, more research should be carried out on making evident the benefits of online teaching through several online platforms and to obtain the best of them even in future teaching. This is a discussion of the open questions for future research. In every teaching period, the teacher's training is needed and the best is to be applied for effective use (online or in the classroom). In addition, future research is necessary to deepen the understanding of how the education sector needs to adjust to the new environmental conditions, focusing more on the role of technological innovation in the new normal created by the COVID-19 disruption.

Like all studies, this study was not without *limitations*. Firstly, it focuses on a specific country; therefore, it is impossible to generalize the findings. Instead, a comparison with other countries (developing ones) may provide a better scenario and more insights into major opportunities and challenges. Future research is necessary to analyze and compare the results with other contexts. Moreover, the methodological approach has its weaknesses related to the sample and context of the study. A larger survey that includes other contexts might be necessary, too.

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## Appendix A

### Questionnaire

#### Questionnaire with teachers and pedagogues, for online teaching in the years 2020, 2021

This questionnaire, for study effect, aims the data collecting from teachers of pre–university education on online teaching. Your answers will be completely confidential. Thank you!

Note: For questions 6, 7, 8, 12 you have more than an option.

**1. Gender**

- Female
- Male

**2. Age**

- 25–35
- 35–45
- 45–55
- 55–60

**3. Education/Title**

- University
- Master
- PhD

**4. How many years of work do you have as a high school teacher?**

- less than 5 years
- 5 years
- 10 years
- 20 years
- over 20 years

**5. The subject you teach is:**

\_\_\_\_\_

**6. The platform you have used in online teaching is:**

- Teams
- Google classroom
- Zoom
- akademia.al

**7. Add any other platform:**

- Other: \_\_\_\_\_

**8. Did you have any experience with online teaching experience before COVID?**

- Frequently
- Occasionally
- Never

**9. Which lesson presentation form have you used in online teaching?**

- PowerPoint
- Video
- Materials in PDF
- Materials in Word
- Grafic

**10. Add any other lesson presentation form you used in online teaching:**

- Other: \_\_\_\_\_



**11. Which technique you used in online teaching?**

- Venn Diagram
- Electronic Brainstorming
- PMI Brainstorming
- Cluster
- Discussion in teams and in group
- DLTA—Directed Listening
- INSERT
- Close
- SCAMPER—Substitute-Combine-Adapt-Modify-Put to another use-Eliminate-Reverse
- 'SQ3R' Survey—Question-Read-Recite-Review
- 'SWOT'—Strengths-Weaknesses-Opportunities-Threats
- none

**12. Add any other technique you used in online teaching:**

- Other: \_\_\_\_\_

**13. Have you used online Quiz as a technique for knowledge measurement?**

- Yes
- No

**14. Are you trained for online teaching or you studied by yourself?**

- Yes, I am trained
- No, I am not trained
- I learned autodidact

**15. Do you think is necessary the teacher's training for online teaching?**

- Yes
- No

**16. For what would you like to be trained for your online teaching?**

- To create a quiz
- To create graphics
- To create a test
- To create individual works and in groups with students/special students

**17. Add for any other activity or method that you would like to be trained:**

- Other: \_\_\_\_\_

**18. Do you have difficulty in correcting homeworks online?**

- Yes
- No

**19. What did you benefit from online teaching?**

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**20. What difficulties you faced in online teaching?**

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**21. From 1 to 5 how much are improved your skills in online teaching compared a year ago?**

- 5 (a lot)
- 4
- 3
- 2
- 1 (at all)

## References

- Abid, Tayyaba, Gulnaz Zahid, Naseem Shahid, and Maham Bukhari. 2021. Online teaching experience during the COVID-19 in Pakistan: Pedagogy–technology balance and student engagement. *Fudan Journal of the Humanities and Social Sciences* 14: 367–91. [CrossRef]
- Adedoyin, Olasile Babatunde, and Emrah Soykan. 2020. COVID-19 pandemic and online learning: The challenges and opportunities. *Interactive Learning Environments* 28: 1–13. [CrossRef]
- Alabbasi, Daniah. 2022. Factors Influencing Student Engagement in Virtual Classrooms and Their Impact on Satisfaction. In *Society for Information Technology & Teacher Education International Conference*. Waynesville: Association for the Advancement of Computing in Education (AACE), pp. 124–33.
- Al-Awidi, Hamed Mubarak, and Fayiz M. Aldhafeeri. 2017. Teachers’ readiness to Implement Digital Curriculum in Kuwaiti Schools. *Journal of Information Technology Education* 16: 105–26. [CrossRef]
- Alexander, James, Sarah McLachlan, Massimo Barcellona, and Catherine Sackley. 2019. Technology-enhanced learning in physiotherapy education: Student satisfaction and knowledge acquisition of entry-level students in the United Kingdom. *Research in Learning Technology* 27: 1–14. [CrossRef]
- Amhag, Lisbeth, Lisa Hellström, and Martin Stigmar. 2019. Teacher Educators’ Use of Digital Tools and Needs for Digital Competence in Higher Education. *Journal of Digital Learning in Teacher Education* 35: 203–20. [CrossRef]
- Arsimi.gov.al. 2020. *Sondazh i Mësimiit Online, Perceptime të Mësuesve, Prindërve Dhe të Nxënësve*. Tiranë: Ministria e Arsimit, Sportit dhe Rinisë.
- Bond, Melissa, Victoria I. Marín, Carina Dolch, Svenja Bedenlier, and Olaf Zawacki-Richter. 2018. Digital Transformation in German Higher Education: Student and Teacher Perceptions and Usage of Digital media. *International Journal of Educational Technology in Higher Education* 15: 48. [CrossRef]
- Cameron, Esther, and Mike Green. 2019. *Making Sense of Change Management: A Complete Guide to the Models, Tools and Techniques of Organizational Change*. London: Kogan Page Publishers.
- Chang, Tung-Zong Donald, and Nicole Vowles. 2013. Strategies for improving data reliability for online surveys: A case study. *International Journal of Electronic Commerce Studies* 4: 121–30. [CrossRef]
- Daniel, Sir John. 2020. Education and the COVID-19 pandemic. *Prospects* 49: 91–96. [CrossRef]
- Elia, Gianluca, Giustina Secundo, and Cesare Taurino. 2009. The web learning system of ‘Virtual eBMS’: A tool supporting unstructured and just-in-time learning. *International Journal of Networking and Virtual Organisations* 6: 140–60. [CrossRef]
- Ghavifekr, Simin, Thanusha Kunjappan, Logeswary Ramasamy, and Annreetha Anthony. 2016. Teaching and Learning with ICT Tools: Issues and Challenges from Teachers’ Perceptions. *Malaysian Online Journal of Educational Technology* 4: 38–57.
- Greenlee, Bobbie J., and Zorka Karanxha. 2010. A study of group dynamics in educational leadership cohort and non-cohort groups. *Journal of Research on Leadership Education* 5: 357–82. [CrossRef]
- Hair, Joseph F., G. Tomas M. Hult, Christian M. Ringle, Marko Sarstedt, Nicholas P. Danks, and Soumya Ray. 2021. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Oaks: Sage Publications.
- Hampel, Regine, and Ursula Stickler. 2005. New skills for new classrooms: Training tutors to teach languages online. *Computer assisted Language Learning* 18: 311–26. [CrossRef]
- Hodges, Charles B., Stephanie Moore, Barbara B. Lockee, Torrey Trust, and Mark Aaron Bond. 2020. The difference between emergency remote teaching and online learning. *Educause Review*. Available online: <http://hdl.handle.net/10919/104648> (accessed on 6 September 2022).
- Jubani, Aljula, Irida Hoti, and Mimoza Gjokutaj. 2013. *Teknika dhe strategji që mundësojnë kreativitetin, Mësimdhënia e gjuhës shqipe përmes veprimtarive krijuese dhe ndërvepruese*. Tiranë: Shtëpia Botuese “Shkronjë pas Shkronjë”, pp. 42–59.
- Khemani, Bharti, Jewel Sabhani, and Mala Goplani. 2023. Use of a Precious Commodity—‘Time’ for Building Skills by Teachers for Online Teaching During Pandemic by Using Decision Tree and SVM Algorithm of Machine Learning. In *Proceedings of Third International Conference on Computing, Communications, and Cyber-Security*. Singapore: Springer, pp. 551–65.
- Ku, Heng-Yu, Hung Wei Tseng, and Chatchada Akarasriworn. 2013. Collaboration factors, teamwork satisfaction, and student attitudes toward online collaborative learning. *Computers in Human Behavior* 29: 922–29.
- Lederman, Doug. 2020. Will shift to remote teaching be boon or bane for inline learning? Inside Higher Ed. Available online: <file:///D:/COVID/Most%20teaching%20is%20going%20remote.%20Will%20that%20help%20or%20hurt%20online%20learning.html> (accessed on 20 April 2022).
- Li, Li, Hongbin Wu, Xiaoyang Ye, Cheng Liu, and Weimin Wang. 2021. Students’ initial perspectives on online learning experience in China during the COVID-19 outbreak: Expanding online education for future doctors on a national scale. *BMC Medical Education* 21: 584. [CrossRef] [PubMed]
- Liu, Xiaojing, Richard J. Magjuka, and Seung-hee Lee. 2008. The effects of cognitive thinking styles, trust, conflict management on online students’ learning and virtual team performance. *British Journal of Educational Technology* 39: 829–46. [CrossRef]
- Loveless, Avril M. 2003. *Creativity, Technology and Learning—A Review of Recent Literature*. Slough: School of Education, University of Brighton.
- Malik, Ranbir Singh. 2018. Educational challenges in 21st century and sustainable development. *Journal of Sustainable Development Education and Research* 2: 9–20. [CrossRef]

- Merrill, Stephen. 2020. Teaching through a Pandemic: A Mindset for This Moment. Edutopia. Available online: <https://www.edutopia.org/article/teaching-through-pandemic-mindset-moment> (accessed on 5 May 2022).
- Miles, Sandy Jeanquart, and Glynn Mangold. 2002. The impact of team leader performance on team member satisfaction: The subordinate's perspective. *Team Performance Management: An International Journal* 8: 131–21. [CrossRef]
- Salas-Morera, Lorenzo, Antonio Arauzo-Azofra, and Laura García-Hernández. 2012. Analysis of online quizzes as a teaching and assessment tool. *Journal of Technology and Science Education (JOTSE)* 2: 39–45. [CrossRef]
- Myrsky, Liisa, and Taina Joutsenvirta. 2015. Open-book, Open-Web Online Examinations: Developing Examination Practices to Support university Students' Learning and Self-Efficacy. *Active Learning in Higher Education* 16: 119–32. [CrossRef]
- Myrsky, Liisa, Veera Kallunki, Nina Katajavuori, Saara Repo, Tarja Tuononen, Henriikka Anttila, Päivi Anneli Kinnunen, Anne Haarala-Muhonen, and Eeva Pyörälä. 2022. COVID-19 Accelerating Academic Teachers' Digital Competence in Distance Teaching. *Frontiers in Education* 7: 770094. [CrossRef]
- Ndou, Valentina. 2021. Social Entrepreneurship Education: A Combination of Knowledge Exploitation and Exploration Processes. *Administrative Sciences* 11: 112. [CrossRef]
- OECD. 2019. SME Policy Index: Western Balkans and Turkey. Available online: <https://www.oecd.org/publications/sme-policy-index-western-balkans-and-turkey-2019-g2g9fa9a-en.htm> (accessed on 5 May 2022).
- OECD. 2021. *Challenges and Adaptions, Using Digital Technologies for Early Education during COVID-19*. Report for the G20 2020 Education Working Group. France: OECD Publishing.
- Pandey, Digvijay, Gabriel A. Ogunmola, Wegayehu Enbeyle, Marzuk Abdullahi, Binay Kumar Pandey, and Sabyasachi Pramanik. 2022. COVID-19: A framework for effective delivering of online classes during lockdown. *Human Arenas* 5: 322–36. [CrossRef]
- Petrie, Chris. 2020. Spotlight: Quality Education for All during COVID-19 Crisis (Hundred Research, Report #01). United Nations. Available online: <https://hundred.org/en/collections/quality-education-for-all-during-coronavirus> (accessed on 20 April 2022).
- Ratten, Vanessa. 2020. Coronavirus (COVID-19) and the entrepreneurship education community. *Journal of Enterprising Communities: People and Places in the Global Economy* 14: 753–64. [CrossRef]
- Richards, J. Jack, and Theodore Rodgers. 2001. *Approaches and Methods in Language Teaching*. New York: Cambridge University Press, p. 20.
- Richards, Jack J., and Richard Schmidt. 2002. Teacher education. *Longman Dictionary of Language Teaching and Applied Linguistics* 552: 554.
- Saha, Sourav Mohan, Sadia Afrin Pranty, Md Jaber Rana, Md Jahurul Islam, and Md Emran Hossain. 2022. Teaching during a pandemic: Do university teachers prefer online teaching? *Heliyon* 8: e08663. [CrossRef]
- Secundo, Giustina, Gioconda Mele, Pasquale Del Vecchio, Gianluca Elia, Alessandro Margherita, and Valentina Ndou. 2021. Threat or opportunity? A case study of digital-enabled redesign of entrepreneurship education in the COVID-19 emergency. *Technological Forecasting and Social Change* 166: 120565. [CrossRef]
- Secundo, Giustina, Pierluigi Rippa, and Michele Meoli. 2020. Digital Transformation Adoption in Entrepreneurship Education Centres: Preliminary Evidences from the Italian Contamination Labs Network. *International Journal of Entrepreneurial Behavior and Research* 26: 1589–605. [CrossRef]
- Sorva, Juha, Ville Karavirta, and Lauri Malmi. 2013. A Review of Generic Program Visualization Systems for Introductory Programming Education. *ACM Transactions on Computing Education (TOCE)* 13: 1–64. [CrossRef]
- Taşner, Veronica, Mihelic Žvegljic, and Metka Mencin Čeplak. 2017. Gender in the Teaching Profession: University Students' Views of Teaching as a Career. *Center for Educational Policy Studies Journal* 7: 47–69. [CrossRef]
- Varga, Matija. 2020. Analysis of the Use of Online Teaching Tools in Specific Circumstances. *Polytechnica: Journal of Technology Education* 4: 2. [CrossRef]
- Vinogradova, Maria, Victor Konstantinov, Valeriy Prasolov, Anna Lukyanova, and Irina Grebenkina. 2019. Level entrepreneurship-role in the digital economy, tendencies of improvement of the information support system. *Journal of Entrepreneurship Education* 22: 1–12.
- Watermeyer, Richard, Tom Crick, Cathryn Knight, and Janet Goodall. 2021. COVID-19 and Digital Disruption in UK Universities: Afflictions and Affordances of Emergency Online Migration. *Higher Education* 81: 623–41. [CrossRef] [PubMed]
- Webb, Aleksandra, Ronald William McQuaid, and C. William R. Webster. 2021. Moving learning online and the COVID-19 pandemic: A university response. *World Journal of Science, Technology and Sustainable Development* 18: 1–19. [CrossRef]
- Wolverton, Collen C. 2018. Utilizing synchronous discussions to create an engaged classroom in online executive education. *The International Journal of Management Education* 16: 239–44. [CrossRef]
- Zhang, Wunong, Yuxin Wang, Lili Yang, and Chunyi Wang. 2020. Suspending Classes Without Stopping Learning: China's Education Emergency Management Policy in the COVID-19 Outbreak. *Journal of Risk and Financial Management* 13: 55. [CrossRef]