Research Article https://doi.org/10.12973/eu-jer.11.2.1103

European Journal of Educational Research
Volume 11, Issue 2, 1103 - 1114.
ISSN: 2165-8714
http://www.eu-jer.com/

What Teachers Tell Us About the Impact of the COVID-19 Pandemic on Public Education in Italy

Gisella Decarli
University of Trento, ITALY / Université de Paris, FRANCE

Luca Surian
University of Trento, ITALY

Michela Vignoli
University of Trento, ITALY

Laura Franchin*
University of Trento, ITALY

Received: December 8, 2021 ▪ Revised: February 14, 2022 ▪ Accepted: March 4, 2022

Abstract: The Coronavirus disease (COVID-19) state of emergency has brought about a radical change in the way of teaching. In a questionnaire, we asked 120 teachers from Italian Primary, Middle and High Schools about the advantages and disadvantages of online teaching, the students' conduct during lessons and the methodologies applied to students with special educational needs. Primary School teachers most strongly reported an increase in boredom and distraction, and disagreed that online teaching helps students' learning and that it makes them more active. The main advantage of online teaching was the technical and methodological innovations, while the main disadvantage was the lack of relationship with students. In the case of students with special educational needs, many teachers reported that they used simplified procedures and personalized meetings. Overall, teachers appear to think that online teaching has many drawbacks, though it also has some positive aspects that need to be appreciated and exploited.

Keywords: *COVID-19, online teaching, students with special needs, teaching practice.*

To cite this article: Decarli, G., Surian, L., Vignoli, M., & Franchin, L. (2022). What teachers tell us about the impact of the COVID-19 pandemic on public education in Italy. *European Journal of Educational Research*, *11*(2), 1103-1114. https://doi.org/10.12973/eu-jer.11.2.1103

Introduction

The year 2020 was marked by the outbreak of SARS-CoV-2 (also known as COVID-19). The COVID-19 pandemic has led to great changes in all aspects of our lives (Huang et al., 2020; Zhang & Ma, 2020). This unknown virus has brought with it all around the world negative feelings and emotions (e.g., stress, anxiety, depression, for a meta-analysis see Salari et al., 2020), as well as health, work, economic problems and so on. Among the many different fields that have been strongly affected by COVID-19, education was one of the most hit because it has seen the closure of the places where it practices (schools and universities) and has undergone a substantial change in the way to teach lessons. Students had to readjust to the new measures taken by the schools, and teachers had to seek and, in some cases, invent new ways to be able to effectively pass on knowledge. A new scenario has therefore opened up to everyone: online teaching. This was not an absolute novelty, as in some circumstances remote teaching had already been used, but with COVID-19 there was a radical and fast transition to this kind of teaching. Therefore, it becomes essential to propose studies in this field in order to identify the strengths and weaknesses of this available tool.

Literature Review

The pandemic has brought high levels of incertitude and confusion for the scholastic system (Huber & Helm, 2020; Judd et al., 2020; Zhang et al., 2020). Schools had to face an emergency situation never experienced before and some of them implemented good strategies (Basilaia & Kvavadze, 2020) while others did not adopt specific pedagogical strategies (Bergdahl & Nouri, 2020; Zhang et al., 2020). The lack of schools' preparedness, the fast adaptation to a new situation and the difficulties in preparing new online materials have led teachers to experience high levels of psychological distress and low motivation (Akour et al., 2020). In a recent study more than 600 language teachers responded to an online survey; the authors found that the two most stressful factors indicated by the participants during the COVID-19 pandemic were workload and family health (MacIntyre et al., 2020). These results highlight the difficulties produced by this critical situation, where the massive introduction of remote teaching and the concern for family's health have led teachers to experience high levels of stress.

* **Corresponding author:**
Laura Franchin, Department of Psychology and Cognitive Science, University of Trento, Trento, Italy. ✉ laura.franchin@unitn.it

Moreover, the pandemic has brought on problems not only for teachers but also for students, and in particular for those who normally do not have simple access to learning. In particular, COVID-19 and online teaching have increased the barriers for learning for children and adolescents with socio-economic difficulties (Armitage & Nellums, 2020; Van Lancker & Parolin, 2020). The critical situation can also be expanded to students with disabilities or with special educational needs. For example, some authors highlighted the fact that there was a lack in counseling meetings or resources on accessibility pages in most institutions in the New York City metropolitan, thus increasing the gap between students with and without disabilities (Meleo-Erwin et al., 2020). Moreover, children with learning disabilities need an adaptation of the scholastic subjects with specific and personal support. With the arrival of the pandemic they should have a simple and rapid access to learning resources otherwise the risk of discrimination increases more and more (United Nations International Children's Emergency Fund [UNICEF], 2020; see also Poletti, 2020). We think that it becomes urgent to propose and promote studies that can increase our knowledge in this field (Patel, 2020; Poletti, 2020).

The Present Study

Here, we present a study that aims at investigating teachers' points of view on their experience with online teaching during COVID-19 and with particular attention to the strategies implemented for students with special educational needs. In particular, we administered an online questionnaire to teachers of Primary, Middle and High Schools throughout Italy to explore the impact of online teaching. The questionnaire was composed of open-ended, multiple choice and Likert-scale questions about the advantages and disadvantages of online teaching, about students' behaviors during online lessons and the methodologies applied to students with special educational needs. The main research aims were firstly to assess the teachers' experiences of online teaching and secondly to identify some strategies that have been successfully implemented with students with special educational needs.

Methodology

In order to investigate the teachers' beliefs about online teaching and practices we conducted a multi-method study which enables us to use, collect and analyze both quantitative and qualitative data. The study was conducted in Italy during the June-July 2020 period, just after the closure of schools. For the data collection, the regional presidents of "Associazione Docenti e Dirigenti Scolastici Italiani" were contacted. They dealt with sharing the study in the schools of their region. Teachers were invited to participate in the research via email. The invitation provided information about volunteering to take part in the study and the anonymous treatment of data in accordance with the privacy law in force. Moreover, teachers were informed that the aim of the study was to investigate their perceptions of online teaching and practices.

Participants

Teachers working in forty-five schools from different regions of Italy participated in the study (14 from North Italy, 10 from Central Italy, and 21 from South Italy). A total of 120 teachers completed the questionnaire. All participants (105 females, 15 males) were aged between 25 and 66 years (M = 49.6 years, SD = 9.5). The sample was characterized by 59 teachers (49.17%) from Primary schools, 38 teachers (31.67%) from Middle schools and 23 teachers (19.16%) from High schools. The levels of education of participants varied across participants: 76 (63.33%) had a master's degree, 22 (18.34%) a high school diploma, 11 (9.17%) a bachelor's degree, 7 participants (5.83%) a Ph.D. diploma, while 4 participants (3.33%) had a Middle school diploma. The mean years of teaching was 20.65 (range: 1-42 years) with a mean of 16.88 hours of teaching per week (range: 2-25 hours). The subjects of teaching differed across participants, 62 people (51.67%) teach humanistic subjects, 32 (26.67%) scientific subjects, 16 (13.33%) are support teachers for students with special needs and 10 people (8.33%) teach foreign languages.

Instrument

In order to investigate teachers' perception of online teaching, we developed a questionnaire consisting of open-ended questions, multiple choice questions and Likert scale questions from 1 to 10. The questionnaire was modeled on different studies investigating the impact of COVID-19 on education systems (e.g., Bergdahl & Nouri, 2020; Huber & Helm, 2020; König et al., 2020) and we adapted the questions provided by previous surveys on the Italian education system. The completion of the questionnaire lasted between 10-20 minutes (the complete questionnaire is reported in Appendix A). The questionnaire was composed by 3 sections: a) general information; b) online teaching–general; c) online teaching–students with special educational needs (only for teachers with at least one student with special needs).

General information. The first section of the questionnaire was to provide some general information such as age, sex, educational level, the school's region, school type, years of teaching experience, subject of teaching and hours of teaching per week (3 open-ended questions and 5 multiple choice questions).

Online teaching–general. The second section of the questionnaire investigated the advantages and disadvantages of online teaching and the effects of this type of teaching on students' behavior. There were 2 open-ended questions and 6 items with Likert scale 1 = totally disagree/awful/totally unsatisfied, 10 = totally agree/excellent/totally satisfied. For example, we presented items like the following: "*With online teaching, students are more bored than with traditional teaching*" or "*With online teaching, students get more distracted than with traditional teaching*".

Online teaching–students with special educational needs. The last section was addressed to teachers who had one or more students with difficulties/disorders (i.e., specific learning disorders, language disorders, attention deficit/hyperactivity disorder, motor disorders, intellectual disabilities or socio-cultural disadvantages). This section was aimed to determine how online teaching had been adapted to facilitate learning to meet the specific needs of these children. In this section there were 2 multiple choice questions and 3 open-ended questions. For example, we asked: "*What issues have emerged from the introduction of online teaching for students with special educational needs?*" or "*With online teaching, what methodologies have been introduced to facilitate students with special educational needs?*".

Data analyses

Concerning the quantitative analysis, correlations and ANOVAs have been performed using the R software (R Core Team, 2019). Regarding the qualitative analysis, open-ended questions have been analyzed through a 4-phase procedure. In the first phase, two researchers read all the answers and developed a set of nodes based on the questions proposed and the relevant literature. Second, the nodes proposed were discussed among the authors of the papers and a final version of the nodes were defined. Third, two researchers independently coded all the answers. Lastly, once all data was coded by each independent researcher, coding rates were compared for interrater agreement. The team discussed all discrepancies, and final coding decisions were made which resulted in ultimately reaching 100% agreement.

Results

Quantitative results

We first analyzed the quantitative data that we obtained from the questionnaire. In particular, we performed statistical analysis on the following concepts[†]: digital competence, online teaching's efficiency, students' activity, students' boredom, students' distraction, teachers' overall satisfaction.

In the general information section, we asked teachers to indicate their degree of digital skills. Overall, participants reported to be quite competent in the technology field (M = 7.25, SD = 1.67) and we found that this competence changed as a function of age, $F(1, 117) = 11.47$, $p < .001$. Younger teachers possess a higher digital skill than the older ones. In the second section, we asked teachers to report their perceptions of the consequences of online teaching on students' behaviors. All questions required answering on a Likert scale between 0 and 10 (0 = totally disagree, 10 = totally agree). Teachers tended to disagree that online teaching helps students to learn more efficiently (M = 4.41, SD = 2.42) and that students are more active (M = 4.63, SD = 2.6), while they tended to report that students are more bored (M = 6.02, SD = 2.59) and more distracted (M = 6.28, SD = 2.56). In particular, Primary School teachers selected scores of disagreement compared to Middle and High School teachers when we asked them to indicate whether online teaching helps students to learn concepts more efficiently (Primary School teachers: M = 3.68, SD = 2.16; Middle School teachers: M = 4.68, SD = 2.28; High School teachers: M = 5.83, SD = 2.64; $F(2, 117) = 7.64$, $p < .001$, $\eta^2 = 0.12$; see Fig. 1) and whether students are more active with online teaching than with traditional one (Primary School teachers: M = 3.74, SD = 2.22; Middle School teachers: M = 5.1, SD = 2.63; High School teachers: M = 6.13, SD = 2.7; $F(2, 117) = 8.88$, $p < .001$, $\eta^2 = 0.13$).

[†] Considering that the data did not follow a normal distribution, we also computed a log-transformation on the data. Performing the same analyses (i.e., ANOVAs and correlations), we obtained a similar pattern of results.

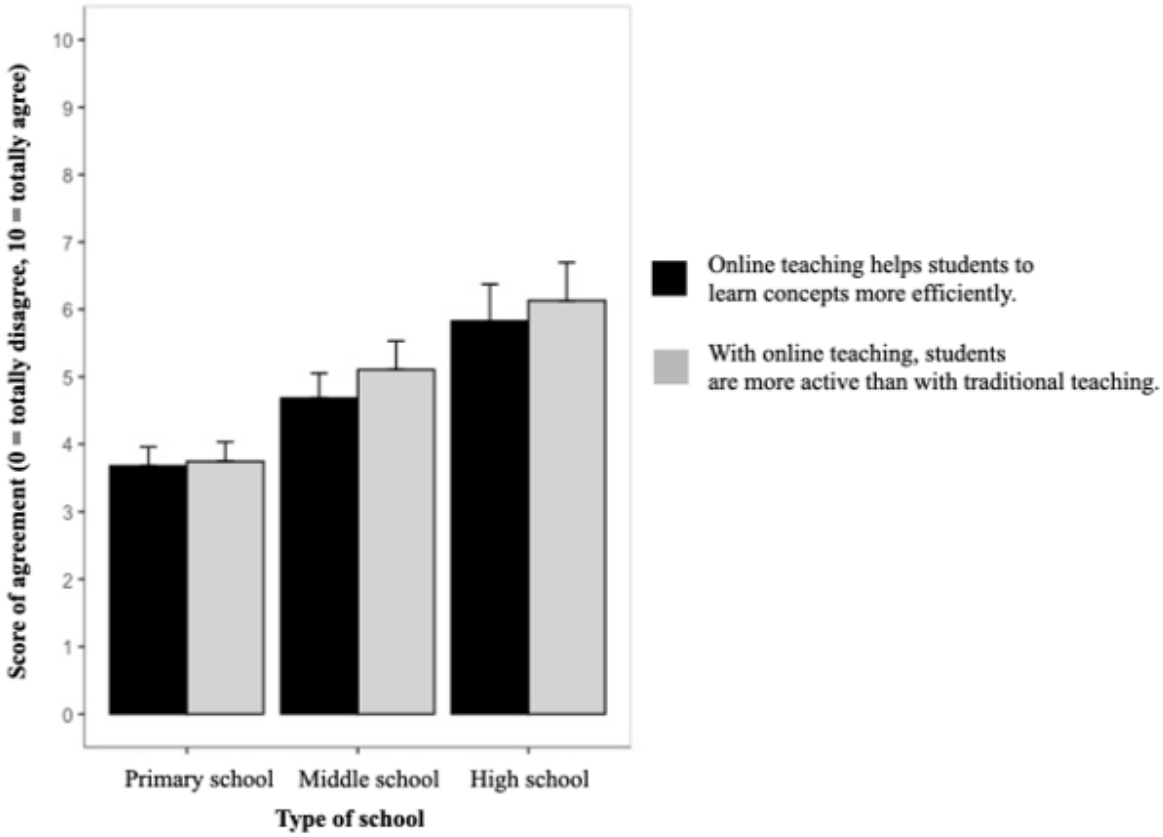

Figure 1. Mean scores of teachers' agreement for the efficiency of online teaching (black) and for the students' activity during online lessons (gray). Error bars represent the standard error from the mean.

Primary School teachers chose scores of agreement with the statement that students are more bored with online teaching than with traditional teaching, compared to Middle and High School teachers (Primary School teachers: M = 6.71, SD = 2.57; Middle School teachers: M = 5.53, SD = 2.64; High School teachers: M = 5.09, SD = 2.15; $F(2, 117) = 4.54$, $p = .01$, $\eta^2 = .07$; see Figure 2). No significant differences between teachers of different grades emerged in the scores on the claim that with online teaching students are more distracted than with the traditional one (Primary School teachers: M = 6.71, SD = 2.59; Middle School teachers: M = 5.89, SD = 2.65; High School teachers: M = 5.82, SD = 2.27; $F(2, 117) = 1.64$, $p = .2$, $\eta^2 = .03$).

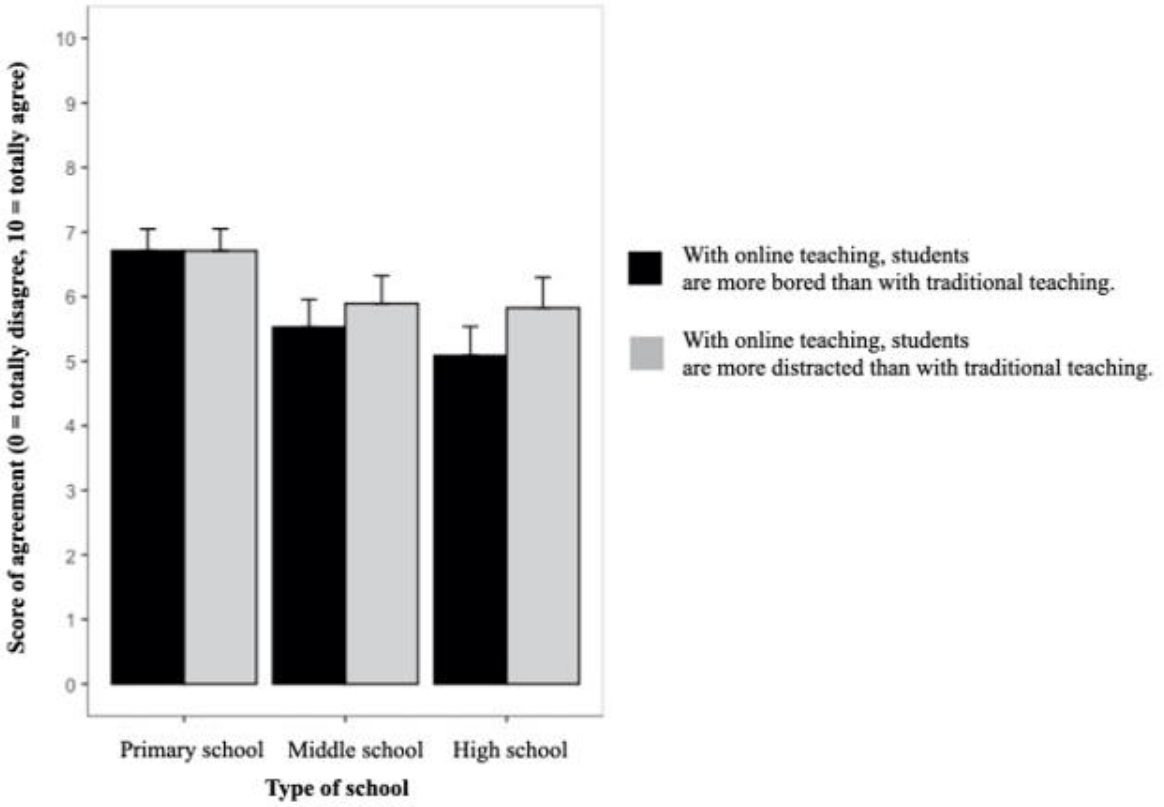

Figure 2. Mean scores of teachers' agreement for the students' boredom (black) and distraction (gray) during online lessons. Error bars represent the standard error from the mean.

Moreover, we analyzed their general satisfaction for online teaching (0 = not satisfied at all, 10 = completely satisfied). Overall, teachers reported an average level of satisfaction (M = 5.31, SD = 2.33). Teachers with higher qualifications (i.e., Ph.D. degree) were more satisfied by online teaching (M = 6.43, SD = 2.33) compared to teachers with lower qualifications (e.g., Middle School diploma: M = 5.25, SD = 3.3; High School diploma: M = 4.54, SD = 2.2; $F(1,118) = 4.86$, $p = .03$, $\eta^2 = .04$).

Finally, we performed correlational analyses including age, type of school (Primary, Middle or High School), years of teaching, mean hours of teaching per week, perception of digital competence, agreement/disagreement on the online teaching efficacy, agreement/disagreement with the statement that with online teaching students are more active, more bored or more distracted, and the overall satisfaction with online teaching (see Fig. 3). In particular, the more teachers perceive that their students are active, less bored and less distracted, the more they are satisfied with online teaching (r = .73, p < .001; r = - .52, p < .001; r = - .55, p < .001, respectively). In addition, the digital competence significantly and positively correlates with the belief that online teaching is efficient (r = .24, p = .006) and satisfying (r = .37, p < .001).

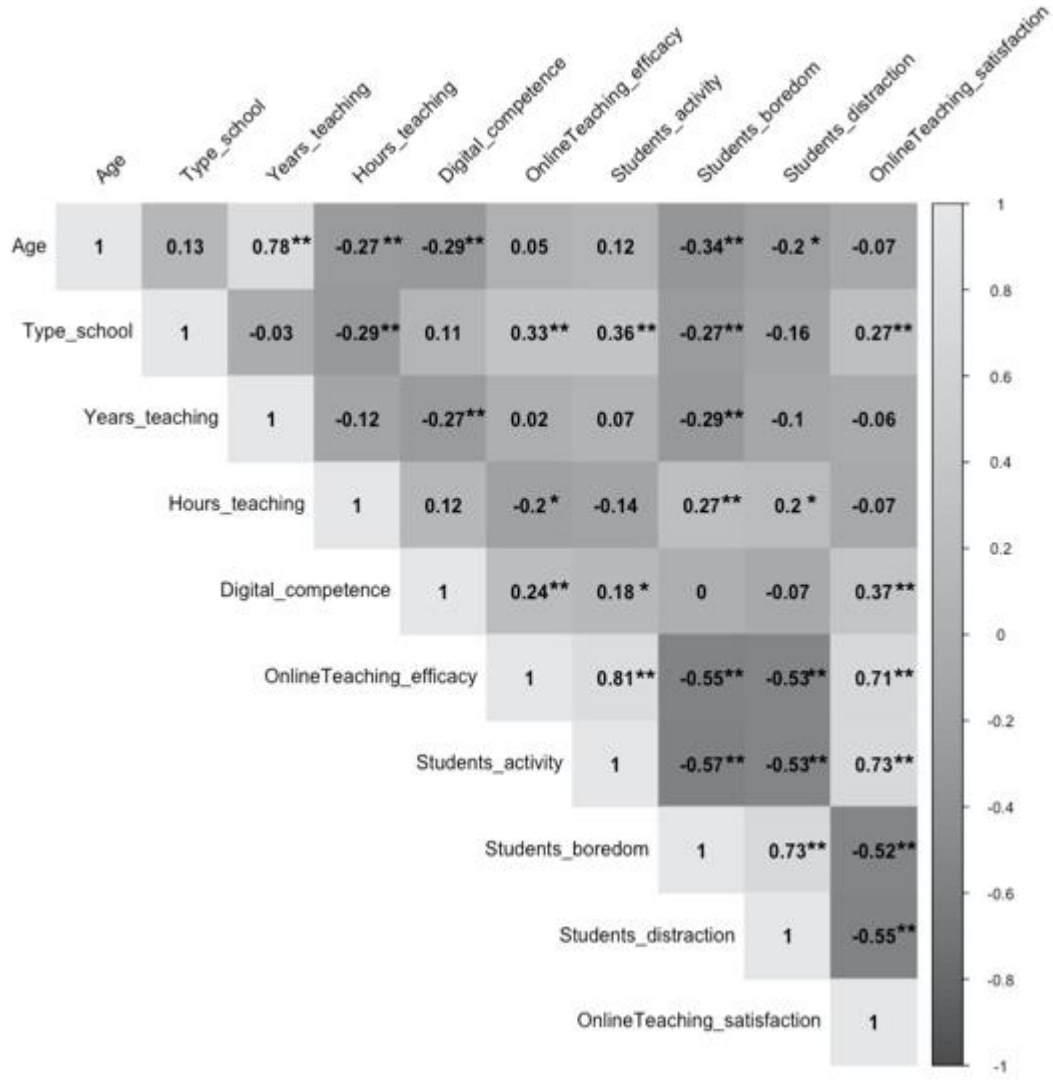

*Figure 3. Matrix of correlations for the quantitative items of the questionnaire. In the squares there are the coefficient of Pearson correlations and the color represents the gradient of positivity/negativity correlation (light grey = positive correlation; dark grey = negative correlation). * indicates p < .05. ** indicates p < .01.*

Qualitative results

We also performed qualitative analyses for the open-ended questions. This part of the questionnaire was completed only by teachers who had at least one student with special educational needs. Table 1 reports the data of the frequencies for each node in each question.

Table 1. Qualitative results with the questions of the questionnaire, the nodes identified, the number and percentage of participants that reported a specific node.

Question	**Node**	***n***	**%**
Main advantages of online teaching	Maintain the contact	34	28.3
	Instrumental/technical	33	27.5
	Innovative drive	39	32.5
	No advantages	14	11.7
Main disadvantages of online teaching	Contact/relationship	64	53.3
	Instrumental/technical	29	24.2
	Teachers' effort, problems	13	10.8
	Only disadvantages	3	2.5
	Inclusivity	11	9.2

Table 1. Continued

Question	Node	*n*	%
Strategies for enhancement	Student driven	32	26.7
	Teacher driven	76	63.3
	No one	12	10
Adaptation for students with special needs	Simplification	23	25.8
	Individualized/personalized	10	11.2
	Other adaptation	43	48.3
	No adaptation	13	14.6
Problems for students with special needs	No one	15	16.9
	Lower engagement	42	47.2
	Instrumental/technical	15	16.9
	Increased fatigue	13	14.6
	Good surprises	4	4.5
Methodologies for students with special needs	The same/no one	6	7.5
	Other methodologies	39	48.8
	More time/simplified tasks	13	16.3
	Individualized meetings/tools	22	27.5

Concerning the first question *"What are the main advantages of online teaching?"* the majority of the teachers (32.5%) highlighted as advantages the innovations that online teaching provided both from a technical and methodological point of view. A teacher reported as a main advantage of online teaching the "Learning in the use of IT teaching methodologies and tools" [45] and concerning the methodologies used in class such as "Experimenting new technologies in the field of education" [56], "Better teaching customization". Moreover, 28.3% of the participants reported that online teaching allows them to maintain contact and relationship with the students. For example, teachers reported "maintain a relationship with the students" [75], or "The possibility of connecting with distant students" [7], or "Emotional continuity" [68]. Similarly, 27.5% focused on the technical aspects as online teaching advantages, such as "Each child can use the materials according to their own timing and order of preference" [28], or "Agile sharing of multimedia teaching materials and more immediate feedback" [6]. A smaller percentage of the sample (11.7%) declared they found no advantages of online teaching "No tangible benefit, since there was no possibility of a face-to-face lesson" [97].

The second question "*What are the main disadvantages of online teaching?"* reported similar results. Most of the teachers (53.3%) reported that one of the main disadvantages was the lack of contact with the students. For example, one teacher reported that "Teaching through technology cancels the dimension of teacher-student interaction. As contact with the teacher is crucial for the growth and learning of a child, the use of media is very complex and could be little functional if not well used" [72]. A smaller percentage of respondents (24.2%) focused on the technical aspects as a disadvantage such as "difficulties during video conferences due to overload of connections" [89]. Some teachers also highlight the disadvantages related to the lack of inclusivity "Widening the gap between those who are followed by the family and those who are not […]" [52].

Moreover, teachers were asked about the strategies they adopted to enhance online teaching. Results clearly showed three different strategy categories. The majority of the teachers (63.3%) adapted the classes using digital technology as videos, live classes or recorded ones. A teacher for example reported "preparation of pre-recorded videos, explanations and discussions in synchronic mode, assignment of personalized tasks in diachronic mode" [3]. Some of the respondents (26.7%) chose strategies to enhance the online teaching to give more power to the students by using methodologies less "teacher-driven" and more "student driven". One example is the flipped classroom "use of gamification platforms, original works such as stories and poems produced by students; creation of a class site with content completely created by the students" [63]. A small percentage (10%) declared that they did not adopt new strategies to enhance online teaching.

The last section was dedicated to better understand the online teaching methodologies used with students with special needs. The first question asked teachers "*How was online teaching adapted for students with special educational needs".* 25.8% reported methodologies aimed to simplify the tasks "materials have been simplified and reduced" [15], while others (11.2%) used individualized strategies "by participating in some *private* classes with the students, the educator or the support teachers for students with special needs" [55]. Many teachers (48.3%) adopted other strategies "conceptual maps and model making" [1], "use of videos via Whatsapp and Google Classroom" [3]. Moreover, 14.6% declared that no adaptations were made.

We also asked teachers "*What issues have emerged from the introduction of online teaching for students with special educational needs?"*. 47.2% reported lower engagement of the students "less involvement and short-term attention" [71] and "difficult emotions management, greater difficulties in attention, shorter concentration times" [100]. Some

teachers (16.9 %) mainly focused on the technical aspects and lack of mastery in the use of PCs and tablets" [82], while others focused on the increased fatigue for the students "they had even more trouble following the activities" [77]. A small percentage of respondents (16.9%) reported that no problems arose. A very small number of teachers (4; 4.5%) asked about the problems for students with special needs reported unexpected good outcomes "Some were surprised by their unexplored abilities" [5].

The last open-ended question asked the teachers "*With online teaching, what methodologies have been introduced to facilitate students with special educational needs?"*. The methodology most frequently reported was the individualized meetings and tools (27.5%) "personalized tasks, direct communication with the family" [78], while 16.3% explicitly reported to have used as a methodology the simplification or the increase of time to complete the tasks "facilitated videos and exams" [73]. The majority of the teachers (48.8%) reported other methodologies "increased use of interactive educational sites and games and recreational/educational platforms" [82]. A small percentage of teachers (7.5%) reported that no new methodologies had been introduced.

Discussion

The aim of the present study was to assess teachers' beliefs and suggestions on online teaching and the strategies applied to students with special needs. First, our results indicated that teachers perceive themselves to be quite competent in the relevant field of digital tools and younger teachers perceive themselves to be more competent than the older ones. At the Likert-scaled questions about students' behavior during lessons, participants tend to disagree with the claim that remote teaching helps students to learn more efficiently and that students are more active. On the contrary, they tend to agree with the statement that students are more bored and more distracted. Primary school teachers present more extreme scores than teachers of Middle and High schools. One interpretation of the following results could be that Primary school children need to be more guided and supported by teachers. Indeed, they are not completely autonomous in their activities and this represents a problem with the pandemic situation, where teachers cannot directly follow what their students are doing. Moreover, some children do not possess a high level of digital competence making the learning process even more complicated.

In addition, our investigation indicates that participants are on average satisfied by this kind of teaching. Teachers that possess higher qualifications are more satisfied than teachers with lower qualifications. In the correlational analysis, the level of satisfaction increases when the perception is that students are active, not bored and not distracted. Finally, we find a positive correlation between the digital competence and the belief of the teaching online efficiency and with the satisfaction for it. This result is in line with previous findings (see e.g., König et al., 2020; van der Spoel et al., 2020). These authors assessed early career teachers with multiple instruments aiming to understand how they mastered the emergency situation and the factors that allowed them to succeed. Results indicated that teachers' digital competence was a significant predictor of the maintenance of social contact and of the tasks' differentiation. More generally, we can hypothesize that teachers who have a better knowledge of digital tools and environments are able to propose more sophisticated and innovative methodologies to their students, facilitating online learning.

In addition to the quantitative data we also analyzed the open-ended questions. The main advantage of online teaching highlighted by the participants is the innovations from a technical (e.g., videos made by teachers) and methodological (e.g., flipped classroom) point of view. On the other hand, the main disadvantage is the lack of contact and relationship with students (see also Carrillo & Flores, 2020). In line with this view, it is difficult to recreate the relationships formed between school desks in a virtual environment. Moreover, the interaction between student-teacher becomes more complicated and problematic with the barrier of the screen (see also Sepulveda-Escobar & Morrison, 2020). Another open-ended question asked teachers to describe the strategies adopted to enhance online teaching. The majority of the teachers report to have adapted the classes using digital technology as videos, live classes or recorded ones.

Finally, we focused our attention on the modalities adopted with students with special educational needs. To the question "*How was online teaching adapted for students with special educational needs?*", many participants responded that they simplified the materials proposed to students, while others used individualized strategies to help children who struggle with learning. The major problem that emerged with the introduction of online teaching is the students' lower engagement, indicating that they observed less involvement and greater difficulties in attention. However, some teachers also reported good outcomes from their students. Indeed, some students were able to bring out unexplored capacities. Finally, the methodologies mostly used across participants were individualized meetings/tools and the simplification/increase of time to complete the tasks (see also Ní Bhroin & King, 2020). We believe that it is necessary to work more on ad hoc online methodologies (other than individualized meetings or task simplification) when helping students with special educational needs.

Conclusion

In conclusion, we can say that the pandemic has put schools in a situation of crisis, which after the first lockdown when everything was at a standstill, schools have tried to react and face this challenge never known before. The new online teaching has certainly required great cognitive efforts from the teachers, and has been characterized by flexibility and adaptability. The activation of online teaching has had some disadvantages but also some very important advantages.

New approaches to learning, new ideas, new skills acquired by everyone, teachers and students, have ensured that the system did not stop but continued.

We believe that everything positive that has emerged during this moment of crisis should remain active both in the present where in fact we can still see realities ('blended') that mix face-to-face and online teaching, and for the future to give new ideas for improvement to schools. Hopefully, also the negative aspects and the difficulties that have emerged in this situation can be used as useful feedback, allowing our schools to become an increasingly advanced system, more and more ready to face moments of crisis and react with efficiency and flexibility.

Recommendation

We recommend to continue to implement the new approaches to learning experimented in this period, and to favor the generation of new ideas from both teachers and students. Technology can be a useful tool to integrate material in classical teaching. Finally, we recommended constructively exploiting the new skills acquired by everyone, rethinking in parallel both the way of teaching and the way of learning, and promoting creativity and mental and emotional well-being of all. Regarding children with special needs we recommend adopting two main strategies: simplification and individualization. With future research, deeper analysis of different online and face-to-face teaching methods, as well as proposing changes that facilitate more efficiently students with special educational needs are continuing research directions from this study.

Limitations

Aside from the interesting insights of this study, there are some limitations to consider.

Firstly, this research was conducted on teachers selected from different schools in Italy. It included only a relatively small sample of teachers for Primary, Middle and High schools respectively. In addition, the subjects of teaching differed across participants and only 13.3% of the sample were support teachers for students with special needs. Therefore, generalization of the results obtained in this study may be subject to considerable limitations.

Finally, the questionnaire was done by a group of researchers who might not have given the real information about the complexity of questions proposed.

Acknowledgments

We thank all the teachers who participated in our study, the “Associazione Docenti e Dirigenti scolastici italiani (ADI)” for supporting us and Beatrice Bozzetto for her help in data collection.

Compliance with Ethical Standards

The authors obtained the exemption by the Ethical Committee of the University of Trento because the investigation was completely anonymous, the sample includes an adult population, and the questions did not investigate sensitive topics. The experimental procedure was in accordance with the ethical standards of the Ethical Committee of the University of Trento and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Conflicts of Interest

The authors declare they have no conflict of interest.

Authorship Contribution Statement

Decarli: Conceptualization, design, analysis, writing. Surian: Reviewing, supervision. Vignoli: Analysis, writing. Franchin: Conceptualization, design, reviewing, supervision.

References

Akour, A., Al-Tammemi, A. B., Barakat, M., Kanj, R., Fakhouri, H. N., Malkawi, A., & Musleh, G. (2020). The impact of the COVID-19 pandemic and emergency distance teaching on the psychological status of university teachers: A cross-sectional study in Jordan. *The American Journal of Tropical Medicine and Hygiene*, *103*(6), 2391–2399. https://doi.org/10.4269/ajtmh.20-0877

Armitage, R., & Nellums, L. B. (2020). Considering inequalities in the school closure response to COVID-19. *The Lancet Global Health*, *8*(5), e644. https://doi.org/10.1016/S2214-109X(20)30116-9

Basilaia, G., & Kvavadze, D. (2020). Transition to online education in schools during a SARS-CoV-2 coronavirus (COVID-19) pandemic in Georgia. *Pedagogical Research*, *5*(4), 1-9. https://doi.org/10.29333/pr/7937

Bergdahl, N., & Nouri, J. (2020). Covid-19 and crisis-prompted distance education in Sweden. *Technology, Knowledge and Learning, 26*, 443–459. https://doi.org/10.1007/s10758-020-09470-6

Carrillo, C., & Flores, M. A. (2020). COVID-19 and teacher education: a literature review of online teaching and learning practices. *European Journal of Teacher Education*, *43*(4), 466-487. https://doi.org/10.1080/02619768.2020.1821184

Huang, C., Wang, Y., Li, X., Ren, L., Zhao, J., Hu, Y., Zhang, L., Fan, G., Xu, J., Gu, X., Cheng, Z., Yu, T., Xia, J., Wei, Y., Wu, W., Xie, X., Yin, W., Li, H., Liu, M., … Cao, B. (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *The Lancet*, *395*(10223), 497-506. https://doi.org/10.1016/S0140-6736(20)30183-5

Huber, S. G., & Helm, C. (2020). COVID-19 and schooling: Evaluation, assessment and accountability in times of crises-reacting quickly to explore key issues for policy, practice and research with the school barometer. *Educational Assessment, Evaluation and Accountability*, *32*(2), 237–270. https://doi.org/10.1007/s11092-020-09322-y

Judd, J., Rember, B. A., Pellegrini, T., Ludlow, B., & Meisner, J. (2020). *"This is not teaching": The effects of COVID-19 on teachers.* Social Publisher Foundation. https://bit.ly/3ttz1Rl

König, J., Jäger-Biela, D. J., & Glutsch, N. (2020). Adapting to online teaching during COVID-19 school closure: Teacher education and teacher competence effects among early career teachers in Germany. *European Journal of Teacher Education*, *43*(4), 608-622. https://doi.org/10.1080/02619768.2020.1809650

MacIntyre, P. D., Gregersen, T., & Mercer, S. (2020). Language teachers' coping strategies during the Covid-19 conversion to online teaching: Correlations with stress, wellbeing and negative emotions. *System*, *94*, 102352. https://doi.org/10.1016/j.system.2020.102352

Meleo-Erwin, Z., Kollia, B., Fera, J., Jahren, A., & Basch, C. (2020). Online support information for students with disabilities in colleges and universities during the COVID-19 pandemic. *Disability and Health Journal*, *14*(1), 101013. https://doi.org/10.1016/j.dhjo.2020.101013

Ní Bhroin, Ó., & King, F. (2020). Teacher education for inclusive education: a framework for developing collaboration for the inclusion of students with support plans. *European Journal of Teacher Education*, *43*(1), 38-63. https://doi.org/10.1080/02619768.2019.1691993

Patel, K. (2020). Mental health implications of COVID-19 on children with disabilities. *Asian Journal of Psychiatry*, *54*, 102273. https://doi.org/10.1016/j.ajp.2020.102273

Poletti, M. (2020). Hey teachers! Do not leave them kids alone! Envisioning schools during and after the coronavirus (COVID-19) pandemic. *Trends in Neuroscience and Education*, *20*, 100140. https://doi.org/10.1016/j.tine.2020.100140

R Core Team, R. C. (2019). *R: A language and environment for statistical computing (Version 3.0. 2)*[Computer software]. R Foundation for Statistical Computing.

Salari, N., Hosseinian-Far, A., Jalali, R., Vaisi-Raygani, A., Rasoulpoor, S., Mohammadi, M., Rasoulpoor, S., & Khaledi-Paveh, B. (2020). Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: A systematic review and meta-analysis. *Globalization and Health, 16*, 57. https://doi.org/10.1186/s12992-020-00589-w

Sepulveda-Escobar, P., & Morrison, A. (2020). Online teaching placement during the COVID-19 pandemic in Chile: Challenges and opportunities. *European Journal of Teacher Education*, *43*(4), 587-607. https://doi.org/10.1080/02619768.2020.1820981

United Nations International Children's Emergency Fund. (2020). *Leaving no child behind during the pandemic: Children with disabilities and COVID-19*. https://bit.ly/35v6xyy

van der Spoel, I., Noroozi, O., Schuurink, E., & van Ginkel, S. (2020). Teachers' online teaching expectations and experiences during the Covid19-pandemic in the Netherlands. *European Journal of Teacher Education*, *43*(4), 623-638. https://doi.org/10.1080/02619768.2020.1821185

Van Lancker, W., & Parolin, Z. (2020). COVID-19, school closures, and child poverty: A social crisis in the making. *The Lancet Public Health*, *5*(5), e243-e244. https://doi.org/10.1016/S2468-2667(20)30084-0

Zhang, W., Wang, Y., Yang, L., & Wang, C. (2020). Suspending classes without stopping learning: China's education emergency management policy in the COVID-19 outbreak. *Journal of Risk and Financial Management*, *13*(3), 55. https://doi.org/10.3390/jrfm13030055

Zhang, Y., & Ma, Z. F. (2020). Impact of the COVID-19 pandemic on mental health and quality of life among local residents in Liaoning Province, China: A cross-sectional study. *International Journal of Environmental Research and Public Health*, *17*(7), 2381. https://doi.org/10.3390/ijerph17072381

Appendix A

Questionnaire

1) General information

- Age: ____
- Gender
  - Male
  - Female
  - I prefer not to answer
- Level of education
  - Primary School Degree
  - Secondary School Degree
  - Bachelor's Degree
  - Master's Degree
  - Ph.D. diploma
  - Other: _____
- School's region:
  - Abruzzo
  - Basilicata
  - Campania
  - Calabria
  - Emilia-Romagna
  - Friuli Venezia Giulia
  - Lazio
  - Liguria
  - Lombardia
  - Marche
  - Molise
  - Piemonte
  - Puglia
  - Sardegna
  - Sicilia
  - Toscana
  - Trentino-Alto Adige
  - Umbria
  - Valle d'Aosta
  - Veneto
- School's type:
  - Primary School
  - Middle School
  - High School
- Years of teaching experience: _____
- Subject of teaching (answer with the main subject taught, or the one taught the most online; in the case of equal teaching hours choose only ONE subject and use this one to answer to all the following questions)
  - Italian
  - Maths/Physics
  - Biology/Earth science
  - Physical Education
  - History/Geography
  - Latin/Greek
  - Foreign Language (English, German, French, Spanish etc…)
  - Philosophy
  - Law
  - Religion
  - Other: _____
- Hours of teaching per week: _____

2) Online teaching–general

- What are the main advantages of online teaching? _____
- What are the main disadvantages of online teaching? _____
- What is your level of digital competence? (Liker scale 1 = awful, 10 = excellent)
- Online teaching helps students to learn concepts more efficiently. (Likert scale 1 = totally disagree 10 = totally agree)
- With online teaching, students are more active than with traditional teaching (Likert scale 1 = totally disagree 10 = totally agree)
- With online teaching, students are more bored than with traditional teaching (Likert scale 1 = totally disagree 10 = totally agree)
- With online teaching, students get more distracted than with traditional teaching (Likert scale 1 = totally disagree 10 = totally agree)
- How satisfied are you with online teaching? (Likert scale 1 = totally unsatisfied 10 = totally satisfied)

3) Online teaching–students with special educational needs

- Does and of your classes have students with special educational needs? (if answered no, switch directly to the next part of the questionnaire)
  - Yes
  - No
- (If answered yes) Which difficulties do your students have?
  - Students with Specific Learning Disabilities
  - Students with Speech Disorders
  - Students with Non-Verbal Disorders
  - Students with Motor Disorders
  - Students with Attention Deficit and Hyperactivity Disorders
  - Students with Disabilities
  - Students with a cultural, social or language disadvantages
  - Others: _____
- (If answered yes) How was online teaching adapted for students with special educational needs? _____
- What issues have emerged from the introduction of the online teaching for students with special educational needs? _____

With the online teaching, what methodologies have been introduced to facilitate students with special educational needs? _____