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Towards Quality Digital Learning: Lessons Learned during COVID-19 and Recommended Actions—The Teachers' Perspective

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Abstract: The research focuses on identifying challenges and lessons from distance learning experiences in Italy during COVID-19, on opportunities emerging from a more digitalized school in the post-COVID-19 crisis, and on preparedness for potential future emergencies. The study aims to analyze different teachers' experiences, perceptions, and perspectives on distance learning and provide suggestions for addressing crises and emergencies. An online survey based on a semi-structured questionnaire was conducted targeting primary and secondary school teachers and including schools whose students are only from urban contexts and schools where students are also from rural areas. The main results indicated that teachers were resilient and proactive and found strategies and good practices to deal with distance learning, although several open technological and pedagogical challenges remain unsolved. Finally, some recommended priority actions for stakeholders and policymakers have been provided to face these challenges and ensure inclusive and equitable quality education.

Keywords: distance learning challenges; teachers; best practices; quality learning; digital inclusion

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1. Introduction

Education has been one of the most affected sectors by the global health emergency caused by the COVID-19 pandemic and has had significant societal and economic impacts worldwide. The lockdown measures adopted to contain the pandemic forced schools and universities to find urgent alternatives to face-to-face lessons through digital learning environments. Distance learning has been used on an unprecedented scale to ensure the continuity of education activities, involving about 94% of the world's student population [1].

In Italy, in the first phase of the pandemic, all schools at all levels were closed throughout the national territory (from the beginning of March 2020 to the end of the school year), and distance learning replaced face-to-face lessons [2]. During the school year 2020/21, the duration of the periods of partial or total suspension of face-to-face teaching was different according to the school orders and territories, as required by the Decree of the President of the Council of Ministries (DPCM) of Italy issued starting from 6 November 2020, and by some regional ordinances, which sometimes set further constraints, rotating periods of face-to-face teaching with periods of distance learning until the end of the school year [3].

The emergency has posed several challenges for the education system to maximize the effectiveness of distance learning and assure the principle stated by UNESCO in the Global Education 2030 Agenda [4] "to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all".

The paper illustrates the results of the survey involving Italian teachers, describing their perceptions and perspectives on the distance learning experience. On this basis, the paper suggests lessons for the future and proposes actions to develop a digital approach to

the educational processes. The study was carried out one year after the beginning of the pandemic, when Italian schools had already experienced lockdown periods at national and local levels. An online survey, based on a semi-structured questionnaire, was carried out with primary and secondary school teachers focusing on the following main questions:

- What were the main difficulties, challenges, and opportunities experienced by teachers and students during the COVID-19 pandemic in Italy?
- What were the strategies and best practices deriving from the teacher's experiences to encourage students' involvement and inclusion?
- Which are the suggested actions to improve distance learning and provide a high-quality education and learning opportunities for all?

The paper is organized as follows: Section 2 analyzes the literature on the online learning challenges during COVID-19. In Section 3, the used methodology is described, and Section 4 discusses the study results. Section 5 concludes and discusses the paper with some final considerations.

2. The Debate on Online Learning during COVID-19

The challenges in education related to the exclusive use of online learning during the pandemic of COVID-19 have been widely discussed in the literature, mainly relating to technological, pedagogical and social issues.

The technological issues referred to were the availability of educational resources and devices like computers, access problems and/or unreliability of Internet connection [5–9], and the necessity of more adequate and interactive e-learning platforms [10]. Some countries used television or radio for distance learning to reach all learners [11,12] and overcome Internet access problems.

The pedagogical challenges were related to teachers' lack of digital skills and the need to improve technical and pedagogical competencies by providing training and guidelines for teachers and students [10,13,14]. Moreover, the lockdown reduced human interaction both between teachers and students and among students. Interaction is fundamental to know different points of view and ideas influencing the achievement of educational goals [15,16]. For this purpose, it was suggested to offer interactive multimedia materials in line with the current curriculum [14] and use more interactive resources (images, animations, educational games) to gamify education and increase students' engagement and motivation [7,13].

One of the most critical challenges of distance learning is, in fact, students' engagement. Salas-Pilco et al. [17] conducted a systematic review on student engagement considering three dimensions: (i) behavioral engagement respectively related to the students participation, interaction, collaboration, achievement, performance, skill development, and learning activity completion; (ii) cognitive engagement: related to the students motivation to learn online, self-regulated learning, self-efficacy, critical thinking and reflection; and (iii) affective engagement: related to students positive attitudes towards the online learning environment (teachers, peers and courses, satisfaction and well-being). The authors indicated motivation, positive self-perception of digital literacy, and self-regulation as the crucial factors for the success of online learning engagement. Other studies also found that a high level of engagement is deeply related to: (i) the students' interaction with classmates, teamwork, collaborative and soft skills [18]; (ii) students' motivation [19–21]; (iii) emotional support, positive attitude and previous online experience [22,23]. Therefore, the literature suggested to us that it is fundamental for teachers to find strategies and methods to increase students' involvement and their motivation. For this aim, different teaching strategies have been developed in recent years. Among these, gamification can be considered quite a proper pedagogical strategy to promote participation and increase students' motivation and involvement [24,25].

Nieto-Escamez [26] analyzed gamification as an online teaching strategy during the COVID-19 pandemic and also studied students' learning and motivation outcomes. Gamification (they reported) was an efficient and engaging strategy, motivating students to

collaborate and to have fun experiences, especially in disciplines that need laboratories such as Science, Technology, Engineering, and Mathematics (STEM).

Furthermore, using video games, such as Minecraft, also increases cooperative learning [27], enabling students to acquire knowledge and skills in different disciplines and making them engaged, interested, and enthusiastic [28].

Other pedagogical challenges were related to the lack of students' feedback and concentration [13,14]. Ramírez-Hurtado et al. [29] suggest to reduce online sessions and to insert mind breaks into the planning, along with mini-tasks and the use of apps that block access to other apps unrelated to the online lessons.

The social challenges are related to difficulties faced by disadvantaged groups that do not have the minimum necessary conditions for online learning [30]. Online learning may sometimes amplify the gap between people of different socioeconomic levels [31]. Furthermore, some problems are linked to the lack of suitable environments at home for learning and study, amplified by a lack of support from parents who do not have the basic skills [5–8]. Williamason and Hogan observed that "*Social, educational, health and digital inequalities have never been clearer. Perhaps now is a time to make a more decisive set of significant social and digital changes*" [32]. Ferri et al. [33] analyzed the challenges of online learning in different countries and suggested some proposals for policymakers. These actions ranged from strengthening the internet connection and greater availability of devices to the need for teachers' training courses and developing more inclusive and interactive tools, platforms, and devices, including emerging technologies. The United Nations [34] is encouraging governments and stakeholders to take action to accelerate inclusive changes in delivering quality education to leave no one behind. In Italy, despite the improvements achieved in the last decade, young people's education skills still depend on their social level and the area where they live. According to the Report on Equitable and Sustainable Wellbeing of ISTAT [35], the closure of schools and universities and the shift towards distance learning in 2020 exacerbated inequalities. This was usually due to the poor availability of IT devices that, as stated by the quoted report, affects 8% of children and young people in schools of all levels, who were excluded from any form of distance learning, and 23% among children with disabilities

One of the first studies on online learning, carried out in Italy two months after the beginning of the COVID-19 pandemic lockdown, found that teachers were able to assure educational continuity, although they met several difficulties such as an increase in workload, bad connectivity, and the inadequacy of the home [36]. Public authorities did not impose detailed compulsory guidance to regulate teachers' behavior, leaving teachers free to take decisions such as the number of working hours to dedicate to online classes. Malandrino and Sager [37] found that teachers' discretion can enhance the role of professionalism in times of crisis. This situation stimulated the teachers' proactive behavior, e.g., supporting students unconventionally through cell phones outside school hours. On the contrary, Paolo Ferri [38], in his study, underlines that although teachers reacted well with their commitment and dedication, they often worked without adequate tools and preparation. The study emphasizes teachers' need for structured didactic planning, making the methodology transparent to the students. This planning should define the online activities' rhythm and give students continuous feedback. It also should modify students' evaluations, including the activities made online.

3. Materials and Methods

A survey organized the data collection involving a sample of Italian teachers of primary and secondary (first and second grade) schools. The sample was selected considering the geographic school location (North East, North West, Centre, South and Islands of Italy) and distinguishing between schools with students from urban areas only and schools also including students from rural areas (the sample characteristics of the participants are shown in Table 1). Each school was asked to qualify itself as urban only or including students from rural areas.

Table 1. Participants' characteristics.

Variable	Options	f	(%)
Gender	Males	185	19%
	Females	792	81%
Age	Less than 28	14	1%
	29–39	110	11%
	40–49	283	29%
	50–59	428	44%
	More than 60	142	15%
Level of school teaching	Primary school	315	32%
	Middle school	243	25%
	High school	419	43%
Teaching experience	For 5 years or less	112	11%
	Between 6 and 10 years	122	13%
	Between 11 and 15 years	128	13%
	Between 16 and 20 years	125	13%
	Between 21 and 25 years	173	18%
	Between 26 and 30 years	119	12%
	Over 30 years	198	20%
Subject matter of expertise	Humanities disciplines	436	45%
	Technical disciplines	70	7%
	Scientific disciplines	266	27%
	Exercise sciences	24	2%
	Other	181	19%
School location	Northeast	339	35%
	Northwest	130	13%
	Centre	120	12%
	South	286	29%
	Islands	102	11%
Schools with a catchment area also coming from rural areas	Yes	602	62%
	No	364	38%

The survey was conducted from July to November 2021. The participants were contacted by an email sent by the authors to the education superintendency of each province and the heads of single schools. The participants in the study were provided with a link that directly connected them to an explanation of the aim of the research, the informed consent and the online survey (https://ec.europa.eu/eusurvey/runner/Questionariodocenti2021, accessed on 20 May 2022). The questionnaire was administrated using the platform EUSurvey (a secure tool recommended by European Commission). The collected data do not include any information enabling the respondents' identification, do not intercept the IP number and do not memorize the respondents' cookies. All laws at the national and European levels and the general regulation for the protection of personal data n. 2016/679 (GDPR) were followed.

The questionnaire was organized in five different sections: (i) socio-demographic and professional data of respondents (such as age, gender, school location, teaching subject, years of teaching experience, perceptions of their readiness for distance learning); (ii) expe-

riences and perceptions on distance learning, considering opportunities, difficulties and challenges faced; (iii) used platforms: before and during the COVID-19 crisis, and their advantages and disadvantages; (iv) students' inclusion and involvement: methods/strategies, and best practices followed to encourage students' involvement and inclusion, suggestions for providing quality, equitable and inclusive education, and learning opportunities for all; (v) actions to be done to improve distance learning, and finally the expected changes in schools in the future. The questionnaire used different kinds of questions: structured questions based on closed dichotomous, multiple-choice questions, and open questions.

A total of 977 teachers filled out the questionnaire. The collected data were analyzed using the Statistical Package for the Social Sciences.

A convenience sampling method was used. It is a non-probability sampling method, so the probability of selecting each sample from the population cannot be accurately determined [39]. Researchers and people matching these characteristics determine the characteristics of the people who will form the population are considered. Quite obviously, among the selection criteria for participation in the study, respondents were required to be Italian teachers and have actively used online teaching during the COVID-19 pandemic.

4. Results

4.1. Quantitative Results

In total, 977 teachers participated in the study, and most of them were females (81% versus 19% males); these data reflect the Italian situation, in which most teachers are females. The age of the respondents was high; indeed, 44% were aged 50–59 years. Those aged 40–49 years are 29%, and 20% of respondents have a long teaching experience (over 30 years). Most of the schools that participated in the study (62%) host a catchment area of students also coming from rural areas, and 38% are only urban schools. In particular, referring to the main geographical subdivisions of Italy, the schools participating in the study that host a catchment area also from rural areas are: Centre 37%, Islands 62%, Northeast 67%, Northwest 34% and South 78%. (Table 1).

As previously stated, in Italy, the pandemic found teachers quite unprepared to manage distance learning; most of the interviewees (58%) say that they did not receive adequate training before the pandemic, neither in the use of methodologies nor in the use of apps/tools/platforms for distance learning (62%). Only 19% claimed to have received full individual training, and 22% received little training. Also, 69% of respondents felt unprepared to use distance learning (the teachers who teach technical disciplines felt a little more prepared than the others), although 59% used, before the pandemic, online meeting platforms such as WhatsApp, Skype, Facebook, Messenger, etc. for personal purposes. During the pandemic, the experience with distance learning improved the teacher's skill in this field; only 7% of respondents feel currently unprepared to use distance learning.

4.2. Difficulties, Challenges and Opportunities of Distance Learning

The study found that distance learning was not very motivating for Italian students, and learning activity was not very satisfactory. In particular, there were technical difficulties and problems related to social and pedagogical aspects.

Table 2 summarizes the answers given by the teachers regarding the different technical difficulties encountered by their students. A comparison was made between schools that have a catchment area also coming from rural areas and schools that cover only an urban basin. The table shows that difficulties were experienced more by students attending schools from Islands, North East and North West. One of the most significant technical difficulties was represented by the availability of a stable Internet connection. The problem was more widespread in schools that have a catchment area also coming from rural areas. In particular, at the Centre of Italy, 100% of the teachers who participated in the study reported this problem faced by students, while schools collecting only an urban catchment area recorded lower percentages (see Table 2). Concerning the problem related to the lack of adequate devices (for example, the use of smartphones instead of a personal computer),

it was reported more in the schools that host an urban catchment area, and in particular, this was indicated by 95% of teachers in the Islands and by 94% in the North West. The limited availability of hardware devices due to the need to share them with other family members was registered mainly in the Islands, particularly in the schools with students from urban areas (85%) and in the North East in the schools with students also from rural areas (83%). The difficulty in using the platforms for distance learning was reported mainly from the schools with students from urban areas and, in particular, from Islands (59%). According to the teachers, the most used platforms for teaching, such as Google Suite for education, Zoom, ClasseViva Spaggiari, Office 365 Education, etc., were in many cases inadequate and difficult to use.

Table 2. Technical difficulties with distance learning.

Technical Difficulties Experienced by Students	Schools with Students from Rural Areas	Centre	Islands	North East	North West	South
Internet connection problems	YES	100%	98%	96%	91%	94%
	NO	89%	95%	93%	94%	90%
Lack of adequate devices (e.g., smartphones)	YES	70%	76%	71%	75%	76%
	NO	89%	95%	93%	94%	90%
Limited availability of hardware devices	YES	77%	81%	83%	80%	79%
	NO	78%	85%	79%	80%	77%
Difficulty in using the platforms for distance learning	YES	30%	42%	39%	45%	40%
	NO	42%	59%	45%	42%	42%
Lack or limited technical assistance	YES	39%	40%	31%	50%	32%
	NO	34%	41%	35%	31%	26%
Inadequate platforms used	YES	14%	16%	12%	30%	17%
	NO	14%	23%	12%	9%	23%

Another problem was the lack of or limited technical assistance; this problem was more reported by teachers of schools from the North West with also rural catchment areas (50%). According to all teachers, the problem least faced by students was the platforms' inadequacy. Again, this problem was more reported by teachers of schools from the North West, including rural catchment areas (30%).

Table 3 summarizes the answers given by the teachers regarding the different didactic difficulties encountered by their students. More difficulties seem to have been experienced by students attending schools from Islands, followed by North East and North West. One of the most significant didactic difficulties was a home environment unsuitable for distance learning. This problem was more felt by students in the schools from urban areas, probably because of dimensions of urban flats in comparison with rural ones. Another problem was the low attention level compared to classroom lessons (mainly reported in the Islands, 81% of respondents). A big concern expressed by teachers refers to the lack of interaction. According to some of them, there are conditions of time, space, and interactions in the relationship with and between students that can only be achieved in presence. Lack of interaction/collaboration with peers was reported more by teachers of schools of the North East (67%) and North West (61%). At the same time, the interaction between teacher and students was a minor problem because teachers, in most cases, were able to create a good interaction with their students also using alternative channels such as phone calls, WhatsApp, etc.

Instead, parents or family members lacked school support, especially for the primary level. This aspect was particularly evident in the Islands schools with students from urban areas (46%), and in North West schools with students also from rural areas (43%). In

some cases, distance learning increased inequalities, as students did not participate in didactic activities and were not adequately supported by their families. The use of new technologies was, in fact, experienced as difficult, for example, by foreign and economically and culturally disadvantaged families. The experience was more positive when families collaborated to support students; this implies a challenge in terms of inclusion and equal opportunities for students belonging to families that are not able to provide that support. Furthermore, this method was not considered suitable for some disciplines, particularly for primary school pupils who struggled to stay in front of a personal computer for video lessons. Finally, the lack or difficulty in finding structured material and content for e-learning represents a big challenge.

Table 3. Didactic difficulties with distance learning.

Didactic Challenges Experienced by Students	Schools with Students from Rural Areas	Centre	Islands	North East	North West	South
Environment at home not suitable for distance learning	YES	68%	81%	69%	59%	54%
	NO	71%	72%	59%	72%	55%
Inadequate teacher-student interaction	YES	30%	38%	37%	43%	21%
	NO	25%	38%	38%	34%	37%
Lack of interaction/collaboration with peers	YES	52%	54%	67%	61%	42%
	NO	59%	49%	59%	58%	40%
Low attention level compared to classroom lessons	YES	52%	81%	69%	66%	58%
	NO	59%	62%	61%	59%	55%
Lack of support from parents or a family member (especially for primary school)	YES	39%	29%	28%	43%	31%
	NO	29%	46%	37%	34%	29%
Lack or difficulty in finding structured material and contents for e-learning	YES	5%	16%	9%	20%	14%
	NO	4%	5%	8%	7%	8%

Despite the many difficulties encountered, 44% of teachers positively evaluated the experience with distance learning. Among positive factors, teachers claimed that it allowed them to experiment with new teaching tools and methodologies. Around 36% of teachers also positively assessed the students' experience because they had the opportunity to experiment with new study methods, became familiar with new platforms, and improved their digital skills. Among positive factors of distance learning, the most listed were: flexibility in providing education and accessing content and resources (66%), removal of space and time barriers (40%), ability to record and review lessons (44%), ability to customize and adapt courses to the needs of learners (27%) and motivate students to participate (for example shy kids), and to exchange views and ideas (23%).

According to teachers, compared to the first lockdown of 2020, many problems have remained the same during 2021 following lockdowns. However, the experience had some positive impacts such as students improved digital skills, more preparation and organization, greater awareness, more tools available for teachers and students, strengthening of the Internet connection (even if still not sufficient) and greater uniformity in teaching proposals. In addition, the online experience has led, in some cases, to the reuse of platforms even in the presence and the use of digital books.

4.3. Strategies and Best Practices to Encourage Students' Involvement and Inclusion

During the first lockdown, different interventions were taken in Italian schools to encourage the involvement and inclusion of students with limited access to technologies (network and devices) or with poor digital skills. Greater inclusion (despite not significantly different) was reached in schools not having students from rural areas (79%) than in those

that do (77%). The interventions most implemented by the schools were: the supply of devices on loan to students who needed them and the supply of Internet connection and technical assistance to access the platforms for students who were unable. In addition, many teachers have supported parents and students with tutorials, links, phone calls, WhatsApp, in a private way to enable all students to participate. For disabled students, some schools provided support teachers connected exclusively with the student and/or face-to-face lessons for some students with difficulty. Similar opportunities and challenges of distance learning were also studied in the literature before the pandemic [40,41].

Some strategies and best practices for students' involvement in distance learning during pandemic were implemented in many schools. A set of best practices followed by Italian teachers has been classified into six main categories:

Respect for netiquette: When students are not under the direct view of teachers in a classroom, at home behind a computer, they could have a lot of distractions and lose their attention. To avoid this, some teachers imposed some basic rules on their students. Firstly, punctuality in the connection, webcam turned on, appropriate clothing, correct and relevant language, evaluations test for each topic, and systematic homework control.

> "*I shared the vademecum for the distant learning with the students to have clear, simple rules to respect*".

> "*It is important to enforce the rules, including punctuality in the lesson, make students visible and actively participate in the lesson*".

Digital inclusion: One of the biggest problems with participating in online lessons was the availability of devices and/or poor internet connection for some students. To overcome this problem, some teachers tried to reach students using asynchronous methods, such as recorded simplified video lessons and video tutorials available for visualization by absent students. Moreover, some teachers made the contents of the electronic board (exercises and explanations) available in pdf and created educational videos through the YouTube channel. This method allowed students' improvements in training and greater punctuality in the delivery of assignments. Thanks to the preparation of video lessons and the possibility of being viewed at any time and even multiple times, it also strengthened students' autonomy.

Teachers also used non-formal tools such as SMS, phone calls and WhatsApp to provide support to their students and families. Moreover, digital books with interactive exercises were shared, and tasks were personalized according to the appropriate times and learning rhythms of students with particular fragility.

> "*Implementing the asynchronous mode (video/audio recording of lessons) instead of stressing students with live distance lessons could be a good way to work on autonomy even at a distance without weighing too much. The workload has to be thought differently, not as an online lesson for adults but as a different method of studying/learning*".

Active teaching and learning: students' levels of attention and concentration decrease when sitting in front of a computer for hours. This is the main reason why-active learning strategies are fundamental. Any teaching method or strategy actively involving students can be considered active learning. Many teachers stressed the importance of keeping the whole class active as much as possible, with continuous interaction with students, getting everyone to intervene in video lessons. They applied an active form of teaching involving students with interactive activities by using multimedia resources to keep their attention as if they were in their presence and encourage their involvement. Interactive teaching strategies were one of the best practices that helped to stimulate students' learning.

> "*I tried to make the meetings as participatory as possible by making sure that students work (alone or in a group) between one meeting and another, without overloading them and dedicating the hour in which we met as a moment of exchange and of presentation of the works carried out in which they were all the protagonists. I also tried to make the meetings very varied and participatory to keep attention by alternating my explanations*

with interactive material, short videos, sometimes using slides, and, first of all, giving space to their interventions".

These strategies aim to improve students' interest in the learning process, making them active participants in the lessons. Teachers used different methods to engage students and increase their interest, such as flipped classrooms in which the traditional learning process is inverted. Lectures are shared outside classroom time as homework while time in the classroom is spent in debates and interactive projects. Moreover, debates are a helpful strategy that attracts students' attention and allows looking at things from multiple perspectives, also improving their ability in public speaking. Another example is the use of different games, quizzes, and competitions suitable for the lessons. Instruments such as word puzzles, Pictionary and so on can easily be played online in the virtual classroom and be integrated with learning by doing, self-correcting tests with Google modules, interactive videos, quizzes, use of YouTube and multimedia channels, and so on.

"*I involved the students in activities that stimulated their interest. It is not easy to keep the students for many hours in front of a screen, it can be stressful. So, I continuously stimulated students through questions and quizzes, short videos, individual interventions by each student*".

"*The flipped classroom experience was very inclusive because it allowed each student to personalize the explanation of the topic presented, corroborating centrality and self-esteem*".

Cooperative learning: One of the most successful methods was cooperative learning, limiting frontal explanations and using platforms that allow collaborative work among students. Cooperative learning is one kind of active learning, which organizes students into groups with defined roles and includes tasks that the group has to carry out. Cooperative learning was possible by activating several virtual rooms simultaneously with the coordination of the teacher. The creation of small groups encouraged students' involvement, participation and socialization and the sharing of material produced by students with peers.

Some studies indicated that cooperative learning improves critical and creative thinking [42,43]. For example, brainstorming is an easy interactive activity that encourages students to share ideas and knowledge on the online whiteboard about questions or topics. Other examples are group projects that enable students to discuss issues and work together to solve problems and the use of breakout rooms available on some platforms (such as Zoom, Google Meet, Microsoft Teams, etc.). It allows for organizing students into smaller discussion groups during live sessions, fostering collaboration and sharing knowledge with classmates. Moreover, cooperative learning might imply using video games such as Minecraft, in which students can learn and carry out experiments cooperating with each other [27].

"*In my distance lessons, I used as much as possible the participation and involvement of each student through micro-exercises, micro-interventions, work in pairs and mini-groups that I monitored passing from one virtual room to another by using the breakout rooms. This allowed for cooperative participation and interaction among students*".

"*Distance learning was an important experience for experimenting with new teaching methods related mainly to group work, such as digital storytelling*".

Sense of belonging: Distance learning, during the pandemic, helped, on the one hand, to keep the class and school community and the sense of belonging alive, fighting the risk of isolation and demotivation. On the other hand, it was strategic to avoid interrupting the learning process. Students need to feel they belong to a class community, showing accountability towards their peers and teachers.

"*Connections with the class group without the aim of a specific lesson but a meeting so that the students could share time to see and hear the voices of others, lightness and socialization then gave the impetus and motivation to commitment*."

Students were encouraged to have collaborative learning relationships with other class members. Moreover, teachers encouraged and motivated students to effectively learn and reduce their fear and anxiety through continuous interaction with students by using different channels and the possibility of meetings in extra-curricular time.

> "*Distance learning made us discover that we can meet at any time of the day. We had lessons during the non-curricular time and helped those who had difficulty learning. The contacts were continuous*".

Dialogue and emotional support: students also need emotional support to transmit content and knowledge. Teachers suggested some good practices they adopted to maintain a dialogue with and among students, pay attention to students' moods, and find a moment of socialization to lighten the situation by rediscovering spontaneity in the relationships:

> "*We have inserted time break hours where we can discuss with students for any problems; we often monitored students' behaviour with the families to understand any difficulties and inconveniences*".

Some teachers tried to prioritize students' psychological well-being over the pure didactic lesson. They tried to understand the students' moods and leave time at the end of the lessons for discussion with students at their request.

> "*Before starting the lesson, take a few minutes to listen to the children's voices, their feelings and emotions, involve students and making them feel important, asking them how they are doing, etc*."

The teachers have been able to face online teaching positively and have found strategies and best practices to face it in the best possible way. However, there are still multiple problems and challenges to be faced at the technological, didactic and social levels. Although all teachers know that distance learning has become a complementary part of school life, most respondents (69%) stated that in a non-emergency condition, they would prefer to adopt only a face-to-face approach. They prefer this approach as they believe it is essential for socialization, concentration, and developing a sense of community and belonging. Face-to-face teaching allows for visual contact and facilitates social relationships, human and knowledge exchange with others and interaction with the teacher.

Furthermore, some teachers stated that distance learning is unsuitable for primary school children as they must be face-to-face followed by an adult. Still, not all families have the possibility/capacity to offer an adequate cultural and relational environment. Around 27% of respondents instead would prefer to adopt a blended learning approach. It is considered an extension of the training offer. According to them, a blended approach provides greater flexibility and time optimization. Some teachers think it is necessary to take advantage of the potential of both modalities and to innovate and involve students with the means they know well. A method that could be used during the afternoon hours and also be helpful for recovery in some disciplines and for consolidating the contents. Furthermore, it would also allow for lighter transport and a more informal environment.

Potentialities and benefits of this approach are: flexibility and convenience, interaction and collaboration, individualized learning, place flexibility and cost reduction—all aspects that were also analyzed in the literature [44].

Nearly 23% would prefer to adopt distance learning in an emergency condition and motivated this choice by safety and health issues. More than half of respondents (52%) would prefer to adopt mainly a blended learning approach, and 22% would prefer a face-to-face approach only, mainly to ensure human contact and interaction in presence, assessment, attention and concentration of students.

These results indicate that in Italy, teachers still resist the distance learning approach, and many problems are still open and unsolved.

4.4. Recommended Actions to Improve Distance Learning

According to the teachers, the main problem in the schools is overcoming socio-cultural gaps. The experience with distance learning during the pandemic showed that only the students coming from highly structured contexts and with financial resources (large living spaces, optimal connection and devices, the possibility of feedback at home) have more opportunities to benefit from some remote interventions. On the contrary, students who do not have these possibilities are excluded.

Teachers recommended some actions that should be undertaken as soon as possible by stakeholders (researchers, educational institutions, businesses, policymakers etc.) and government. Table 4 lists all 19 priority actions indicated by respondents that should be implemented to improve distance learning.

Table 4. Priority actions assigned by teachers to improve distance learning (1. no priority–5. highest priority).

Actions	1.	2.	3.	4.	5.	*n*.A.	Schools Also from Rural Areas	Schools from Urban Areas
Network infrastructure	1%	1%	8%	26%	60%	4%	62%	56%
Access to the Internet for all students	1%	3%	11%	27%	53%	5%	55%	51%
Cheaper devices	1%	3%	19%	33%	40%	4%	41%	40%
More incentives by Government to buy devices	2%	5%	20%	32%	36%	5%	39%	33%
Training courses for teachers	2%	6%	24%	34%	30%	4%	33%	34%
New teaching methodologies for students' inclusion	4%	9%	25%	34%	22%	6%	34%	32%
Specific training to students on distance learning	3%	11%	28%	32%	22%	4%	31%	32%
Social interaction and online collaboration	4%	11%	29%	32%	18%	6%	33%	30%
New student assessment methods.	6%	8%	22%	32%	25%	7%	31%	32%
It is necessary to develop more inclusive tools, platforms and devices	3%	6%	22%	32%	30%	7%	32%	32%
More interactive e-learning platforms (videos, animations, quizzes, games, etc.)	6%	11%	25%	31%	22%	5%	30%	31%
More effective educational practices and curricula	8%	13%	27%	28%	19%	5%	31%	24%
Blended learning	10%	12%	25%	27%	20%	6%	28%	24%
Greater involvement of teachers in the production of educational material	4%	13%	34%	27%	16%	6%	33%	34%
Development of co-creation platforms	6%	13%	33%	28%	14%	6%	34%	30%
Use of smart technologies	12%	18%	33%	22%	8%	7%	31%	37%
Improvement of Technologies that use virtual and augmented reality	9%	14%	30%	29%	12%	6%	29%	30%
To provide teachers with structured and planned educational material	4%	10%	29%	28%	23%	6%	28%	31%
Use of TV, radio, tele-courses	9%	16%	25%	22%	22%	6%	25%	24%

Teachers gave three priorities to the actions: medium, high and very high. The four actions that have been given very high priority are related to: 1. Network infrastructure. Internet speed should be upgraded in order to offer good connectivity; 2. Access to

the Internet or other necessary equipment for all students; 3. Cheaper devices (tablets, computers) to allow all families to be able to buy them; 4. Incentives, requested to the government, to be allocated to families in order to buy devices (tablets or computers).

Teachers from schools that host a catchment also from rural areas compared to teachers who do not have students from rural areas gave top priority to these actions.

High priority has been given to actions related to didactic aspects: training courses for teachers (teachers over 60 gave a top priority to this action) and students in order to improve technological and methodological skills. This priority was related to: new models and emerging approaches to distance learning; the creation of new methodologies for teaching and assessment; development of more inclusive tools, platforms and devices considering international guidelines on accessibility in order to make these technologies accessible, aiming to facilitate students with disabilities or special needs (an action is more important for males than for females); interactive platforms for students' engagement and improvement of social interaction and online collaboration between students and between students and teachers (this action is more important for females than for males and for teachers aged under 28); revision of educational practices and curricula; and greater use of blended learning approaches.

Finally, a medium priority was given to: actions related to the improvement of technologies that use virtual and augmented reality by making them more accessible and therefore more engaging and inclusive (males gave a higher priority to this action than females); use of smart technologies such as artificial intelligence to encourage personalized, inclusive and participatory online learning pathways (these two actions are more required by teachers from schools that host a catchment area from urban areas); development of co-creation platforms for students' content creation; involvement of teachers in the production of educational material and necessity to provide teachers with structured and planned educational material with organized and certified content; use of TV, radio, and tele-courses to facilitate access to students living in rural and/or remote areas. This last action is evaluated as the highest priority from teachers aged 50–59 and teaching in the South of Italy and the lowest priority from the youngest teachers under 28.

To ensure inclusive and equitable quality education and learning opportunities for all through distance learning, teachers therefore suggest first of all strengthening the Internet connection throughout the country, supporting families with difficulty by offering suitable devices for all students, reducing the "digital divide" and using easy-to-use and intuitive applications. Furthermore, at the didactic level, it is essential to involve students by stimulating their motivation and social interaction, personalizing teaching as much as possible, and respecting students' timing and learning styles. Moreover, it is necessary to use inclusive software for different disabilities. To do this, it is important to have adequate teacher training on digital tools to carry out distance learning and flexibility in adapting the didactic program to the new possibilities offered by technology. It is also needed to develop more inclusive and interactive tools, platforms, and devices at the technological level.

4.5. Pearson's Correlation between Teachers' Preparation and Knowledge and Suggested Actions

A Pearson's correlation was carried out in order to analyze the relationship among the variables teachers' preparation and knowledge to use distance learning and the priority actions assigned by teachers to improve distance learning (see Table 4). Table 5 shows the Pearson's correlation coefficients that return a picture of the relationships among variables. Limited by the article's length, we describe only data in which there was a correlation with two variables: preparation and knowledge. Results indicate that the level of preparation and knowledge to use distance learning is not highly related to the priority actions suggested by teachers. Still, there is a weak negative correlation among these variables. As illustrated in the previous sections, teachers' preparation is increased during COVID-19. The data indicate that the more preparation teachers have, minor is the request of some actions. For example, the action "to provide training courses for teachers" has a negative correlation with the variable "preparation to use distance learning" before the

COVID-19 (B = −0.12, $p < 0.001$) and during COVID-19 (B = −0.14, $p < 0.001$). The data suggest that the request for priority actions decreases when preparation increases. The same for the action "to provide teachers with structured and planned educational material" that has a negative correlation with the variable "preparation to use distance learning" before the COVID-19 (B = −0.19, $p < 0.001$) and during COVID-19 (B = −0.22, $p < 0.001$). Also, the action "use of TV, radio, tele-courses" has a negative correlation with the variable "preparation to use distance learning" both before the COVID-19 (B = −0.09, $p < 0.001$) and during COVID-19 B = −0.09, $p < 0.001$). It can be assumed that the greater the teachers' preparation, the lower the request for structured and planned educational material and the use of TV, radio, and tele-courses. Obviously, there is a high positive correlation between teachers' preparation and knowledge of apps/tools/platforms (B = 0.55, $p < 0.001$).

Table 5. Pearson's correlation coefficients.

	1	2	3	4	5	6	7	8	9	10	11
1. Preparation to use distance learning before the COVID-19	1										
2. Preparation to use distance learning during the COVID-19	0.435 **	1									
3. Knowledge of apps/tools/platforms	0.548 **	0.274 **	1								
4. Use of TV, radio, tele-courses	−0.086 **	−0.095 **	−0.026	1							
5. Training courses for teachers	−0.121 **	−0.138 **	−0.016	0.337 **	1						
6. Specific training to students on distance learning	−0.06	−0.150 **	−0.034	0.350 **	0.583 **	1					
7. To provide teachers with structured and planned educational material	−0.194 **	−0.223 **	−0.063	0.352 **	0.473 **	0.451 **	1				
8. Greater teachers' involvement in the production of educational material	−0.054	−0.117 **	0.034	0.359 **	0.432 **	0.445 **	0.636 **	1			
9. Social interaction and online collaboration	0.034	−0.04	0.071 *	0.351 **	0.347 **	0.377 **	0.341 **	0.418 **	1		
10. Improvement of technologies that use virtual and augmented reality	0.045	−0.01	0.078 *	0.369 **	0.343 **	0.304 **	0.351 **	0.406 **	0.491 **	1	
11. Use of smart technologies	0.051	0.018	0.133 **	0.370 **	0.315 **	0.268 **	0.341 **	0.401 **	0.444 **	0.706 **	1

* Significant Correlation at the 0.05 level (two-tailed). ** Significant Correlation at the 0.01 level (two-tailed).

Referring to teachers' knowledge of apps, tools and platforms for distance learning, data show a weak correlation with: (i) the request for tools that increase social interaction and online collaboration between students and between students and teachers (B = 0.07, $p < 0.005$); (ii) the improvement of technologies that use virtual and augmented reality (B = 0.08, $p < 0.005$); (iii) the use of smart technologies such as artificial intelligence to encourage personalized, inclusive and participatory online learning pathways (B = 0.13, $p < 0.001$). These findings suggest that increasing knowledge of distance learning tools also increases the request for more specific tools.

5. Discussion

This study allows us to identify some lessons learned by teachers from distance learning experiences during the COVID-19 pandemic in Italy. Although teachers were resilient and proactive and found strategies and good practices to deal with distance learning in the best possible way, several open technological and pedagogical challenges persist and need to be faced.

A comparison was made between schools that have a catchment area also coming from rural areas and schools that collect only an urban basin. The technological challenges were mainly related to Internet connection problems in all considered areas, especially in schools that have a catchment area also coming from rural areas. The lack of adequate devices for many students (e.g., the use of smartphones instead of a personal computer), the limited availability of hardware devices due to the need to share them with other family members, and the difficulty in using the platforms for distance learning are problems mainly reported in the schools that host an urban catchment area.

The main didactic challenges were associated with the difficulty in students' involvement and evaluation, and inadequate interactions between teachers and students and among students. Moreover, a further challenge referred to a not suitable home environment for distance learning (experienced more by students in the schools with students from urban areas) and the lack of support from parents or family members. In some cases, distance learning increased inequalities, in particular among foreign students and economically and culturally disadvantaged families. This aspect is confirmed by other studies in the literature [5,8,9]. Different interventions have been taken from several schools to encourage the involvement and inclusion of students with limited access to technologies or poor digital skills. Among the others: supply of Internet connection, devices on loan and technical assistance.

Furthermore, different strategies and best practices for students' involvement have been used, such as: Respect for netiquette: punctuality in the connection, webcam turned on, appropriate clothing, correct and relevant language, evaluations test for each topic, and systematic control of homework. Digital inclusion: use of asynchronous methods, such as recorded simplified video lessons and video tutorials available for visualization by absent students, personalized exercises and tasks, and use of non-formal tools like SMS, phone calls and WhatsApp. Active teaching and learning: promotion of interactive activities by using multimedia resources to keep students' attention and stimulate learning. The use of different methods such as flipped classrooms, learning by doing, breakout rooms, role-playing games, interactive videos, multimedia channels etc. Cooperative learning: limitation of frontal explanations and use of platforms that allowed collaborative work among students through the activation of several virtual rooms simultaneously with the coordination of the teacher. Sense of belonging: reinforcement of the sense of classroom community and belonging, continuous interaction with students by using different channels and the possibility of meetings in extra-curricular time, fighting the risk of isolation and demotivation. Dialogue and emotional support: maintenance of a dialogue with and among students, paying attention to students' moods, and finding a moment of socialization at the beginning or the end of the lessons.

Although the teachers have been able to confront online teaching positively and have found strategies and good practices to face it in the best possible way, in Italy, as many challenges are still open and unsolved, there still is a significant resistance of teachers towards the distance learning approach. Starting from these challenges, teachers prioritized some recommended actions to stakeholders and policymakers in order to ensure inclusive and equitable quality education. Top priority has been given to reliable network infrastructure, access to the Internet and availability of devices for students. These actions have been indicated mainly by teachers from schools that host a catchment area also from rural areas. High priority has been given to actions related to didactical aspects: training courses for teachers and students; new methods for student assessment; more inclusive and interactive tools; platforms and devices; the development of interactive platforms for students' engagement and the improvement of social interaction and online collaboration between students and between students and teachers. High priority has been given, even if in a smaller percentage, to actions related to revising educational practices and curricula and greater use of blended learning.

6. Conclusions

The epidemiological emergency has strongly brought out the digitization in Italy with distance learning and smart working. The digital agenda for the country's development was crucial before the COVID-19 emergency. Currently, it has become a challenge that the National Recovery and Resilience Plan is addressing as a priority. The need for a more modern school using any positive potential of digitalization is a challenge that can no be longer ignored. The European Commission's DESI 2020 (Digital Economy and Society Index) report shows that Italy is 17th for internet connectivity, last for its citizens' digital skills and 26th for internet use (https://innogrowth.org/wp-content/uploads/2020/07/

DESI-2020.pdf, accessed on 20 May 2022). Furthermore, this emergency exasperated some traditional problems of the Italian school.

The study highlighted a high positive correlation between teachers' preparation and knowledge of apps/tools. Moreover, findings coming from correlations suggest that increasing knowledge of distance learning tools also increases the request for more specific and innovative tools.

Answering the question "which the school you would like in the future," teachers reported the need for an innovative, less bureaucratic school more open to technologies, based on good educational practices that allow students to be the protagonists of personal learning processes. Many teachers would like a school of the future that offers equal opportunities to all, i.e., a school that provides useful lessons and solid training by using digital technologies but also guarantees face-to-face learning and the relational aspects fundamental for living in society. According to teachers, it is no longer time for transmissive teaching centered solely on listening. It is necessary to implement a didactic approach that overcomes the monolithic character of the classroom, to activate laboratory didactic actions for groups in classrooms. A result to achieve by using the opportunities offered by technologies in terms of organizational flexibility that favors teaching times and disciplinarily integrated methods.

Some teachers propose using distance learning as a didactic strategy within the face-to-face lessons, not as an alternative, making it structural and complementary to teaching in the presence of students. Distance learning should go forward with an integrated digital didactic approach, i.e., teaching that always evolves throughout the school activities and not only during emergencies. In the future, the most significant opportunities for distance learning, according to teachers, could be represented by the possibility of involving students who cannot go to school for health reasons or with specific difficulties or handicaps; to reach all students, even those who live in more disadvantaged areas and have to travel by public transport for long distances. It will enable the optimization of time and costs, also reducing problems related to traffic and pollution. Furthermore, it could be used to customize and adapt courses to the students' needs using some applications that allow integrating content and methods more suitable for each student. For example, the possibility of diversifying and personalizing the courses without being conditioned by the spaces of a traditional classroom; facilitated access to materials prepared by the teacher; and personalized didactic paths with consequently more inclusive teaching. Another potential advantage of distance learning is the opportunity to use it in any place and to complement and empower lessons, to follow students remotely after the hours at school (extra-curricular).

According to some teachers, blended learning is the best approach to continue to use digital tools in the logic of integrated teaching, paving the way for alternative methodologies in the future.

This study gives a framework of the present Italian school situation. It aims to contribute to a better understanding of the challenges of distance learning that emerged during this period.

Although this study involved a large number of teachers from Italian schools, it does not presume to be exhaustive. Thus, the sample is diversified (selected among the main regions of North, Centre and South of Italy both in urban and rural areas). It is not fully statistically representative. Future research should involve more teachers in more diversified geographical areas and use representative samples. Furthermore, further research should analyze distance learning during other kinds of crises and emergencies, such as the challenges of providing education services for refugee students, including language barriers, psycho-social, cultural and political issues. It should also be interesting to analyze students' perspectives, experiences, attitudes, and feelings and compare them across different countries to provide a more comprehensive view of the phenomenon and attain more detailed results.

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