

Article

Distance Learning during the COVID-19 Pandemic. A Comparison between European Countries

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Abstract: COVID-19 has shaped and changed our normalities, and, with the discovery of new variants, the long-COVID syndrome, and stress disorders, the end of the pandemic seems distant. The current scenario is impacting all aspects of our lives. In particular, many studies reported that the pandemic resulted in increased psychiatric disorders and grief-related symptoms in adolescents. The project developed between Italy and Slovenia investigated students' experiences during the lockdown and, in particular, reported the perception of distanced learning, producing a transparent qualitative analysis that can inform future research and open to discussions on learning strategies. A survey was conducted with secondary school students in Southern Italy between 1 April and 31 May 2020 and in Central Slovenia between 16 March and 28 February 2021. Qualitative and quantitative data were collected based on students' perception of distanced learning, via an online survey platform. The results focused on three main aspects: learning experience, relationships with peers and teachers, and anxiety levels. The data showed similarities and differences in the two cohorts and suggested strategies to improve education (e.g., with blended approaches) to prepare students, teachers, and tutors for the challenges of returning to classes. In particular, data showed that it is recommended to foster collaboration between EU countries and to work to prevent students' social isolation.

Keywords: lockdown; social pedagogy; education; Slovenia; Italy; Europe; COVID-19; emergency; collaboration; inclusion



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1. Introduction

The COVID-19 pandemic has shaped and changed our normalities. In a few months the novel COVID-19 disease reached all corners of the globe [1,2] producing millions of deaths [3]. Moreover, the discovery of new variants [4], the long-COVID syndrome [5,6], and the stress disorder [7] seems to prevent an end to the pandemic. Indeed, the current scenario is impacting all aspect of our lives, from socio-economic [8,9], health [10], environmental [11], and educational [12] perspectives. In particular, many studies have reported that the pandemic resulted in increased psychiatric disorders such as post-traumatic stress, depressive, and anxiety disorders, as well as grief-related symptoms in adolescents [13–16] and adults [17,18].

We have previously reported the effect of the pandemic with adolescents. By adopting a student-centered pedagogic approach, we showed the perception of distance learning (DL) in Italy [19–21] and we subsequently reported a potential intervention of physical activities in DL to enhance student learning experiences [22]. Our results showed that in the past year there has been a dramatic lack in embodied experiences [23,24] and emotional-cognitive learning [25,26] in adolescents. This has had direct consequences since the lack

of social interaction and emotional education has resulted in phenomena of inequality, violence, and antisocial behaviors [27–29].

EU governments are dealing with the pandemic differently, with different lockdown and vaccination rules. To report the student perception of distanced learning in different EU countries the current article reports and compares the data from Slovenia and Italy. This article provides insight upon students' learning experiences and how different DL approaches and lockdown timing have impacted students' educational experiences in the past year.

1.1. Slovenia

The coronavirus disease was confirmed in Slovenia on March 2020, when the first case was discovered [30]. Then, the epidemic was officially declared on 12 March, and, only a day later, a new government led by Janez Janša took the lead. Measures by the new government to prevent the spread of COVID-19 led to the closure of educational organisations, including secondary schools and student dormitories. These were first closed on 16 March, and they were closed for the second time after extended holidays on 8 November 2020.

Hence, schools were suddenly forced to use DL strategies with little teachers' and tutors' experiences in this field [31,32]. Since then, students have been facing increased mental distress, as experts warn that the number of cases of depression, anxiety, stress, and other forms of negative states are increasing [33]. Additionally, it has been found that many students struggled to follow distanced-learning classes. Indeed, results from the research titled "Distance Education during the COVID-19 epidemic in Slovenia" conducted by the Institute of the Republic of Slovenia for Education, showed that about 20% of students share a computer with other family members [34,35] and therefore struggle to follow DL timetables.

The measurements of lockdown, although necessary, have paralysed the education system and reduced students' chances of positive interaction [36], consequently increasing the risks of poverty [37] and antisocial behaviours [38]. These issues combined with income poverty and poor housing conditions put children from socially disadvantaged backgrounds in an even more vulnerable position [39,40].

1.2. Italy

The Italian lockdown was declared on 9th of March 2020 [41]. The educational system was then forced to move into DL [42]. Ever since the Italian National Institute of Statistics (ISTAT; www.istat.it, accessed on 1 July 2020) reported that 45% of youths (between 6 to 17 years old) experienced DL difficulties caused by inaccessibility to study devices (i.e., computer or tablet) or lack of internet connection. The lack of physical interaction has impacted student perceptions of DL, and the difficulties in using the devices was reported as the primary cause of discomfort during DL [22].

Consequently, the dropout levels and the risks of adolescent delinquency increased [43–45]. As reported nationally, the DL has produced disadvantages for students and educators [46], causing a subsequent impact on study abilities to relationships with peers and teachers [47]. This is a lack that we have suggested should be filed with education toward emotion [48] and social-pedagogic inclusion via activities that foster adolescents' accountability [49,50].

Throughout a multidisciplinary approach, researchers from the Slovenia, United Kingdom and Italy developed a questionnaire to investigate the perception of distance learning among students. The project hence aimed to report students' experiences in DL and to look at the differences and similarities in the two EU countries, producing a transparent analysis to inform future research and discussions on learning strategies and blended education.

2. Materials and Methods

A survey was conducted, one in Central Slovenia between 28 February and 16 March 2021 and one in Southern Italy between 1 April and 31 May 2020. The identical questionnaires included 27 questions on the experience of distance learning compared to participation in classroom instruction, relationships with peers and teachers, and levels of anxiety. The questionnaire based on previous research [51] is published here in full (Table 1). The students answered the 27 questions via an online platform [52].

Table 1. List of question used in Slovenia and Italy.

Questions	Answer
1. How old are you?	<<open answer>>
2. What gender do you identify with?	<<open answer>>
3. Which educational institution do you study at?	<<open answer>>
4. What year are you in?	<<open answer>>
5. Do you have your own computer?	<<open answer>>
6. Which device do you use for distance learning/video conferencing?	<<open answer>>
7. In which room do you watch lectures/video conferences?	<<open answer>>
8. Do you always watch lectures/video conferences from the same room?	<<open answer>>
9. What software do you use to monitor lectures/video conferences?	<<open answer>>
10. How many lectures/video conferences do you watch online daily per day?	<<open answer>>
11. How many hours a day?	<<open answer>>
12. Do you have brothers and/or sisters? *	<<open answer>>
13. How many siblings do you have? *	<<open answer>>
14. Do you share a computer with them that you use for distance learning/watching lectures and video conferencing? *	<<open answer>>
15. Do you eat snacks or other harmful food during distance learning/watching lectures and video conferencing, which you would not normally do if you would be present to the lectures in class? *	<<open answer>>
16. What is your general experience with distance learning compared to classroom teaching?	<<open answer>>
17. Do I learn by distance learning ...	Better/worse/no change
18. Have I experienced distance learning in general ...	More inclusive/less inclusive/no change
19. With distance learning has my attention ...	Increased/decreased/no change
20. With distance learning, the relationship with my classmates and peers has ...	Improved/deteriorated/no change
21. By distance learning my relationship with teachers is now ...	Better/worse/no change
22. After distance learning lectures I feel ...	Less tired/more tired/no change
23. Remote lectures/videoconferences are for me ...	A bigger challenge/a smaller challenge/no changes
24. With distance learning I feel ...	More stressed/less stressed/no change
25. With distance learning, my anxiety with learning and homework has ...	Decreased/increased/no change
26. What do you like most about distance learning? *	<<open answer>>
27. What do you like least about distance learning? *	<<open answer>>

* Questions not present in the Italian questionnaire.

In Slovenia, the collection of primary data was carried out using the research method and technique of an online questionnaire for data collection, which was sent to all secondary schools listed in the Register of Institutions and Programs of the Ministry of Education, Science, and Sport (Ministry of Education, Science, and Sport. Records of institutions and programs. <https://paka3.mss.edus.si/registriweb/Seznam2.aspx?Seznam=3010> accessed on 1 June 2021.) and to student dormitories also listed in the Register of Institutions and Programs of the Ministry of Education, Science, and Sport.

In Southern Italy, the online questionnaire was delivered to the secondary schools in the only city of Naples, and the full details are reported elsewhere [20].

Empirical data obtained in the research were organised into groups (male and female), and their percentages were determined according to the answerer. In the open-ended questions, which asked what they liked and did not like about distance education, we grouped related concepts and answers into categories and determined their proportions.

The project's aim was to report students' experiences in DL and look at the differences and the similarities in the two EU countries, producing a transparent analysis to inform future research and discussions on learning strategies and blended education. For these reasons, a qualitative approach was used, and students' answers were fully reported with transparency. Hence, the discussion was based upon the authors' interpretation of the results.

3. Results

3.1. Descriptive Results

The questionnaire was answered by 479 students enrolled in secondary schools in Central Slovenia. Among them, there were 294 male (M), 171 female (F), and 14 agender students. The age of the respondents was between 15 and 22 years old. We covered the wide population of youth by not setting any specific inclusion/exclusion criteria, and we used a questionnaire that was available online, which we addressed to all secondary schools and student dormitories via email and social media (e.g., Facebook).

In Southern Italy, a group of 83 adolescents (64 females (F) and 19 males (M) with an age range between 13–19 years old) completed the online questionnaire. To include a broad sample of adolescents, non-specific inclusion/exclusion criteria were selected. Due to the lockdown restrictions, the questionnaire was delivered on an online platform via email and social media (i.e., Twitter, Facebook, and WhatsApp).

All data were anonymized and collected according to the guidelines of the 1975 Declaration of Helsinki, revised in 2013, and treated in accordance with the ethical principles presented by the European Educational Research Institute (EERA Educational European Research Association, 2011). Descriptive habits and characteristics are reported in Tables 2 and 3.

Table 2. Descriptive habits for both Slovenian and Italian students.

Answer	Percentage in Slovenia	Percentage in Italy
Which device do you use for distance learning/video conferencing?		
Computer	70.3	42.4
Smart phone/tablet	28.0	56.5
Other device	1.7	1.1
From where do you participate in lectures/videoconferences?		
From own room	72.7	68.7
From different room	27.3	30.1
What software do you use to monitor lectures/videoconferences?		
Zoom	55.8	25.3
Cisco	0.2	2.4
Skype	0	19.3
Microsoft Teams	41.3	6.0
Google	0.4	26.5
Other	2.3	20.5
Do you have siblings?		
Yes	86.2	66.7
No	13.8	33.3
How many siblings do you have?		
0	10.7	N/A
1	47.8	N/A
2	24.0	N/A
3	9.0	N/A
4	2.1	N/A
5	0.6	N/A
6	1.0	N/A
More than 6	4.8	N/A
Do you share with them the computer you use for distance learning/watching lectures and video conferencing?		
Yes	15.9	58.7
No	83.3	41.3
No answer	0.8	0.0
Do you enjoy snacks or other unhealthy food during distance learning?		
Yes	45.5	N/A
No	54.3	N/A
No answer	0.2	N/A

Number of classes and hours of DL activities are reported in Table 3.

Table 3. Descriptive data from Slovenia and Italy about classes and hours of distanced learning.

Answer	Percentage in Slovenia	Percentage in Italy
Number of lectures/videoconferences per day		
1	1.0	1.2
2	5.6	0.0
3	26.5	0.0
4	30.9	7.2
5	20.0	14.5
6	8.4	20.5
7	4.6	24.1
8	1.7	24.1
More than 8	1.3	16.8
No. hours of monitoring (h)		
1	2.3	3.6
2	7.5	10.8
3	15.9	42.2
4	27.8	34.9
5	18.8	20.5
6	12.5	1.2
7	8.5	0.0
8	4.8	2.4

3.2. Perception of Distanced Learning

To the question concerning “general DL experience compared to standard synchronous classroom learning,” students from Slovenia reported that it was better (M 32.2%; F 37.7%), worse (M 45.6%; F 42.5%), or without changes (M 23.1%; F 19.7%). The Italian cohort reported that it was better (M 18.8%; F 26.6%), worse (M 25.0%; F 31.3%), or without changes (M 56.3%; F 42.2%). To the question that compares learning outcomes between DL and frontal in class learning (i.e., “in DL I learned”), the Slovenian group replied that it was better (M 30.1%; F 32.9%), worse (M 43.2%; F 43.9%), or without changes (M 26.6%; F 23.1%). The Italian cohort replied that it was better (M 15.8%; F 31.3%), worse (M 52.6%; F 39.1%), or without changes (M 31.6%; F 29.7%). When enquired about the “general learning experience” in comparison with frontal in-class learning, the Slovenian cohort replied that it was better (M 19.7%; F 23.7%), worse (M 44.6%; F 43.4%), or without changes (M 35.6%; F 32.9%). The Italian group reported that it was better (M 13.3%; F 20.0), worse (M 33.3%; F 50.9%), or without changes (M 53.3%; F 29.1%). On the final question about the perception of distance learning in comparison with in-class frontal learning (i.e., “level of attention”), the Slovenian group reported that it increased (M 18.0%; F 17.3%), decreased (M 55.0%; F 58.3%), or had no changes (M 27.0%; F 24.7%). The Italian cohort answered that it increased (M 21.1%; F 25.0%), decreased (M 31.6%; F 25.0%), or had no changes (M 47.4%; F 50.0%). Data on the experience of distance learning are fully reported in Figure 1.

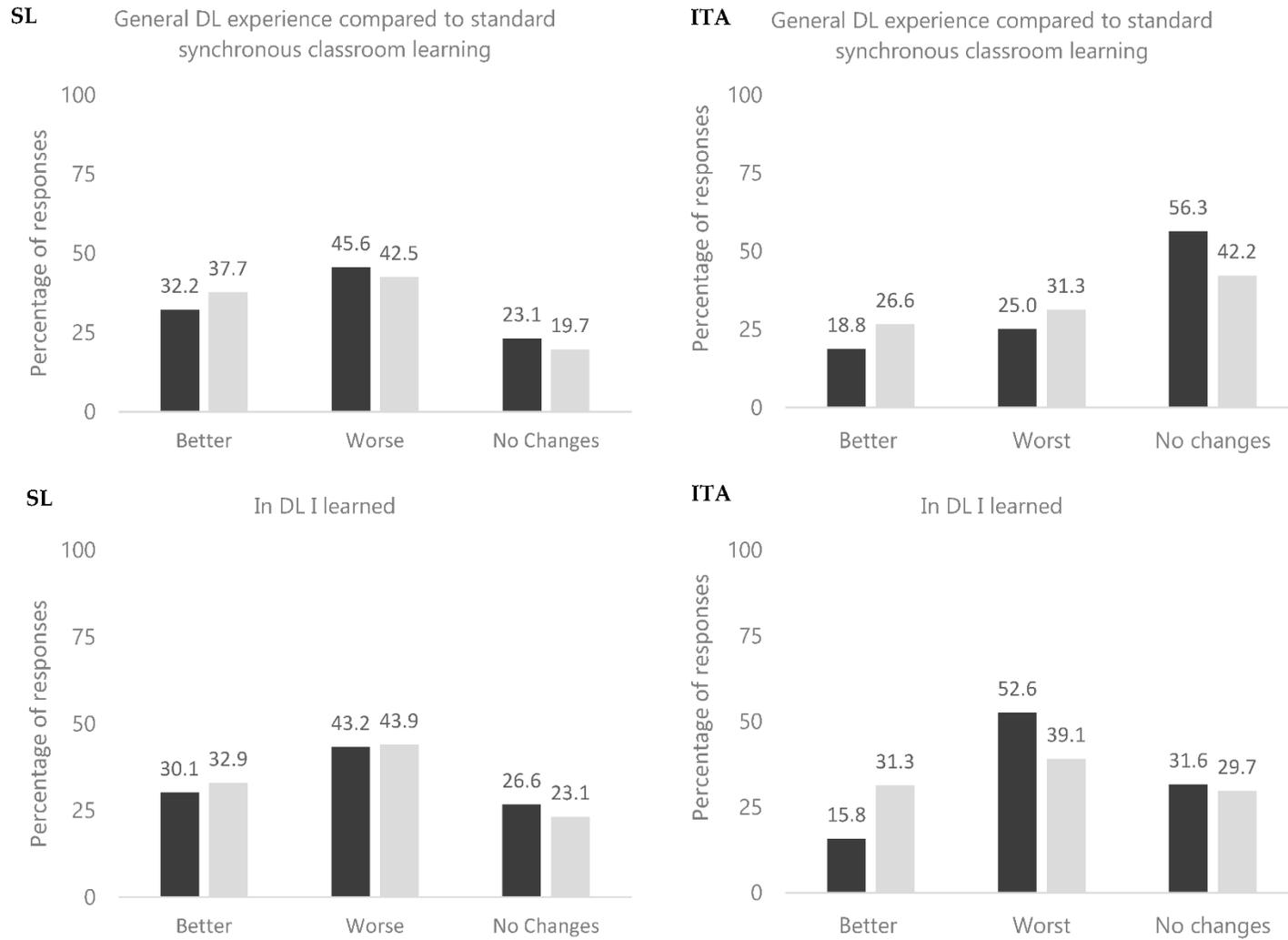


Figure 1. Cont.

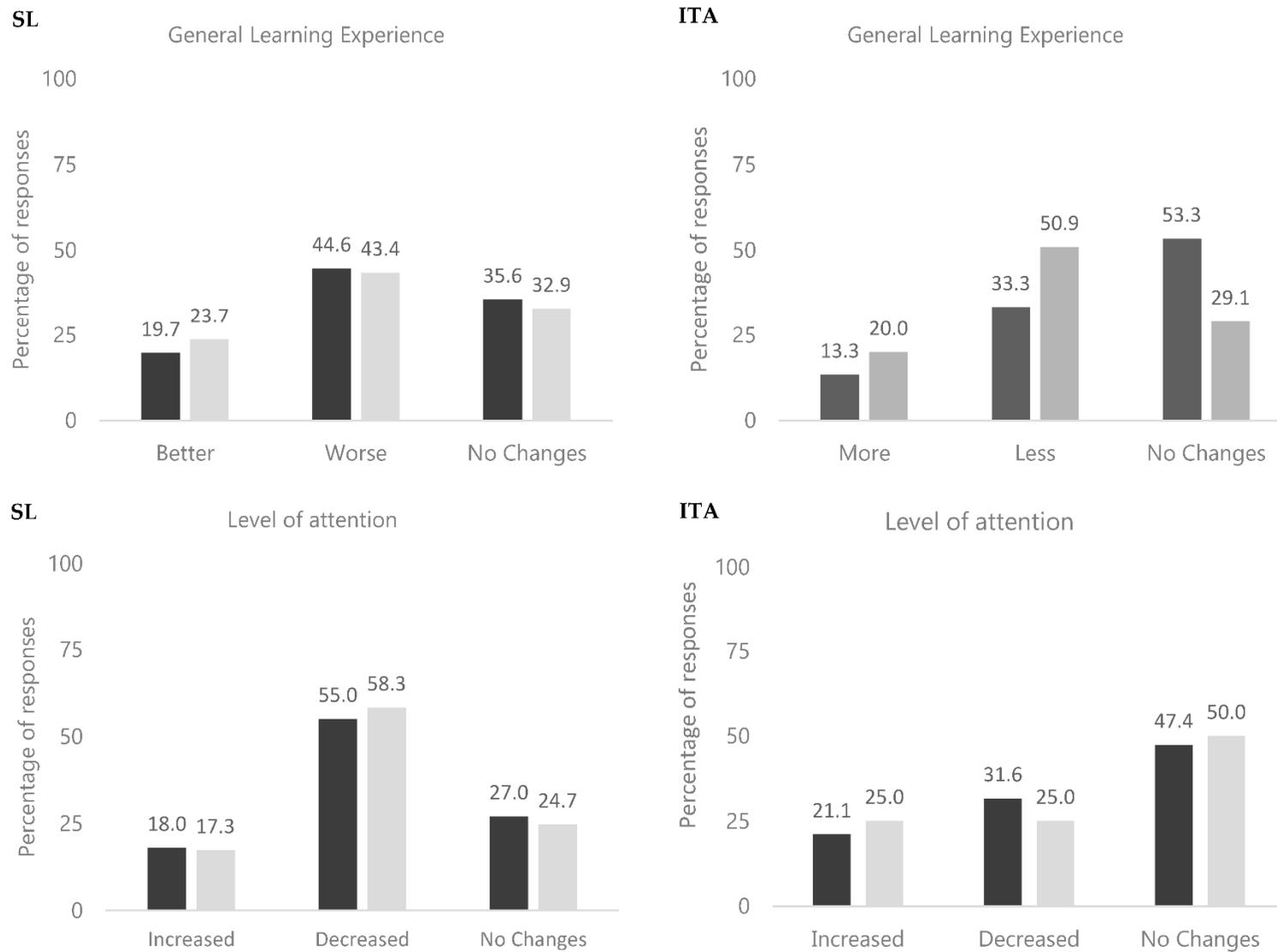


Figure 1. SL = Slovenia, ITA = Italy. ■ Male, ■ Female.

3.3. Relationship with Classmates, Peers, and Teachers

When asking about the relationships, these questions were divided into relationships with peers and relationships with teachers. In the first question (i.e., “relationship with peers” during DL), the Slovenian group reported that it improved (M 19.4%; F 9.8%), worsened (M 30.1%; F 43.9%), or had no changes (M 50.5%; F 46.2%). The Italian cohort reported that it improved (M 15.8%; F 19.0%), worsened (M 26.3%; F 31.7%), or had no changes (M 59.7%; F 49.2%). In the second question (i.e., “relationship with teachers” during DL), the Slovenian cohort reported it to be improved (M 23.5%; F 18.5%), worsened (M 21.1%; F 24.3%), or without changes (M 55.4%; F 57.2%). The Italian group reported it to be improved (M 15.8%; F 23.0%), worsened (M 26.3%; F 37.8%), or without changes (M 57.9%; F 39.2%). Data on the relationships between classmates and teachers during distance learning are presented in Figure 2.

3.4. Levels of Stress and Anxiety

The final group of questions concerned tiredness and levels of anxiety. In particular, to the question “after distanced learning I feel . . . in comparison to frontal in class learning,” the students from Slovenia answered less tired (M 40.8%; F 43.4%), more tired (M 37.0%; F 39.9%), or without changes (M 22.0%; F 16.8%). The Italian students answered less tired (M 21.1%; F 32.8%), more tired (M 47.4%; F 40.6%), or without changes (M 31.6%; F 26.6%). The following question was about the challenges of distanced learning, to which the Slovenian cohort answered to feel more challenged (M 31.8%; F 35.8%), less challenged (M 45.6%; F 38.7%), or neither more nor less challenged (M 22.4%; F 25.4%). The Italian cohort answered to feel more challenged (M 15.8%; F 14.1%), less challenged (M 36.8%; F 54.7%), or neither more nor less challenged (M 47.4%; F 31.3%). When the students were asked about the level of stress during distanced learning, the cohort from Slovenia answered to feel less stressed (M 41.8%; F 38.2%), more stressed (M 33.6%; F 43.9%), or no different (M 24.5%; F 19.7%). The Italian cohort answered less stressed (M 31.6%; F 34.4%), more stressed (M 26.3%; F 28.1%), or no different (M 42.1%; F 37.5%). Finally, when asked about homework anxiety, the Slovenian cohort answered that during DL, it decreased (M 30.4%; F 27.7%), increased (M 40.5%; F 41.0%), or neither increased nor decreased (M 29.0%; F 31.2%). The Italian cohort answered that it decreased (M 42.1%; F 54.7%), increased (M 47.4%; F 21.9%), or neither increased nor decreased (M 15.8%; F 21.9%). Data on perceived levels of anxiety and stress are shown in Figure 3.

We added two more open questions in the questionnaire delivered in Slovenia, which we then classified into semantic groups, and with them we received insight into what students liked and disliked about DL (Tables 4 and 5).

Table 4. What you liked best about distance learning, expressed as a percentage.

What Do You Like about Distance Learning?	Percentage
No getting up early/I can sleep longer	19.6
No answer	16.3
No trip to school/I can stay at home	14.0
Independent scheduling of time/work	11.7
I do not like anything about it	11.1
More free time/more learning time	9.6
It is easier	3.8
Everything	3.3
I can follow the lessons more comfortably (e.g., better chair, adjustment of volume, no disturbance from classmates)	1.9
There are no social contacts/I am not with classmates who bully	0.8
To prevent infections	0.4
Other	7.5

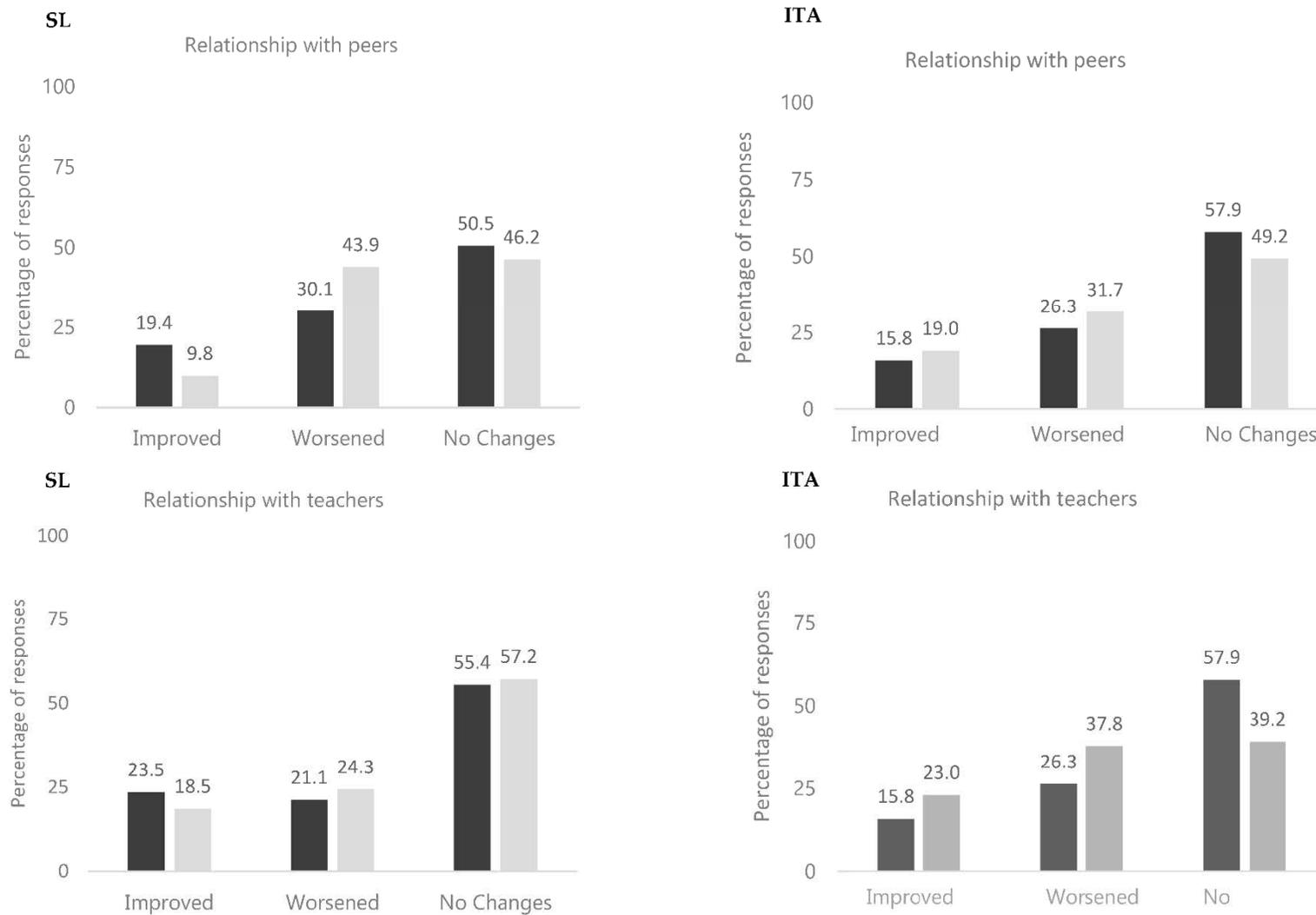


Figure 2. SL = Slovenia, ITA = Italy. ■ Male, ■ Female.

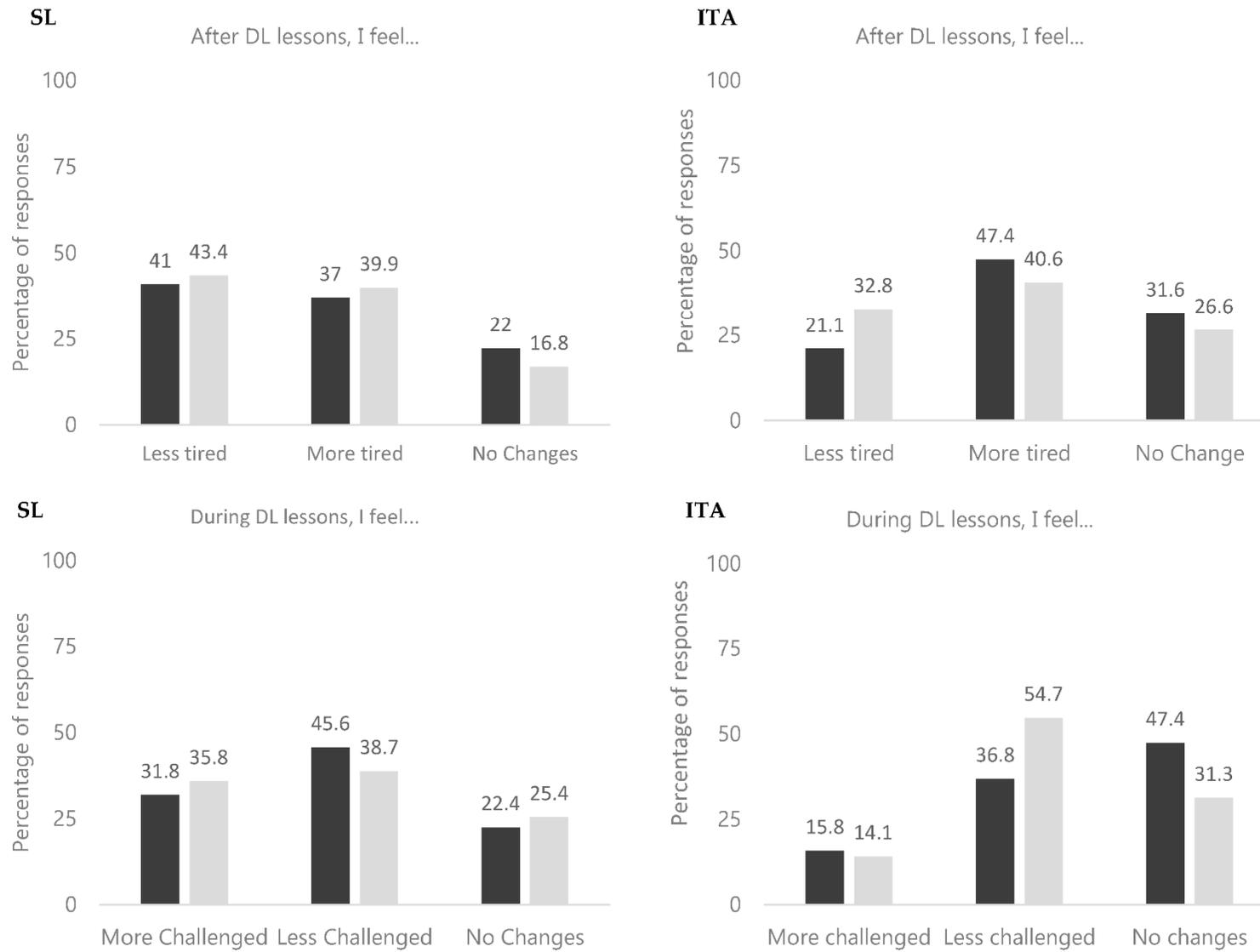


Figure 3. Cont.

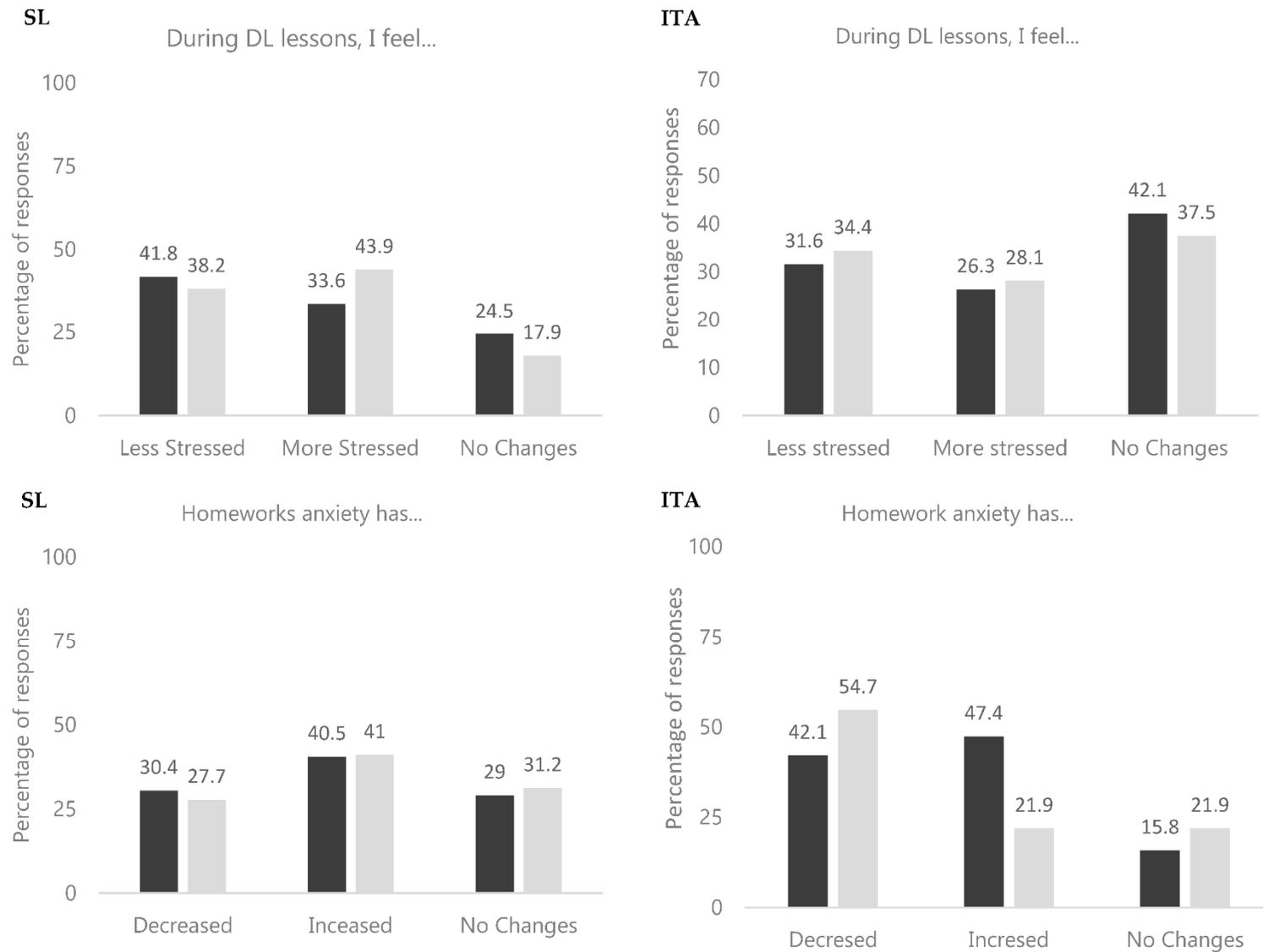


Figure 3. SL = Slovenia, ITA = Italy. Male, Female.

Table 5. What students liked the least about distance learning, expressed as a percentage.

What You Did Not Like about Distanced Learning	Percentage
No reply	22.1
No contact/no lessons at school, video conferencing, no physical activity, being at home, etc.	14.4
Poor organization by lecturers, schools, unwillingness of lecturers, non-participation of classmates.	12.5
Everything	8.1
Nothing	7.5
Less attention in class/lack of motivation, fatigue.	6.5
More homework	5.9
Too many electronic devices/problems with them.	4.8
Fear of inferior knowledge.	4.4
No practice	2.9
Assessment methods	2.5
Too much learning content to comprehend	1.7
Other	6.7

4. Discussion

The observational study was conducted to investigate the experience of distance learning among students from secondary schools in two EU countries, Slovenia and Italy, during the lockdown. The questionnaires included 27 questions on the perception and use of distance learning. It was developed based on previous research that studied adolescents' habits, relationships, and emotions using the "SMART questionnaire" [51], which was created based on emotion learning [25] and embodiment theories [24].

The project's aim was to report students' experiences in DL and to explore differences and similarities in the two EU countries, producing a transparent analysis to inform future research and discussions on learning strategies and blended education.

The questionnaire explored three main areas of pedagogical interest of the study: (i) perception of distance learning, (ii) relationships with peers and teachers, and (iii) levels of stress and anxiety. The data include students who had access to internet devices and who followed DL courses during the pandemic. However, it is important to mention that many students in both Slovenia and Italy have not been able to follow their courses online due to the absence of technologies (not all students had a computer or tablet) or due to lack of access to an internet connection. Indeed, an increase in school dropouts [46,52,53] has been reported, whose effects can have a direct impact on social-economic areas in the upcoming future [54,55].

In the current study, a total of 562 students were inquired from both Slovenia and Italy.

4.1. Slovenia

Our group of 479 students did not show gender differences, suggesting that students have similar experiences unrelated to their gender. Further studies should provide tools tailored to adults and teachers to identify the effects of stereotypes and parental control, as well as limitations in the use of technologies that could be experienced by different groups (e.g., social, gender, and cultural groups).

The study showed that most respondents estimated that their general experience with distance learning was worse than in-class and that in DL their learning experience was worse than before. Distance learning was assessed by most respondents as less inclusive with a lower level of attention than usual. Although the research on attention span and DL is still under examination [56–58], it has been reported that multitasking (here defined as the ability to surf the internet and social media while in DL) has a direct effect on attention span [59] and can contribute to diminishing students' experience. The use of social media during DL requires further investigation, as uncontrolled usage of social apps can indeed produce the phenomenon of addiction, a decrement in social skills, and mental health

disorders [60–63]. Education on device usage and netiquette [64] should be transversal and should include adolescents, teachers, and tutors.

Another important aspect to consider is the relationship with teachers. As described in other research, the new generation has replaced attentive monitoring with the need for interaction. Teachers began slowly and cautiously introducing interactive content into education decades ago, and the time of the epidemic encouraged them to accelerate the “evolution” of education and begin preparing content that goes beyond the “mouse click generation” [65].

The third part of the questionnaire focused on the levels of stress and anxiety experienced by respondents during distance learning. The data obtained showed that most of the respondents felt less tired after the lectures. The data also showed that females feel more stressed during distance learning, while, for males, distance learning is less stressful than conventional school attendance. Anxiety can have a drastic impact on an individual’s learning and life outcomes [66–69]. Additionally, students expressed an increment in homework stress; these results can potentially be compared to the stress and workload perceived in different age groups during the pandemic. Adults too reported feelings of uncertainty [70], and although more productive [70], many felt an increment in working hours that led to a complete reshaping of their life [71] including stress-related disorders as mentioned in the introduction.

Finally, the qualitative analysis showed that the students enjoyed working from home, particularly as it saves time to travel to and from school each morning. However, they complained about the impossibility of meeting their friends in-person and about the quality of the lessons. Similar outcomes were also reported in Italy during a survey that looked at the effect of physical-activity interventions in DL [22], which indicates a common path in DL-related complaints. Novel research should investigate best practices to enhance students’ perception and to facilitate the learning experience, potentially integrating more inclusive and interactive activities.

4.2. Italy

Data from Italian students have already been presented and discussed elsewhere [20], showing no gender differences in the perception of DL and demonstrating a transversal effect of asynchronized teaching upon the Italian cohorts. Additionally, we reported the importance of student-to-student and student-to-teacher relationships, which did not decrease during the lockdown. We concluded that these results showed an incredible resilience and ability to deal with technologies never seen before in previous generations.

Additionally, the level of anxiety decreased, demonstrating a potential DL benefit or the possibility that working in a unsupervised environment makes it easy to cheat at tests [72]. These results were also compared at different times (2 months and, later, 10 months) into the pandemic [53], showing no variation between the perception of the learning experience over time. Indeed, our results link perfectly with the report completed by Società Italiana di Ricerca Didattica (SIRD) that reported teachers’ difficulties in dealing with the novel didactic situation. Difficulties related to lack of experience [73] and equipment [74]. Additionally, the long use of DL experience has shown an increase in student inter-personal interactions, which are not novel to the research scenario. Indeed, previous research reported an increase in social media interactions with peers in contrast with fewer in-person interactions, even before the pandemic [75,76]. However, if these inter-relations might be beneficial for students to communicate with peers, there is minimal or no supervision from responsible adults (e.g., teachers and tutors), which, in the majority of the situations, are not able to use the same apps as their pupils, leaving an empty pedagogic frame. This is a frame that more and more often has been used as an instrument for bullying, body-shaming, and violence among the younger generation [77–79], as shown by recent episodes of group violence and organized fights via social media [80]. We also concluded that students’ increase in relationship abilities can also indicate a high risk of Chomsky’s adaptation to the situation [81]. The lack of interactions with peers and

others for longer than a year might have produced a routine of sensory, cognitional, and educational deprivation that the younger generation can no longer express.

4.3. Descriptive Comparison

A comparison between the results in Slovenia and Italy shows a similarity from the students' perspective of DL. Both cohorts showed no differences between gender in distance learning. The results also suggest that the students cope well with technology and that they used them as a bridge to cross the gap in relationships with peers and teachers. A third important finding concerns the level of anxiety. Although a reduced level of anxiety could be expected, at least in the area of homework obligations, this did not materialise in Slovenia, while, in Italy, the responses were different, indicating that other factors might affect students' homework anxiety. Finally, it seems that both groups showed a tendency toward decreased DL engagement; however, further study is necessary to understand the potential benefits and disadvantage of DL.

5. Conclusions

The research carried out a collaboration between institutes across the EU. It reported the experiences of distance learning in the population of adolescents in Slovenia and Italy during the COVID-19 lockdown. We focused on three main aspects: learning, relationships, and anxiety. The results showed similarities and differences in the two cohorts.

We concluded that distance learning has several advantages and disadvantages that need to be addressed, including a lack of socialization, especially in relation to inclusive activities (such as practical training, professional excursions, work in specialized classrooms, and physical activities).

Hence, distanced learning seems to have a negative effect on social interaction and inclusivity. This conclusion is in line with the importance of including emotion learning [25] and embodiment theories [24] in future blended approaches, in order to facilitate students' interaction and to foster socialization and inclusivity. The research team is currently investigating these practices with the bodytasking method, which is a dance-based intervention tailored for adolescents [22].

On the contrary, the positives of distanced learning appeared partially related to students' level of anxiety, which seemed to decrease, along with the time saved to travel to the schools. Distanced learning also allowed dealing with much larger classrooms and sharing more interactive content than during standard teaching. However, as mentioned previously, distanced learning is not sufficiently inclusive. The only students who can benefit from distanced learning have a personal computer, a fast internet connection, and a personal space in which to work [82].

Although no one had the experience to deal with the circumstances during COVID-19, it is nevertheless our responsibility to provide support to the younger generations who are going through difficult times and who have neither the means nor the opportunity to alleviate the hopeless situation. Adults need to be responsive and must serve primarily as an example to pupils who need to tackle the self-organization of their own learning experiences for the first time.

We recommend a broad analysis of peer relationships that use social media to explore what can be defined as a healthy relationship on social media and what cannot. There are many types of interactions that take place with new types of applications (e.g., SnapChat, Discord, and TikTok), which need additional control to prevent phenomena such as unhealthy body perception, negative impacts on individual self-esteem, emotional manipulation, and sexualized behaviour.

Further research should also report details on the degree of anxiety during asynchronous teaching and methods to increase the quality of students' experiences in extreme situations, such as school closures. A wide field for further research is also the field of multitasking. It is necessary to investigate the effects of multitasking in the younger generation and how this phenomenon can be used as a pedagogical tool.

Finally, it is important to seek cooperation between countries to address the issue globally in order to improve education and prepare students, teachers, and tutors for the challenges of post-COVID era [52].

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