

JRC SCIENCE FOR POLICY REPORT

Emergency remote schooling during COVID-19

A closer look at European families

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Front cover image by Carmen Capote. Caption: While most children interviewed for this JRC report said they enjoyed using digital technologies, they and their parents were critical of the way it was used for remote schooling during the lockdown.

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Abstract

This report maps the **digital engagement of children** aged between 6 and 12 years and the **perceptions and practices of their parents**, related to **emergency remote schooling** during and after the spring 2020 lockdown during the COVID-19 pandemic.

It relies on the rich accounts of 105 children and their parents interviewed by researchers across ten countries between April and December 2020.

The aim of this report is to:

- get a **better understanding of remote schooling in European households during the COVID-19**, so that policymakers and education stakeholders may be informed of the current trends and possible impacts of the COVID-19 crisis on schooling and future models of online/ blended learning/ hybrid education
- provide recommendations to ensure that **future policy actions are aligned with the needs** reported by European families, that future risks are mitigated and positive developments are further supported.

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Executive summary

This report maps the **digital engagement of children** aged between 6 and 12 years and the **perceptions and practices of their parents**, related to **emergency remote schooling** during and after the spring 2020 lockdown during the COVID-19 pandemic.

It relies on the in-depth accounts of 105 children and their parents interviewed by researchers across ten countries between April and December 2020.

The spring 2020 COVID-19 lockdown marked a **significant turning point for education**. Most schools were obliged to close their premises and around 1.5 billion students in 188 countries had to move to remote schooling (OECD, 2021). Within such a context, teachers and school leaders were faced with the challenging task to pursue remote teaching. Many schools were ill-prepared for such a transition because, even for schools who had used technology before, and hence were slightly more prepared, remote schooling was still an unprecedented situation. Many schools did not know what technology and methodology were the most appropriate for instruction, in terms of effectiveness, security and accessibility. A great variety of readily available technologies were used, many of which were not intentionally designed for teaching.

Although many schools have since re-opened their premises, life is still far from normal, with many children continuing to struggle to some degree with remote schooling. While this situation was unforeseen and unique, it has shifted the way we think of and see the future of education.

The aim of this report is to get a **better understanding of what happened in European households** during and after the spring COVID-19 lockdown. This knowledge will assist policymakers and education stakeholders in understanding the current trends and possible impacts of the COVID-19

crisis on schooling and future models of online/blended/hybrid education. This understanding will ensure that **future policy actions are aligned with the needs** reported by European families, that future risks are mitigated and positive developments are further supported.

Despite the number of difficulties faced by schools and the jarring transition to remote schooling, the data from our interviews confirm that a **wide range of learning** took place during and after the spring 2020 Covid-19 lockdown, although in **unequal measures**. Many teachers **lacked the appropriate skills to teach remotely**, yet found innovative ways and means to teach and stay in touch with their students, with or without technology. The majority of teachers invested a huge amount of time to learn new digital skills.

Many students engaged in various activities, often promoted by the family, especially during their leisure time, through which **transversal skills** such as creativity, problem-solving, communication and 'learning to learn' have been gained. These skills are listed by various frameworks produced over the years as indispensable for citizens of the future in order to facilitate young people's transition to adulthood, active citizenship (Council of the European Union, 2018; OECD, 2018; Trilling & Fadel, 2009). When children were motivated to learn and had a supportive environment, they found **various ways to self-teach themselves**. For many, online videos became the new teacher. Children were motivated to learn new technologies especially when they saw further application of their learning in other aspects of their lives. Such skills and knowledge often fall outside what is stipulated in most curricula.

Our findings might seem contradictory to what other studies have found, whereby **quantitative analysis** is showing that students made little or no progress while

learning from home (Blaskó, Da Costa, & Schnepf, 2021; Engzell, Frey, & Verhagen, 2021). Such studies focus on formal learning objectives and assessment, while in this study, the **qualitative approach** allowed us to capture non-formal learning practices that are hard to capture by formal assessment methods. Moreover, our findings revealed an unexploited potential for **learning and self-learning** that can take place during remote learning when children have a supportive environment. In fact, those **children who had a supportive home environment** (e.g. support from parents, a quiet space to work, the availability of devices, exposure to different ways of learning, etc.) reported **better learning experiences**, although these were not always linked to formal schooling. On the other hand, (Engzell et al., 2021) **students with learning difficulties faced more obstacles** in a remote learning environment. The exception to this were children who were shy or preferred to work at their own pace.

Remote schooling varied greatly between children. Main differences reported by families were related to age groups, schedule, teachers' digital competences, the level of interaction between teacher and student, workload, the organisation of the family and the use or not of digital technology for instruction by the teacher. According to parents, teachers' digital competences were a determining factor for effective remote schooling. Personal interest in this type of instruction and pedagogical innovation and flexibility also helped. The need for ensuring that **teachers have adequate digital competences** and that **families are supported when using new technologies** was highlighted by many parents. In most countries, schools and families had to adapt to the emergency with little guidance. Even within a school, teaching methods varied substantially between one teacher and another, at times creating confusion for students. Some countries, such as Croatia, Portugal and France, opted for an official programme using a national

television station to avoid exclusion. Not all students found this useful for their work.

During lockdown, children increased their consumption of digital content. To attend online classes and do schoolwork and homework, children used mostly tablets, laptops and computers. The smartphone also played a major role in remote schooling, especially where parents acted as intermediaries between the school and their children. Many families also incorporated headphones and printers as part of their devices, in order to help their children with remote schooling. The **change in use of digital devices** from previously mostly leisure and entertainment use to increased academic use caused some discrepancy in children's motivation and expectations when using digital devices for schooling. This created confusion for some children.

Many children found remote schooling less engaging than face-to-face instruction and were surprised to find themselves bored, unable to stay focussed and unmotivated. At the same time, they showed great motivation to **learn new skills and creative use of digital devices for school projects**, learning independently and for socialising with friends, highlighting the need for a better design of online and remote instruction for this cohort of students who are used to highly interactive and engaging digital devices.

Many schools and teachers went through a trial-and-error process and changed their approach in how they taught throughout the lockdown. Families reported a continuum of technology that ranged from paper, to basic communication digital devices, to more sophisticated learning platforms. A good proportion of school-related activities were asynchronous and paper-based. When technology was used, the prevalent process was through technology mostly aimed at communication, as opposed to teaching. Basic communication tools relied heavily on parents' intervention, who often acted as intermediaries between the teacher and the

student. For synchronous teaching, video-conferencing platforms were mostly used. **Children spoke positively of virtual learning platforms.** Many felt they have gained autonomy, reinforcing previous knowledge and learning how to use new technologies. The heterogeneous approach towards remote schooling undertaken by various schools prompted a lot of comparison and created *'the grass is always greener on the other side'* effect. Those families who did remote schooling on paper wanted more digital devices, while families whose children had long hours on digital devices would have preferred more paper-based work.

Families saw **technology as an essential aspect of their daily lives** during the lockdown and in general, perceived technology as an important tool for learning and the **development of digital competences as indispensable** for the future of their children. Overall, they encouraged a responsible use of digital devices. In the majority of families interviewed, a minimum of one device was available already before lockdown. In a good number of families, the number of digital technology devices was twice or triple the number of family members. Families felt it was necessary to buy or borrow other digital devices to ensure that their children could pursue their education. Only a few countries offered the opportunity for children to borrow digital devices from the school. This marked a shift of responsibility from the school to the family, with some expected repercussions.

Access to digital devices and internet access was not the same in all families **exacerbating education inequality.** Moreover, the number of digital devices did not always equate with **aptness and needs for remote schooling.** Not all families had technologies appropriate or necessary for remote schooling. Many families found ways to share technology between family members at different times of the day.

Larger and low-income families faced more obstacles in ensuring that all their children had access to a digital device. Also, those more resistant to digital devices acquired new devices or made an internet subscription, with **some renouncing their values** on the use of screens, to ensure that their children do not fall behind with their education. Some parents raised concerns that remote schooling has accelerated their children's use of digital devices against their will, given children substantially increased the use of screens obliging many parents to **renegotiate their parental mediation** of their children's use of technology. Children needed technology not just for entertainment, but also for schooling and for socialising with their friends. This raised concerns and worries related to overuse of technology, addiction and its negative implication on children's **physical and mental health.** When asked about risks of technology, very few parents spoke about the privacy of their children's data when using remote schooling technologies.

A major challenge of remote schooling was **the organisation of remote schooling at home.** It was not easy for parents to be engaged in communicating school tasks to their children, the delivery of schoolwork to the teacher, and ensuring that their children have done the tasks on time whilst balancing family needs and work life. Mothers found the balancing harder, as the demand on them was heavier. Some older students also reported feeling overwhelmed from having to self-organise their school tasks. While on average, parents in this study spent an average of two to three hours daily helping their children with their schoolwork, we had cases where children had to spend a long time alone or looking after younger siblings, as parents had to work and could not attend to their children. In general, **parents found their role as teachers challenging** and not all had the required skills to help their children.

In the eyes of 6 -12 year olds, digital technologies were seen as valuable devices, offering a great array of different possibilities for learning, for entertainment and for staying in touch with friends and family. The **majority have improved their digital skills** in different ways. This was particularly true for younger children. To learn how to operate various devices or install specific software, children turned less to their teachers, and more to parents, siblings, peers, and neighbours or watched online tutorials.

Despite the overall positive perception of digital devices, when it came to remote schooling both **parents and children expressed mixed feelings on its mode of operation and effectiveness.** Parents confessed that their high involvement in remote schooling increased stress levels and some even questioned the effectiveness of remote schooling, especially regarding younger children. They felt that they needed some guidance on how to better manage their children's use of technology based on solid evidence about the effects in the long run.

Many children were critical of remote schooling and claimed to miss the interaction with their friends and their teachers and the classroom environment. The **majority wanted to go back to schools and to face-to-face learning and playing.** Overall, parents also stressed the desire for children to be able to go back to attend on site schooling. **Digital tiredness** was an

issue raised by both parents and children. The number of hours children spent with technology increased dramatically and children had little say over how many hours they were expected to use technology for schooling. During the lockdown, both parents and children came to realise the important role schools play in their lives, not just for the educational value but also its social dimension.

Over this short period, we have seen **the resilient nature of many schools in adopting rapidly to an unforeseen situation.** However, although the ability of schools, teachers and school leaders to transfer instruction online was innovative in many cases and better than we would ever have imagined, still the COVID-19 period is showing that remote schooling cannot fully replace on-site schooling for children between 6 and 12 year olds. **Remote schooling did not favour all children equally.** Children missed the social aspect of schooling and their mental well-being suffered. Research knowledge and experiences during this period should be preserved for future research and policies. In the context of future emergencies, social and relational aspects of remote schooling cannot be ignored. Also, support for parents in how they can support their children's education is indispensable. Finally, in order to maximise the benefits and effectiveness of digital technology for learning, it is of utmost importance that **policies and future research take into account children's own perspective.**

1. Introduction

The spring 2020 COVID-19 lockdown marked a significant turning point for education with most schools in Europe closing their premises between February and March 2020 and staying closed until the end of the scholastic year 2019-2020. Faced with such a reality, teachers and school leaders encountered the challenging task to pursue instruction and communication with their students remotely. Despite the jarring transition to remote schooling, education pursued in many schools and many students were still able to continue learning. Yet, the situation was far from ideal: education became an emergency matter, with teachers doing emergency remote teaching (Trust & Whalen, 2020), with educational technology positioned at the frontline emergency service for many schools (Williamson et al., 2020) and technology was not equally accessible across Europe. Also, students from less advantaged backgrounds were more likely to experience learning loss due to lack of resources, parental support and digital skills (Di Pietro, Biagi, Costa, Karpiński Z., & Mazza, 2020; Engzell et al., 2021). Moreover, modes of instruction varied substantially and often depended on teachers' capability to adapt rapidly to remote schooling, digital competences and availability of support from school and regional/national government.

For many teachers this was the first time they were teaching remotely, most did not know how to use the technology required for instruction and many others did not have the digital competencies to use such technology (Sánchez-Cruzado, Santiago Campión, & Sánchez-Compañá, 2021). Many schools were ill prepared for such a digital transition to remote schooling, with no digital action plan in place, and without analysis of which technology was the most appropriate for instruction, in terms of effectiveness, security and accessibility. In many European countries, public education policy was also unprepared for such a situation. In the emergency context, many schools adopted commercial technologies readily available on the market. A great variety of such technologies was not designed for teaching, but teachers adapted its use for their needs, to ensure that instruction prevailed.

Ensuring that education and training systems in Europe are fit for the digital age is a priority set in the Digital Education Action Plan 2021-2027, whereby the European Commission's vision for high quality, inclusive and accessible digital education in Europe.¹ The right to quality and inclusive education, training and life-long learning are established as the first principle of the European Pillar of Social Rights.² The crisis provoked a shift in the way we think and foresee education and its future.

Despite the number of difficulties faced by schools and the jarring transition to remote schooling, the data from interviews of the present study confirm that children learnt a broad range of competencies during and after the 2020 COVID-19 lockdown, although less equal across students. Although many teachers lacked the appropriate skills to teach remotely and teachers' approaches varied during this period (Wyse, Stickney, Butz, Beckler, & Close, 2020), the majority invested a huge amount of time to learn new skills just to ensure the continuity of education. Many went out of their way to ensure that all students were receiving the schooling material, to stay in touch with them and to provide opportunities for students to see their classmates. Yet, there were still many students who had little to no interaction with their teacher or who could not access schooling material due to lack of access to the internet or to an appropriate digital device fit for remote schooling (Vuorikari, Velicu, Chaudron, Cachia, & Di Gioia, 2020).

¹ https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_en

² https://ec.europa.eu/info/publications/european-pillar-social-rights-action-plan_en

1.1 Aim of the report

This report maps children's digital engagement for remote schooling and parents' perceptions and practices related to remote schooling during and after the COVID-19 spring lockdown based on in-depth interviews with families with children aged between 6 and 12. It delves into: (1) the use of digital technology in the context of remote schooling; (2) parent and children's perception of remote schooling and their role in the process, and the changes in parents' attitude towards the role of technology in their children's lives. The aim of the report is to inform policy stakeholders of the practices related to remote schooling that emerged in the home context, to mitigate risks and support positive developments that emerged.

While various studies have explored the impact of Covid-19 on various aspects of education (Blaskó et al., 2021; Carretero Gomez et al., 2021; Di Pietro et al., 2020; Engzell et al., 2021; Wyse et al., 2020), this study is unique because it provides a close look to remote schooling by zooming into European houses, in a cross-national approach. Given the unexpected crisis and the effect it had on education, it seemed essential to quickly gather comparable cross-national data to be better informed of the practices and perceptions of remote schooling at home. The report investigates how parents and children from different European countries participated in and perceived remote schooling, how they were affected by it and what worked and did not work from their perspective.

In the last section, we reflect on the findings and provide policy recommendations for action.

1.2 Methodology

This report is part of the research project: Kids' Digital Lives during COVID-19 Times (KiDiCoTi) that started in April 2020 following the spring 2020 COVID-19 lockdown. In April 2020, the European Commission's Joint Research Centre (JRC) in collaboration with various European research teams developed a research protocol to gather, as quickly as possible, data about how the COVID-19 crisis interfered and disrupted the everyday life of children and their use of digital technology across Europe. A cross-European research network has facilitated this effort. At the time of writing, 24 research centres in 13 European countries, Switzerland and Norway and the research office of UNICEF have been collaborating on this study. It has also benefited from the synergies established between two units in the JRC (E.3 - Cyber & Digital Citizens' Security Unit – Directorate E – Space, Security and Migration and B.4 - Human Capital and Employment) and the interest and support of DG CNECT.

KiDiCoTi examined – using a mixed methodology – how families engaged with digital technologies in the context of remote schooling, leisure time and socialising, during the lockdown period in Europe in spring 2020. The project also aimed to understand whether and how these experiences have affected family well-being and online safety for children. JRC coordinated this research project, which was conducted in 13 countries, namely Austria, Croatia, Denmark, France, Germany, Ireland, Italy, Norway, Portugal, Romania, Slovenia, Spain and Switzerland and with the additional support from researchers in Belgium and Lithuania. The international team jointly developed the research instruments for both the qualitative and the quantitative stages. The qualitative methodology was developed based on a validated methodology for capturing cross-national data on young children's use of digital technology in the home environment (Chaudron et al., In press; Chaudron, Di Gioia, & Gemo, 2018). The KiDiCoTi qualitative methodology partially emulated the methodology of the

Young Children (0-8) and Digital Technology study (Chaudron et al., in press) in its design (e.g., semi-structured interviews with a child and a parent in each family, the icebreaking activities, the multinational team and the two-step analysis that included a national analysis of the raw data and a cross-national one based on the national reports). Moreover, many of the researchers participating in the KiDiCoTi project also took part in the project Young Children (0-8) and Digital Technology.

This report presents the findings of the qualitative part of this research project. Moreover, to offer a more complete picture of the situation, we sometimes illustrate them with data from the quantitative part of the project. Each national team conducted around ten interviews (using virtual platforms or in-person) in their own country with families with children between 6 -12 years old (see Annex 1). They aimed to deepen the understanding of the related issues, and to understand the experiences of the younger children that would have been difficult to be captured by the survey.³

A total of 105 interviews were conducted with families from Austria, Croatia, Denmark, France, Italy, Norway, Portugal, Romania, Slovenia and Spain. Most of the interviews took place from mid-April 2020 to July 2020 with the exception of France and Spain, where some interviews were conducted later on until December 2021. All families received by post or by email: information about the study, a consent form for both parents and children, an activity book (that we called a Time capsule) in which the children could draw and write, and a link to a pre-interview questionnaire with some general questions about the family's technological inventory and use (see Annex 2).

The information sheet provided potential participants, including an adapted version for children, with a description of the aim and scope of the study, a step-by-step description of the interviews (its actors and their role, the material to be used), and all relevant information pertaining to the handling of personal information, anonymity, confidentiality and data security. This information was based on national data protection and European legislation, to which parents agreed in two steps (for themselves and giving permission for their children to cooperate). The information sheet explained the importance of the data that we collected and asked for honest views on the topic.

Informed consent was obtained from parents and children some days prior to the beginning of the interviews. Both children and parents were informed that they could withdraw from the interview at any time, or let the researcher know if anything they said should not be included in the dataset, without any negative consequences should they wish to do so. Data collection followed ethical guidelines and procedures for research set forward by the Joint Research Centre as well as national ethical conditions. In most cases, the interview protocol and instruments were also reviewed by national universities' ethical committees. JRC provided some goodies as a symbolic gift to thank the children for their participation. These were handed to children later.

The activity book served as an icebreaker during the interviews, and the questionnaire formed the basis for the conversation between the researcher and the family. The different research teams collaborated and discussed thoroughly the interview protocol to ensure a common

³ The data for the survey was collected through an online survey in summer 2020 from parents and their child (10-18 years old) in 9 EU countries (Austria, France, Germany, Ireland, Italy, Portugal, Romania, Slovenia and Spain) in addition to Switzerland and Norway) (Vuorikari et al., 2020). Both the survey and interviews aimed to capture a better understanding of children's digital activities during the pandemic and the Spring 2020 lockdown. Different respondents were targeted for the survey and the interviews.

understanding and approach between the different countries, to limit bias and to ensure comparison. Each interview was conducted in the language of the country by a local researcher with an average duration of just over an hour. All interviews included a child and one of the parents.

Because of the social distancing restrictions or lockdown in place at the time of data collection in each country, most of the national samples for the qualitative part were convenience sampling. Nonetheless, a common structure of the sample was agreed among researchers. We are aware that some biases in the selection of families remain which, in terms of heterogeneity, could not capture the whole cross-section of each country's population. Nonetheless, a set of socio-economic, cultural, demographic and geographic variables that ensure heterogeneity were still taken into account both at the data collection phase and during the analysis of the results. Yet, the data is not representative of the European population as a whole or of the countries studied.

Once the national team conducted the interviews, each team transcribed them in the local language and anonymised the data. Then, for each family, local researchers composed a description in English, so called the 'Family portraits', and performed the first thematic analysis at the national level based on a commonly agreed grid (for more about the exact implementation of the protocol of the analysis in each team, see the referred reports). These analyses were reported, together with the family portraits, in the national reports in English that represented the base for this report. A second thematic analysis was then performed by the authors of the present report, who worked on the national reports, available to them in English. Country reports are also available from the participating countries, see Trültzsch-Wijnen & Trültzsch-Wijnen (2020) for Austria; Loicq & Feorc (2021) for France; Johansen & Lundtofte (2020) for Denmark; Mascheroni et al. (2021) for Italy; Dias & Brito (2021) for Portugal; Aliagas, Correro Iglesias, Matsumoto, Espallargas, & Vilaboa (2021) for Spain.

The grid for the analysis was partially deductive aimed to answer the research questions of this report– and partially inductive, being reiterative informed by the data. The analysis was done manually, in Excel. After each country report was coded and the first draft of this report was issued, it was made available to all the national research teams that were asked to provide feedback on it and to contribute with first hand local knowledge on the correct interpretation of the data. Two rounds of such consultation with national teams took place and the final version of the report was validated by all the teams, as specified by Torrence (2012).

All the names used in this document are aliases (provided by the national teams) to preserve the anonymity of the interviewees. During the entire study, all personal data collected was stored with appropriate security and protective measures were taken.

1.3 Strengths and limitations

This report has some strengths that are important to be acknowledged. Firstly, it is a cross-country report that pools together experience from ten countries that are collected with the same methodology during an emergency period. Secondly, it used a qualitative methodology that offers more than the description of a situation, but also explanations and different experiences and practices as experienced by families. Thirdly, it listens to children's voices about how they felt about remote schooling and how they want the future of education to

look like. Fourthly, it uses some already validated theory (Livingstone & Blum-Ross, 2020) and methodology (Aliagas Marin et al., In press), offering data reliability.

It also has some limitations. While ten interviews per country are deemed as satisfactory in saturating the field in researching young children and digital technology topic (Aliagas Marin et al., in press), however, to better understand a more nuanced reality, a larger and more diverse sample at the country level is needed. Secondly, the report offers a partial view on emergency remote schooling, namely parents' and children's view. In order to have a complete picture, teachers' and school staff's opinions should be also investigated. Thirdly, we have to keep in mind that this was a snapshot and parents and children's opinions were timestamped.

Finally, this report does not provide data on how remote schooling is directly related to learning outcomes, but its focus on parents' and children's perceptions and experience is still important for policy design given it gives us a better understanding of what happened at homes. For a more complex understanding of what remote schooling meant, a longitudinal study, collecting data in various moments of the crisis is needed.

1.4 Structure of the report

This report is structured in two parts. The first part offers a general description of how remote schooling functioned according to the evidence gathered through the families that were interviewed, highlighting what technology (hardware and software-wise) was used in various contexts, the place of digital technology in this process alongside with other traditional media, and how schools adapted their schedule. The second part delves deeper into understanding families' perceptions on the use of digital technology for school and the practices that emerged in this usage. More exactly, we looked at the opportunities and benefits parents and children found in the use of digital technology for education, but also at what worried them. We also investigated how the school-related activities were organised at the household level and how parents adjusted their parental mediation strategy to accommodate the new, at times mandatory use of digital technology for school. Finally, the report ends with some thoughts about the future of education and the place digital technology has in it.

2. Remote schooling: A snapshot

The closure of the majority of schools' premises during the first COVID-19 lockdown prompted schools to shift to remote schooling. While the KiDiCoTi survey (Vuorikari et al., 2020) shows many secondary schools relied on digital technology to maintain communication and instruction with their students, there were also others, especially primary schools that hardly used technology. As this was an unprecedented situation, many schools were ill prepared to instruct remotely and use technology effectively for instruction. On the other hand, many found innovative ways and means to stay in touch with their students, with or without technology and provided necessary support for teachers to pursue instruction goals. Over this short period, we have seen the resilient nature of many schools in adjusting rapidly to an unforeseen situation. This chapter provides an overview of the way technology was used in formal, non-formal and informal settings for remote schooling in European countries based on the different practices that took place as reported by the interviewed families.

2.1 The place of digital technology in education during lockdown

Families saw technology as an essential aspect of their daily lives during the lockdown. With very few exceptions, all interviewed families were equipped with multiple digital devices before the lockdown.⁴ The devices varied from smartphones to tablets, smart TV, smart watches, game consoles, laptops and computers. During the lockdown, some families acquired additional devices in a variety of ways: some (either bought or borrowed) printers, some fixed old computers, some borrowed computers, tablets or laptops from relatives or from parents' work organisations, others borrowed LCD projectors to watch film projections or music instruments to learn how to play. Such technologies were acquired either for remote schooling/work or for leisure and socialising with friends. Families more resistant to digital devices also acquired new devices or made an internet subscription, with some renouncing their values on digital devices, to ensure that their children do not fall behind with their education.

In the majority of homes, a minimum of one tablet/computer/smartphone or a smart TV was already available before lockdown. In many families, the number of digital devices outnumbered the family members, on average two to three devices per person, clearly indicating that each family member used a variety of digital devices. A predominance of individual-based digital devices (smartphone, tablet, computer, laptop, etc.) compared to devices that are typically shared in their use (TV) were reported by the families interviewed. The number of digital devices did not always equate with aptness and needs for remote schooling. While many families had various digital devices, not all children had the most appropriate device needed for schooling. For instance, various families used the smartphone as the main technology to connect with the school. However, given the extent of parental involvement, many complained about the tedious processes associated with the use of smartphone for remote schooling, whereby parents acted as intermediaries between schools and their children, receiving and sending work to and from school. Some families, especially large ones, had to share digital devices between siblings and between children and parents, who needed devices to work remotely.

⁴ This finding is based on the families interviewed in this study. The study conducted by Blaskó, Da Costa & Schnepf (2021) found that 14 % of Italian students and 12% of German students do not have internet access at home.

According to some studies that investigated inequalities in children's access to digital technology, these circumstances do not reflect the general situation (Engzell et al., 2021; UNICEF., 2021). In Romania, for example, according to a calculation by the Romanian Ministry of Education in April 2020, 9% of children needed a device for accessing the online schooling, whereas an independent assessment talked about 32% of children enrolled in school not having access to an individual functioning device for accessing the online education (IRES., 2020). The study conducted by Blaskó et al. (2021) also indicate educational inequalities between and within countries in Europe that are likely to exacerbate existing education inequalities, negatively affecting those children who have higher difficulties in learning (Di Pietro et al., 2020). Even in advanced countries such as Finland, where ICT is well integrated in the school system and school education model is based on equality, some increased inequality were observed (Koskela, Pihlainen, Piispa-Hakala, Vornanen, & Hämäläinen, 2020). Some countries' samples in this data set tried to reflect this situation by giving a voice to some families living in poverty (i.e. in our international sample: one family from Portugal, another from Italy, two respectively from Spain, Austria and Romania).

2.1.1 Using a screen for going to school

To attend online classes and do schoolwork and homework, children preferred to use tablets, laptops and computers (when available), while for entertainment the main devices were smartphones, tablets, game consoles and TV. Some families made specific arrangements in order to ensure that their children are using the right device for schooling. For example, a Portuguese mother explained how she had an old desktop repaired, and her son used it for his synchronous classes, as he would get distracted easily without her supervision if he were using the tablet. Another Spanish mother borrowed a computer from her work so that her child could do the homework on the computer, rather than on the tablet. A father from Slovenia, bought used laptops to provide the children in his own street with the necessary devices to do the school work.

The smartphone also played a major role in remote schooling during this period. In many families, especially those with younger children, the smartphone was the main link between school and the family. Various parents reported receiving their children's schoolwork via Instant Messaging (IM) applications, such as WhatsApp or Viber. For some children, the mobile device was the only device available in the household. A Romanian boy used his guardian's smartphone, the only available device in the household to stay in touch with the school. On the other hand, a family in Slovenia decided not to give access to their son to any device other than the smartphone, through which he was sending the school assignments daily to his teacher as they wanted to keep him away from "big screens" also during this period.

Larger families faced more obstacles in ensuring that all their children had access to a digital device for remote schooling. Digital devices needed to be shared and family strategies developed to ensure everyone had access to complete their commitments. The mother of a large Portuguese family reported that it was not easy organising everyone with the necessary device, as they did not have enough devices for all family members to use. Accordingly, the parents gave their laptops to the older daughters, the youngest son used the tablet, while the father worked using the smartphone. As this was not sustainable for the father, they decided to have an old laptop fixed. When there were not enough devices, priority was given to older siblings as reported by a large Romanian family.

Sometimes in Romania, the shortage of devices (because of the low-tech approach of the family or because of the financial shortages, or both) was combined with the lack of internet subscription, as reported by two families of the Romanian sample). In both cases, the parents/guardian felt obliged to get an internet subscription, as imposed on them by the state (through a Ministry Order issued), that was also a burden for the family budget.

“In terms of internet connection, we used to use our neighbour’s internet who shared the subscription with us... when the home-schooling started this arrangement could no longer work. And I had to make an internet subscription. Which bothered me, I strongly believe that we are subjected to a bombardment with electromagnetic fields far above what would be normal... Policy makers didn’t think that a subscription involves a long-term contract, for a year or two; I practically need it for two and a half months, as long as children have to do home-schooling. Therefore, I will be left with a subscription that I will have to pay due to contractual obligations” Romania, a mother.

Some countries like Croatia, Portugal and France opted for an official programme using a national television station, as a way to avoid exclusion. However, not all students found this useful for their work. A girl among the oldest of the Croatian sample reported that she would sometimes fall asleep on the couch while watching the school programme. Another boy of similar age also from Croatia commented that he found the official school programme on TV uninteresting and non-stimulating, mostly covering content they had already covered at school. Such educational TV programs ran during the lockdown in Romania too, most of them addressing older children who were taking their national exams in summer (grade 9th and 12th, that is, 14 or 18 years old students). Even so, surprisingly for the researcher, none of the parents or child referred to them. In France, some families followed the programmes, whereas those who did not argued that their children already had too much schoolwork to do. In Portugal, the Portuguese Ministry of Education launched a TV open-channel programme called #StudyatHome. Many teachers assigned students the task of watching this show, particularly for those in Primary schools. Referring to this TV program, three boys of the Portuguese sample hated it, saying it was extremely boring, while one girl mentioned that she enjoyed it. In Slovenia, the national TV decided to offer school-related content via various documentaries and educational program schemes as an addition and aid to the official school content. Two children in Slovenian interviews reported watching it occasionally.

2.1.2 Does the size matter? From a smartphone to a bigger screen.

A main concern parents had regarding the device used for school related activities was the size of the screen. Parents preferred bigger screen for better visibility (therefore a lower pressure/solicitation on children’s eyes) for children. One mother in Portugal felt it was better for her son, among the youngest of the sample, to use a bigger screen for his online classes, so she connected the computer to the TV. Consequently, the young boy spent a lot of time using the TV for school, and then for entertainment. Other mothers ⁵ raised similar concerns:

“...she was more on it [digital technology] and it was too much for school. The tiny letters on the smartphone and squinting in this [the screen]”. Croatia, Mother of an 11-year-old girl.

⁵ The interviews were conducted with 82 mothers, 22 fathers and 1 grandmother.

Despite these concerns, many parents still used their phone as the main device to access their children's schooling work and to keep in touch with teachers or classmates. This was mainly when IM applications were used by the teacher to communicate with the parents or to send worksheets (on WhatsApp or Viber groups). At times, even if the children had smartphones, it was still the parents who would receive the schoolwork from the teacher on their WhatsApp. This was the case for example for an Austrian family. Both children and parents reported a digital tiredness in relation to this mode of remote schooling, as sometimes hundreds of messages would pile up daily on these groups and they had to curate them constantly being afraid of missing some important messages from teachers.

When synchronous classes were held, students were more likely to connect through a laptop, a tablet or a computer (bigger screen), when these were available. In the absence of such devices, when children had to share devices with their siblings or other family members, mobile phones were also used for synchronous classes.

2.1.3 Old school technology: Mixing paper and screen

In many countries, schoolwork was still based on paperwork and the use of books, especially for homework. Teachers would send material for children to print or copy and to work out on paper, rather than on screen. In France, an eight-year old girl checked the computer or the phone and did her work on paper and at times, she had to send the work produced by email; the same happened in other countries:

"The digital aspect of home schooling was that tasks were distributed digitally rather than done digitally". Norway, about a 6-year-old girl.

"He didn't need the smartphone to do homework. Just getting assignments in Viber and then returning them via a picture. Rarely, he would get a link to a mathematical game". Croatia, a parent of a 9-year-old boy.

In other countries, paper was the main medium used for remote schooling as for instance, primary schools in Austria. In lower secondary, some classes were moved online and learning platforms were partly used. This was the decision of the teachers, given many families and teachers were not properly equipped with digital technologies. Also, overall, the educators were sceptical towards children's use of digital technology. Video conferencing and video chat were mostly used for extracurricular activities, also for primary school children.

For example, a seven-year-old's family would receive a packet of printed worksheets from the school in person. When the child completed the exercises, the family would return it to the school to get another packet. The mother found these worksheets extensive and would have liked her daughter to have more online remote schooling. She gave us the example of the English teacher, who sent videos to her students, whom she found more productive. Similarly, and still in Austria the schooling of a ten-year-old was based on paper worksheets and assignments. This work required about three hours daily.

One teacher in the Croatian sample sent printed work material to the house of all the children of the class thanks to the goodwill of one mother of the class. The children had three weeks

to complete the assigned task and would return it to the teacher through the same mother as factotum. Every three weeks work periods the teacher would send new studying material. In the family reporting this experience, both parents and their 8-years-old daughter liked this approach, because the girl was able to organise her learning and writing homework over the three work periods autonomously and remote schooling did not involve digital technologies. In addition, the deadline to complete the work was long enough, so there was no additional stress.

Another obstacle encountered by many families during the lockdown was the difficulty or failure for their children to complete the worksheets sent by the teacher on the computer or on the smartphone. Many families reported feeling the need to buy or borrow a printer during this period. **The printer** was useful for two main reasons, although not everyone afforded one. On the one hand, some parents worried about too much screen time and were willing to offer a paper-based alternative to children, on the other hand writing directly in a digital PDF document (the main format used by teachers) was considered difficult and time consuming by parents:

“The printer was helpful. Because the first two weeks or a week, until we got the printer, we had to struggle to write in PDFs, directly on the screen and it was very difficult. They wrote with their fingers on a tablet...we didn’t use the laptop for such tasks, but we preferred to write on the tablet with a finger. Otherwise, on the computer, I had to click many times for each and every letter... I learned that too, but after that, when I brought the printer from home it was much easier”. Romania, a mother of two children.

“With the 9 to 10-year-old, I’m not sure it’s the... Well, sometimes they printed out index cards, even if not everyone had printers either, it wasn’t easy... but I think they need to write and read, and the tablet, finally, it... I suppose it’s going to be the homework that’s put on line, but I still hope that most of it will be on paper and given to them in class”. France, a mother of a large family.

At times, the children and families raised issues such as these that at face value may seem insignificant that, combined with other obstacles, created further frustration with remote schooling. For example, an Austrian student told the researchers that she could not do some artwork because her printer was black and white and the work required colours to complete. While a solution was found, by working on her father’s laptop for the school exercises, it was not as straightforward as working on a printed worksheet. In addition, given the multiple approaches used by most schools, parents found themselves comparing the different approaches adopted by the different teachers. Similarly, parents with multiple teachers compared teachers’ instruction mode between siblings. Since many parents were frustrated in general with remote schooling, many complained about the instruction mode undertaken by the teacher and felt that another approach would have been more effective.

2.2 Lost in technology navigating among platforms

The technology used for remote school varied substantially, from the use of instant messenger (IM) to video-conferencing, email, games, quizzes, virtual learning platforms and TV. In our sample, the video conferencing programme Zoom seemed to be the most widely used technology used for synchronous remote schooling across the different countries. Other video conferencing systems mentioned were Google meet, JITSI meet and Webex. Some teachers also used learning platforms for their classes. The platforms mentioned were Google Classroom, Moodle, e-Assistant and BlinkLearning. Kahoot, a game-based learning platform and Padlet, an online bulletin board were also mentioned. Some parents also reported downloading new education apps recommended either by their children's teacher or out of their own decision.

A classification of the technology mentioned by our sample is provided in Table 1. For reasons, such as children's young age, lack of technological infrastructure or lack of digital competencies of teachers, a good proportion of the school-related activities were asynchronous. Children were given tasks that they had to do (e.g., filling in sheet of papers with exercises, taking pictures or creating videos for various projects, reading a text) and send a proof of the output to teacher for evaluation.

In various countries, IM applications were used as the main technology between schools and families. Teachers sent the work through these applications to the parents' mobile phone, mostly the mothers'. For many, this entailed the student/parent copying the work from the mobile to a notebook and then taking a photo of the work and sending it again through the application to the teacher, who would send it back again with corrections that had to be completed. Many families found this process tedious and cumbersome.

Email was another point of entry for remote schooling. Many teachers communicated with their students and sent them work using their parents' email accounts. It was interesting to observe that in some families, despite the existence of a laptop or a computer, the children would still use their parent's smartphone to access the homework (as reported by some families in Croatia, Romania and Slovenia).

In some cases, the school website was used to inform the students about the work they had to do. For example, an eleven-year-old boy reported using the school web page to access foreign language assignments. Although this process was more official than sending the homework on an IM platform, when it happened in this way, remote schooling kept being mostly about communication rather than about proper teaching. Another example was given by a ten-year-old Slovenian girl whose school published daily assignments on a specifically designated subpage on the main school web page, structured by grades and subjects (e.g., mathematics, language). Thus, the prevalent process was based on technology whose affordances were mostly communication, as opposed to instruction. For such cases, the role of parents or carers was indispensable, not only for intermediating between teachers and children and conveying the tasks from the latter to the former, but also for supporting the children with these tasks and not seldom in teaching new content required for children to complete the school tasks.

It is not surprising that when synchronous activities happened, most of the parents praised them, acknowledging that teachers did their best in really 'teaching' children during these activities. For such activities, video-conferencing platforms were used. Some parents had the perception that since teachers decreased instruction team, the amount of time students

spent learning seemed to be much less than if students were attending onsite schooling, as was also found by other research (Hamilton et al., 2020).

Various students reported that the first few classes were chaotic, but were later improved:

"At first it was a bit difficult because there were a lot of people and was difficult to understand the teacher (...) initially I felt awkward because I hadn't seen my friends for a long time". Spain, an 11-year-old child

In Portugal, the mother of 11-year-old girl also felt that the first weeks of school were disorganized, as the teachers were experimenting with different platforms. The daughter needed her mother's help to cope with all those novelties. After Easter, the school adopted Microsoft Teams and the girl became more autonomous in managing the new technological tools as the workload became more stable. Few students mentioned that a learning platform was already in place before the lockdown, but it was hardly ever used for instruction, it was more like a communication tool:

"In fact, the digital workspace (DW) already existed before the confinement but we didn't use it at all, and then, of course, it was put there... I know that at the beginning of the year, we were given access to the DW, so I imagine that she [boy's teacher] was loading up content. So certainly not as complete but... maybe photos of activities, things like that. But in any case, we never went there". France, a father of an 11-year-old boy.

As we explain in Section 3, when the novelty wore off, many students found themselves bored, not able to stay focused and unmotivated. Some students, similar to an interviewed eight-year-old in Spain, did not like video calls for school activities, as he preferred to do his work autonomously at his pace. One family in France and another in Slovenia raised security concerns about the use of Zoom. They were worried that their work data could be hacked. As a result, they did not allow their daughters to use a webcam even for remote schooling, because they did not want people to see their home.

Although many times families across the countries reported almost traditional teaching activities (mediated by the screen), there had been cases in which teachers tried new approaches, sending links to educational apps, videos or quizzes. In general, these more playful and digital learning activities appealed better to children. Students reported enjoying learning through mathematical games, quizzes and watching videos sent by the teacher (e.g., as reported by some families in FR, DK, HR & RO). One Slovenian girl mentioned her school provided links to interactive learning material, provided by the publisher of the workbooks 'Radovednih pet' (The Curious five), and movies/video clips on specific themes, provided by teacher.

In some schools in France, teachers also organised synchronous activities, so that children could talk with each other. A girl, among the oldest interviewed in Denmark, also explained that apart from attending her classes on Teams, together with her friends they created a separate group also on Teams, where they chatted and also did their homework together. Another girl, also from Denmark and slightly older, also mentioned that when school reopened in Denmark, she continued using the Team group to work collaboratively. Sometimes, parents created synchronous meetings so that children could talk to each other, to satisfy their need to interact with other children their age. Also quite a number of interviewed children in Slovenia, despite having predominantly asynchronous school activities, mentioned

they used ZOOM or some other video conferencing platform sessions just to socialise and chat with their schoolmates.

Table 1: Classification of technology mentioned for remote schooling in this study

Type of platform / app	Examples	Type of Communication / Instruction	Parental involvement
Learning platforms	Google classroom Moodle	Interactive platforms designed to manage student and teacher communication. These were mentioned by older students	Low
Video Conference Software	Zoom Microsoft Teams JITSI Meet Google Meet WebEx	Often, one-to-many broadcasting model, although interaction is allowed.	High for younger children
Game-based learning platforms	Kahoot	Interactive - teachers used it to create quizzes, but students can also create their own quizzes.	Low
Learning websites, portals and boards	Le project Voltaire	Grammar and spelling website	Low
	Sofaskolen	Videos for all primary children across subjects for Sofaskolen	
	Radovednih pet	Interactive platform for language, mathematical, and other subjects	
	Matematikfessor	Digital Math portal	
	Padlet	A digital board with different post-its and link that teacher can share with the students.	
Videos	YouTube TikTok	One or many-to-many communication. Students used videos to learn about things, but also created videos to share their projects or simply as a form of entertainment and socialising with friends. For sharing their creation, children mostly used Tik Tok, whereas for learning (tutorials), YouTube was used more.	Low - but require parental mediation (e.g. approval)

Instant messaging	WhatsApp Viber Skype	One-to-many instant messaging, where groups can be created. Various parents mentioned that they communicated with their children's teachers through IM and also received worksheets via this mode of communication. For older children or in countries where IM platforms are very commonly used, there was a very active class group with children and teachers too.	At younger ages, high as parents act as intermediaries
Communication by email	Email	One- to-many communication, often with the teacher sending work or worksheets via email to the parents to the students.	High if the email is sent to parents. Low if the email is sent to students.

In Denmark, a number of innovative incentives emerged. Within four days of lockdown, a group of teachers came together and created 'Sofaskolen' (couch school), whereby teachers taught online every morning on YouTube. These videos were aimed at students on every level of primary school (grade 0-9) and covered all subjects on the curriculum. LEGO foundation eventually funded this Sofaskolen and later teamed with an educational publisher who now hosts all its content. Sofaskolen continued providing daily shows until children went back to school. Other institutions, museums and associations also provided educational content through different media platforms. The tropical zoo, Randers Regnskov, was live on Facebook every day of the week, showing and telling about the animals in the zoo and other phenomena in nature. Coding Pirates, an after school technology programme, provided ideas for coding activities for children to do at home. LykkeLiga, a handball league for children with disabilities, did online exercises live on Facebook every Monday, that were watched by hundreds of thousands of people.

2.3 The school schedule

If in a normal, face-to-face education, the school schedule is more or less homogeneous for most schools, during the first lockdown period the situation and workload varied hugely across countries, regions and within schools themselves. Sometimes in the same country (e.g. Croatia, Slovenia), some students and parents complained of an over burden of schoolwork, while others found it undemanding. In general, younger students had less workload, but required a lot of parental intervention, as many did not know how to connect to the applications used by their teacher. Within such a volatile context, an important question was raised: who should decide how much work should be done and how it should be instructed effectively?

When teaching activities happened in the 'traditional' style, in a synchronous setting, the duration of the session varied hugely, often adjusted to children's age, with more work given to older students. As one Romanian mother explained:

“And then they started to use WebEx. But only twice a week for one hour and a half. It’s true that they were in first grade so... nonetheless, the teacher did properly teach them during this time. I mean, she really taught maths”. Romania, a mother of a 10-year-old boy.)

“The first few weeks were very difficult... There was a lot of homework to do. There was a lot of homework to hand in, more than in normal times, so it was very complicated. Sometimes there were 3-4 assignments to hand in during the same day...I even sent an email to the teachers, asking them to slow down a bit on the homework, because... it wasn't possible. We were drowning in homework”. France, a mother of a 9-year-old girl.

Digital tiredness was an issue raised by both parents and children. The number of hours children spent using technology increased exponentially and children had little say or no say at all over how many hours they used technology for schooling. Older children were more pressured to use digital devices for remote schooling for longer periods. For some older children, the school timetable just shifted online, without taking into consideration attention span, digital tiredness and effectiveness of using this mode of instruction.

An eleven-year-old in Portugal, for example, had online classes using Microsoft Teams every day, most of them during the morning. Then, she had homework. She complained about spending 5 to 6 hours a day in front of the computer just for school purposes. In her view, the teachers sent homework without any organisation between themselves. She clearly stated that she did not like studying from home, and she hoped to go back to school for the next school year. Even though she really likes using her smartphone, when schoolwork was over, she was so tired of screens that she preferred playing with her toys for a while.

In contrast, a six-year-old girl did not have any schoolwork or interaction with her class. She reported that she would have liked to get the material from the preschool and the books she had already started there in order to monitor her progress. Similarly, a Danish girl of the similar age only had contact with her schoolteacher once, when the teacher sent a video with a bedtime story.

Sometimes parents reported that the ‘main subjects’ were properly taught according to the usual schedule, whereas others report only a ‘formality’ of teaching activities, for 15 minutes daily. Some families reported children having had regular meeting schedule each day, with some meeting twice a day (e.g. as reported by some families in DK, NO, RO, ES, PT). In Portugal, many families reported considerable workload for their children. For example, an eleven-year-old child had synchronous classes from 9 a.m. to 1 p.m. and from 2 p.m. to 4 p.m. and homework to complete afterwards. A Slovenian mother complained her eleven-year-old son often spent up to eight hours for schoolwork. Most of the workload was asynchronous and digital tiredness was not the real issue with him. She noted that her son had much more schoolwork than if he had been in school. In Denmark and Norway, the schedule seemed more reasonable and flexible, driven by children’s needs. For example, one the oldest child interviewed in Denmark had to check in at Microsoft Teams every day at 10am for one hour of schoolwork, and then he had one hour off and then another hour of schoolwork. In Norway, the appointments with teachers were based on students’ request for help with learning activities.

2.4 Shift of technology from leisure to school work

During the pandemic, the shift to online and remote schooling led to yet another change. Many children were required to use the same technology that previously was a space dedicated mostly for entertainment. This had some implications on their attitudes and their parents' towards technology.

Both children and parents differentiated between a lucid and academic use of the digital devices. The displacement of digital devices from mostly leisure to academic use caused some discrepancy in children's motivation and expectations. Many children were eager to use technology for entertainment, to be creative and to learn. Despite such eagerness, some students were surprised to find themselves bored and unmotivated during remote schooling. Parents also reported that their children found it harder to stay focused when taught online.

A possible explanation for such discrepancy may be related to technological affordances. Many children were already familiar with digital devices and the possibilities they offer. Bringing such technologies to the school environment did not always match up to their expectations and required a mental shift, in terms of the use given to a specific device. In general, younger students showed more enthusiasm towards the use of technology for remote schooling. For many this was the first time they were using this type of technology for learning and technology was used in ways that are more lucrative. In comparison, older students who were already active users of a variety of digital devices and were fully aware of the discrepancy of technological affordances used for entertainment and for schooling. This is a major challenge for online and blended learning schooling, in a context that is highly dominated by strong interactivity, stimulation and interactivity.

The use of technology, both for entertainment and academic purposes, in combination with the confinement accumulated screen time, as many children opted for digital devices as a means of entertainment and socializing. Parents also accentuated a difference between technology use for schooling and for entertainment. Their concerns were relating to having to re-negotiate parental mediation and apply different kinds of rules depending on whether their children were using technology for schooling or for entertainment. This notion will be discussed in detail in the next section.

3. Families' perceptions and practices related to remote schooling

In this section, we will present the families' perceptions and practices related to remote schooling during the lockdown. Generally, parents interviewed in this study perceived technology as an important tool for learning and the development of digital competences as indispensable for the future of their children. Overall, they encouraged responsible use of digital devices. Despite the overall positive perception of digital devices, when it came to remote schooling parents had a more reluctant view on its mode of operation and effectiveness. Parents confessed that their high involvement in remote schooling increased stress levels and some guidance on how to manage the use of technology would have been beneficial. Many shared contradictory concerns, related to the increase of technology use by their children and the negative effects it might have on children's health, but also about their children's needs to stay in touch with their friends through technology. In this respect, we observe a change in the way parents mediated their children's use of technology.

In the eyes of children, digital technologies were seen as valuable devices, offering a great array of different possibilities for learning and as part of their future schools. Yet, they also expressed mixed feelings about remote schooling. While in general, they were enthusiastic to use digital devices for learning, children were less keen to use digital devices for remote schooling. Many found remote schooling less engaging than face-to-face instruction and were surprised to find themselves losing interest, not able to pay attention and stay focused. They mostly missed the interaction with their friends and their teachers and the classroom environment. This created some confusion in some children, as their previous experience with technology was so different from that of remote schooling. Others felt overwhelmed by the workload and the organising of tasks. At the same time, most children showed great motivation to learn new skills, especially digital skills during this period, clearly showing that the majority are not only consumers, but also producers of media content.

A general digital tiredness was observed, as both children and parents found themselves using technology for long hours. Many children clearly stated that they prefer face-to-face learning and looked forward to going back to school. Overall, parents also stressed the desire for children to be able to go back to attend on site schooling.

3.1 The potential of technologies for remote schooling: an obstacle transformed to thousands of solutions

"It has now become clear that we cannot live without digital technology". Croatia, a mother of an 11-year-old boy.

In general, many families expressed positive attitudes towards digital technology and online activities. They perceived digital technologies as valuable tools useful for learning. They understood that the development of digital competencies for the future of their children was indispensable and appreciated their children's ability to learn through these tools, especially during the lockdown. As one Italian mother reported, technology is a lifesaver today and the issue is no longer, whether it is good or bad, but how you use it.

3.1.1 Improving digital competencies

The European Digital Competence Framework, also known as DigComp, offers a tool to improve citizen's digital competence.⁶ Today, being digitally competent means that citizens need to have competences in all areas of DigComp. One of the foundation skills of the DigComp is gaining autonomy, with guidance where needed. During this period, many children reported becoming more autonomous in the use of the digital devices, reinforcing their previous knowledge and learning new uses of the devices during lockdown. To learn how to operate various devices or install specific software, children turned less to teachers for guidance, and more to parents, siblings, peers and neighbours or watched online tutorials.

"Before, my brother used to do it, so I didn't know how to do it. Now I can do it by myself". Spain, a 7-year-old girl.

For some children learning these operational skills and enlarging their previous usage entailed development of more complex ICT proficiency level, that for them was a form of problem solving. Their lack of knowledge before the lockdown was due to the lack of that specific need.

"I learned how to use Zoom, Classroom... before I didn't know them because I was not interested in them. It wasn't hard. It lasted three minutes". Romania, a 10-year-old boy.

The process was not always as straight forward. Some children reported difficulties in learning to easily navigate through these new educational platforms, especially when teachers used more than one platform. However, these types of obstacles were overcome in a joint effort between children and parents. For instance, several mothers from a French twelve-year-old girl class worked together to better understand where the documents provided by teachers were, given that teachers used different platforms; children also helped each other with the homework.

Many parents mentioned that their children acquired more self-confidence in their digital skills as they became more autonomous in accessing and using learning platforms for remote schooling. Children themselves, boys and girls alike, reported learning how to write and send emails, and some even learnt how to create and administer an email account. An eleven-year-old girl explained how she has learned to use the computer autonomously (i.e. sending an email, downloading an attachment (ES07)). The mother of an eight-year-old child explained how before:

"...he never had access to the tablet, alone, in fact. Now, as he had to go on the Internet to go to his class Padlet, where he had his questionnaires online and things like that, well, he went on the internet, he clicked on the links that took him to sites...". France, a mother of an 8-year-old child.

A Spanish father, who is a high user of technology himself, emphasized the importance of children's autonomy in using technology. For him, the fact that his son learned how to use and administer his email and use Moodle independently for school was very important. He also encouraged the boy to use YouTube and Google when he wanted to know something, to

⁶ <https://ec.europa.eu/jrc/en/digcomp>

learn how to solve his own queries. Due to this autonomy, the father only spent one hour or less daily helping the child with his schoolwork. The boy himself reported that one of the main things he learned online during quarantine is how to do tricks in Fortnite, his favourite videogame.

In Portugal, a ten-year-old girl also proudly reported her accomplishment in learning how to use the email, the computer keyboard and Microsoft Teams. She felt more grown-up. Some students also reported learning how to use the printer machine and how to scan documents, whereas some parents were especially happy with the switch their children had done from touch screen based devices towards laptop, deemed more suitable for schoolwork (see also the first section of this report). A nine-year-old boy reported enjoying doing his schoolwork on the computer as he found writing using a keyboard much easier. He was happy that he is no longer the slowest in class. Thanks to the computer, he became the second fastest:

“My hand hurt, and I was the slowest in class to write by hand. I am very happy that we are using the computer to write now”. Denmark, a 9-year-old boy.

Most of the time, a mix of competences were involved in children's usage of digital technology and they came naturally for children. For example, as reported by an Austrian mother, her son acquired some creative and information competences (i.e. knowing how to manage his documents) by himself, grasping the logic behind some operation and advancing building on his previous knowledge.

“Then he opened Word, wrote a few sentences and saved the file with a proper name. I was surprised and asked him: where did you learn this? He answered: this is logical and common sense”. Austria, a mother of a boy.

Informational skills were also mentioned as being improving during this period. An Italian mother explained that despite the initial difficulties, her daughter proved to be a quick learner and particularly enjoyed the ability to conduct online research to complete tasks assigned by teachers. Students also spoke about learning how to search for information or videos using searching engines. Moreover, many discovered the wide options offered by video for learning both formal and informal skills (see more on this topic in the next subsection). Parents also reported having important conversations with their children about the proper use of technology.

In developing their informational skills (more exactly searching and managing their digital content), children looked not only for school information online, but also for entertaining content. During the lock-down, a young Austrian girl used her tablet to listen to children's audio dramas (streaming and installed) and sometimes also for educational apps and games, learning to navigate in the list of her audio files as well as on the streaming platform the family subscribed to.

On the other side of the spectrum, there were children who did not use any digital technology for their schooling. For some, this was not due to lack of skills, but to the school's policy to digitally reach children through parents. For example, a ten-year-old girl received her work on her father's mobile WhatsApp, but had no video chat with her teacher. Her remote

schooling was reduced to two hours daily of completing the work sent to her father's WhatsApp, mostly worksheets. Ironically, the girl owned her own smartphone and showed a high level of autonomy and autoregulation in using digital devices in general, so much so that her father imposed no time restrictions. However, the teacher still sent her schoolwork to her father's mobile phone. She told the researchers how she has set her own limits for watching videos on her smartphone because she knows when it is enough. She reports that her father only argues with her to stop watching when they want to go out.

In some families where digital technologies were less approved, children developed fewer digital skills. For example, an 8-year-old girl has very few digital skills and uses the tablet only to watch movies when she is at her father's house (who lives in another house). In her mother's house, she only watches TV:

"The two younger ones [8 and 10 year olds] do not use the laptop or the smartphone and I do not really like them to start with it. We only watch TV. We have three TV sets, because I want to watch the program I prefer". Austria, a mother.

In the interview, the girl herself mentioned that she believes that the internet and computer are not appropriate for children of her age due to potential risks. When asked which media she would like to use if she could decide on her own, she responded *"no digital devices at all"*.

3.1.2 New ways of learning

Children reported learning new things and discovering new ways of learning during remote schooling. Children spoke enthusiastically about project-based homework, learning through digital apps and learning through videos. An eight-year-old girl explained that she liked this way of schooling instead of studying several subjects every day, it was up to her to decide what she would learn every day. This allowed her to self-organise her learning and define her own learning path. For example, during the lockdown period in Croatia, she learned to type on the keyboard for fun, not because someone asked her to do it. An older boy from Slovenia emphasized that he especially liked creative outdoor learning with his family - going out in nature with mother and brother and learning stuff for school.

Other students reported finding fun and creative types of homework motivating. For example, an 11-year-old girl reported having to create a commercial for local food products. On this occasion, she prepared the products and created a costume and her mother filmed her presenting her work. An Italian girl enjoyed particularly the ability to conduct online research to complete tasks assigned by teachers while another girl from Norway enjoyed creating a book with her mother in her second language. Various students reported starting to play an instrument during the lockdown and others learning how to read. Another Croatian boy found solving quizzes, creating Power Point presentations and recording himself while performing some activities to send to the teacher as a way of learning. Self-learning was a major part of remote schooling.

The attitude of parents towards technology seemingly had an influence on how children used technology. When parents showed a positive attitude towards technology and provide a

supportive environment, children tended to be more active and at times creative with technology. A Croatian mother, who reported having a positive attitude towards digital technology, spent a lot of time researching and preparing in a fun and interesting way for her children. As a result, the children used digital media in a very creative way with a high learning potential. Parents of another Croatian family welcomed technology as a useful tool, particularly appreciating their daughter's learning ability, and newly acquired homework autonomy. They even started asking her in cases of technical problems. A young Danish girl who lives with a "gadget geek" as one of her guardians and her mother who is also very open to technology created a corona-diary as a digital book with the help of her mother. The diary consisted of pictures of different family activities for each day in lockdown. In the interview, the daughter and her mother used screen share to show the digital book to the interviewer.

One positive effect of online schooling expressed by families is that children got better at managing their time and became more autonomous. This confirms results from the quantitative results from the same KiDiCoTi study that found that between five in ten (ES and CH) and seven in ten (ES, RO, IT, SI) parents from different countries agree that during the lockdown their children gained more autonomy in using digital technology for school activities (Vuorikari et al., 2020). One Spanish father explained he was very proud that his daughter used technology to manage her time and learning. If there is something she does not know, she looks into YouTube videos and self-teaches herself (e.g. she learned how to tight her shoes on YouTube). He trusts the management skills of his daughter because she has demonstrated to him that she is aware of the risks as well as the benefits of technology.

Some parents also found that having the school online also meant that their children could get better rest. For example, a Portuguese mother explained that she found having the classroom "just one click away" allowed her children to sleep more and rest better.

3.1.3 Non-formal learning & informal learning

During the interviews, both parents and children referred to non-formal and informal learning that took place during the spring 2020 lockdown. Similar to formal learning activities, non-formal learning activities (activities that take place outside formal learning environments but within some kind of organisational framework), such as extracurricular activities and after school activities, also shifted online during the lockdown. Children continued to attend various extracurricular activities during lockdown from sports, to learning an instrument, ballet, chess, robotics and English classes. For example, a six-year-old girl from Austria had no schoolwork, but still had her ballet and violin lessons online. She played and practiced the violin every day and had violin lessons through video calls on her mother's smartphone. At first, she was shy to do her classes online, but once she got used to it, she was happy with this mode of instruction and was also happy to record videos of her playing the violin and sending them to her teacher.

Not all activities worked out effectively remotely. Some families found that these activities required too much engagement from their side, especially for younger children and hence, they finally stopped the activity. Some activities, such as instructing dance were hard to transpose online. Both a young Austrian (who continued to enjoy violin classes online) and an Italian interviewee found their online dance class boring and missed the human interaction with their teachers and their classmates of their studio classes. One of the child also reported

suffering from “video call fatigue” prompting him to turn off his camera and leave the room while he was practicing with his dance teacher. Although the other child did not enjoy the online dance video classes, she still wanted to practice, so her parents bought her preschool workbooks. The girl was happy to do the exercises in those books because she really wanted to learn. Another Italian respondent found attending guitar classes online as “weird”, because she could no longer play the guitar with her classmates, but on one-to-one tutoring sessions.

In general, after school activities tended to be more creative and innovative with the use of digital devices for the emergency remote teaching. Given these activities were based on parents’ payment, the incentive to ensure that the students would remain in the activity was very high. As with almost every class, music classes for example followed the trial-and-error system until the best approach was found. An Austrian boy reported keeping in touch initially with his trumpet teacher asynchronously (the teacher sent exercises by WhatsApp chat and the boy sent audio files back), but soon they switched to using video calls). A Croatian girl used email for remote schooling, but Zoom for her private English classes. A boy in Romania used a sound system that his family already owned (although it was not used previously for this) for his remote private music classes:

“During the lockdown, I did my piano classes online, on the laptop. We have a special piano system. We have a mixer, we put the piano in the mixer, the headphones and the laptop and it works. And the teacher hears both the sound of the piano and me through the microphone”. Romania, a 10-year-old boy.

Despite delay and poor sound quality, a young Danish girl found she learnt more notes and songs in her online cello lessons, an extra-curricular activity, than when she was taught on-site. She was annoyed that none of the school activities had a similar digital alternative. She proudly expressed:

“I have learnt how to play the blues”. Denmark, a 7-year-old girl.

Another mother in Spain explained how her six years old daughter learnt various things such as drawing manga from online videos, content about Nordic mythology by reading books and making videos with her brother using images, clips, audios, emojis and effects. Such activities helped her also to improve her reading skills and her technological skills. Indeed, various families with children this age reported that their children have improved their reading and writing skills during the lockdown period (as examples reported by families interviewed in NO, RO, ES & SI).

A young Danish girl reported having only once contact with her teacher during the lockdown. Such lack of interaction was replaced by an interaction with her grandfather, where she often read an eBook aloud for him through a videoconference. Although she already knew how to use the iPad, according to her mother, during the lockdown she got better at handling this device. For example, she learned how to turn the iPad in such a way that she could see her granddad simultaneously with her reading out aloud from it. As the girl did the schoolwork very rapidly (completed three educational books from her school within two days) she made use of different digital educational sites on the internet, such as Randers Regnskov, E-reolen Go and Sofaskolen. She also built figures with modelling clay using screenshots from one of her favourite series. A French boy and his brothers also used technology to learn something

else, especially when they were bored, for example, watching videos on free-style scootering or techniques for drawing comics.

For some children, the increase of free time and down time also meant that they could pursue learning that they enjoyed. This was the case of the Austrian boy who loves playing the trumpet and during the lockdown improved his musical skills because he had more time to practice. He practiced with his dad and had an online class with his teacher once a week. A Spanish boy learned how to multiply using a game console (Lexibook). He also improved skills like drawing or making rap music, by watching video tutorials and making his own videos. A girl from Slovenia learned the programming skills to code various mobile applications in the digital online school.

3.1.4 Video as the new teacher

In the absence of a teacher, families turned to video platforms when in doubt or wanted to self-teach themselves. Various children and parents reported searching for video tutorials when they did not know something or wanted to learn how to do something, such as installing a new application. In some schools, teachers themselves prepared videos for their students, in order to explain concepts. This format was preferred by some teachers as it allowed children to access the videos whenever they wanted. In the absence of a teacher's presence and synchronous instruction, online video tutorials became the new teacher allowing students to become more autonomous in their learning. Parents also claimed to refer their children to video platforms if they were unable to help them or if their children wanted to learn a new skill. Children used videos to search for information for their school projects, to learn new technology, or a new skill, to do crafts, to learn how to play an instrument, to learn how to cook and to learn new tricks in their favourite online games, amongst others.

A young Danish boy, for example, declared himself as "world champion at watching YouTube". He mostly watched videos of the Danish Minecraft YouTubers 'Mikkel & Emil'. His mother compares his fascination with 'Mikkel & Emil' with "idolisation on par with pop stars". Watching videos to learn how to play better videogames was a practice mentioned by various children. An older Danish boy also watched YouTube to get new inspiration to build in Minecraft.

Children were not only consumers, but also producers of media content. They spoke enthusiastically about learning how to create and edit videos. Many children used videos for school projects to share with their teacher and their classmates. Projects varied from singing, to exercising, to presenting new material learnt to share with classmates. It is worth mentioning here that when creating such videos, children sometimes get inspiration from their preferred YouTubers, in the topic they choose either to stage, or in the way of doing it. In Spain, a girl, created videos with recipes with her uncle who is a professional chef and he would upload them to his YouTube channel. The mother allowed this because it was a family activity. The daughter wishes to become a YouTuber and be able to upload her makeup and skincare videos, although her mother does not agree with this, and hence, the daughter plays pretend being a YouTuber in front of the mirror. Many children also created videos to teach other children how to play their favourite games. A young boy in Denmark made more than 150 videos for TikTok and over 10 videos on YouTube about him playing.

In Denmark, two brothers produced 19 episodes of a podcast called 'Corona for børn' (Corona for kids) and the National Museum of Denmark teamed up with the film festival BUSTER and encouraged children to send video footage of their daily lives and activities. The material gathered formed the basis of a documentary, which featured on the BUSTER festival in September 2020.

3.2 Family worries

3.2.1 Long use of technology and addiction

Many parents, especially mothers, shared their concern about their children spending too much time using technology both for schooling and for leisure time and the negative consequences of excessive use. Parents raised issues related to addiction, aggression, distraction and a lack of focus, social skills, imagination and capacity to solve problems. Others were worried that the number of hours spent using technology exacerbated children's physical and mental health.

The number of hours children dedicated to technology was high, especially if added up to the technology used for schooling, ludic activities and for socialising. Families reported that their children spent between one to five hours doing school related activities, with an average of around two to three hours daily. Overall time using digital devices varied from one hour to eight hours. Responses from the KiDiCoTi survey found that children reported an average of 3.6 hours daily using digital devices to do school work or homework and double that time (around 6.6 hours) for entertainment and schooling. Duration of time spent daily on school activities using digital devices varied from 4.4 hours (in Portugal) to 3.2 hours (in Ireland) (Vuorikari et al., 2020).

Most parents engaged in different practices to ensure that their children were not spending an excessive amount of time using technology. Many proposed outdoor or sports activities, family activities such as cooking, doing crafts, playing board games and watching movies together, as a way of being together and learning together. Others gave in and let their children use technology to entertain themselves.

A father from Spain reported feeling afraid of his daughter's extreme use of the tablet. He reported how she just sat on the sofa for hours creating TikTok and YouTube videos. He felt conscious about the low physical activity and the addiction that long use of the devices were causing. Accordingly, he decided to start taking his daughter walking for at least one hour to the hills even though it was forbidden by the authorities. A Portuguese mother confessed that she forced her son to go for a walk or a bike ride with her every day, as he had a tendency to spend excessive time playing PlayStation and she feared this could evolve into an addiction. While she believes that digital technologies have potential to be beneficial if used correctly and responsibly, she also feels that mediated interaction will result in a decrease of empathy and social skills. Concern about the loss of social skills was raised by another Portuguese mother, who along with her husband strived to be creative and organise engaging activities for the whole family to prevent her children from spending too much time on digital devices

Various other parents had concerns about addiction:

“I was worried that she would get too addicted because she was more on it [digital technology] and it was too much for school”. Croatia, a mother of an 11-year-old girl.

“You know, they believe they spent 10 minutes but it is an hour. I don’t like it. I control them a lot, but of course, they go away with the device in their hands. She/he is all the time with the device, watching videos instead of creating something”. Spain, a mother of a 10-year-old child.

“They are irritable, quarrelsome, and more nervous... they are not themselves...”. Croatia, a mother of two children.

Parents also found the continuous notifications children were exposed to distracting. A Norwegian father told the researchers how children turned the school platform (Microsoft Teams) into their own playground, for communication with each other, resulting in lots of noise (literally) from the many notifications from the app:

“When we installed Teams, there were lots of messages because the pupils set up their own groups. So, notifications started hammering in. We had to turn these off; otherwise, it would have been pure chaos”. Norway, a father of two children.

The same type of situation was reported by a Romanian mother who was concerned about its impact on her son’s attention span. She stepped in and imposed a new rule for no notification checking while he is engaged in other activities:

“He kept in touch with his schoolmates and the teacher almost permanently. I wanted to limit this access a bit because at one point it seemed excessive to me. At each beep he automatically redirected his attention to the phone. And I said: ‘you silence it, and we finish the activity we were in, be it the lunch or homework, or a walk. And after that you can take the phone to see the notification”. Romania, a mother of 11-year-old boy.

3.2.2 Technology against the families’ principles

A number of few families felt that the use of technology for remote schooling went against their principles around technology. Some parents felt that remote schooling has accelerated their children’s use of digital devices against their will. Families with this mind-set preferred remote schooling based on paper and tried to look for alternatives to their children. In one French family, the mother explained:

“Yes, we did discover a lot of stuff. That’s what the educational system wants, to use all those devices, but me, as a sports teacher, I don’t want to. Because I want them to free themselves from these tools, and not... They want us to do stuff, to invest in tablets, and so on. They have feedback but we can see some behaviour with those devices and in fact, I don’t want to give this to my students”. France, a mother of two children.

Another Spanish mother argued that she felt that her daughter lost her creative abilities when spending time watching online videos, and hence, she felt the need to control her, to avoid her daughter wasting time. A mother from Slovenia, whose son attends private school that actively centres all activities without digital technology, was bothered by the fact that her son had much more daily online activities planned in comparison to other schools and this was against the family principles.

When looking at the data, we were surprised that few parents in this study showed concern about the privacy of their children's data even though they were asked about the risks of technologies. During the pandemic, schools opted for a variety of technology platforms to provide a continuation of their teaching. As this was an emergency situation, schools who had not used digital technology before in their education were not necessarily informed about the different privacy issues when using free of charge platforms for education and the privacy implications for their students. Some parents in Norway highlighted the need for the state to step in and secure the school platforms, emphasizing the commercial side of it (e.g., the platform used by the school contains advertising). Another mother from Romania praised the parental reaction for protecting children's privacy, denouncing at the same time the lack of reaction from the schools' part in addressing such problems.

“Much more aware from this point of view were parents. They very quickly signalled to the school management that it is abusive to ask for videos from the children in which they appear with their face, voice and so on...we use the software we have free access to, while I know that in some countries, schools bought and gave families access to software, for each student and tried to secure their platforms that are dedicated only to that school. Which didn't happen to us. None of the platforms used by any of my children for school was secured”. Romania, a mother of 9-year-old girl.

3.2.3 Effectiveness of remote schooling

Various parents also questioned the effectiveness of remote schooling, especially when it came to younger children. A Portuguese father thought that the online schooling for his 6-year-old was a waste of time and a strategy that the private school found to justify for parents continuing to pay full tuition fee. This was echoed by some other parents who thought that the pre-school sessions of younger siblings required high effort and engagement of the parents. Children this age were less autonomous and hence, the load on parents was bigger.

An Italian mother who was very busy juggling two jobs during the lockdown also reported negative opinions about remote schooling. Her major issue was her daughter's autonomy. She is a mother who believes in empowering her daughter in the school context, with autonomy being a key value in her approach to parenting. She found that remote schooling was incompatible with her principle due to the demands of the teachers who requested constant communication with parents to facilitate remote schooling, instead of communicating directly students:

“The paradox is that my child was very precise in doing his/her homework, but I forgot to send it to the teachers, do you know what I mean?”. Italy, a mother.

In online synchronous activities, one reason for the perceived lack of effectiveness are the 'dead times' when teachers talked directly to one child and the others did not follow the discussion, becoming totally disengaged:

“There are 34-35 children in the class at school. And at this size, in one hour the teacher does not have time to ask everyone online. And when someone else answers, the others lose their focus. They sat and looked at the walls”. Romania, a mother of a 10-year-old boy.

The issue of disengagement was raised by another Portuguese mother who felt that remote learning was not as consolidated as in person. She observed how her children just hurried to finish tasks in order to be free to do activities that they enjoy, and then they had trouble remembering what they have studied.

In Slovenia, four mothers with children in various school years (from 1st to 5th) felt that the amount of learning material had been too vast and that the teachers were advancing to the new topics too quickly, without even making sure children understood and consolidated what they had learned. Therefore, parents had to act as tutors in order to ensure children were able to grasp the newly learned material.

The reduced time of schooling for some children was also a concern raised by parents on whether this mode of schooling was effective, while others felt that the long hours were also ineffective, as children lost interest. The father of an 10 years old child from Austria questioned what children could really learn with this reduced time of daily school work (2 hours daily for the child). He would have preferred more homework and additional worksheets. On the contrary, in Romania, a 11-year-old child had online classes using Microsoft Teams every day, most of them during the morning. Then, he/she had homework. The child complained about spending 5 to 6 hours a day in front of the computer just for school purposes. He/she felt that all the teachers sent homework without organizing between themselves.

Various parents and children also hinted that the quality of remote schooling also varied based on teachers’ pedagogical and digital competences. For example, an Austrian mother explained that remote schooling was better managed in her older daughter’s school (secondary school), than in her younger daughter’s school (primary school). She was convinced that this is less an effect of the different age of her children but of the competencies of the teachers and how they were able to motivate their pupils. Similarly, for a 6-years-old Italian child, remote schooling was a great challenge. She found the online lessons uninteresting and encountered several difficulties. Besides connectivity problems, managing interactions online represented the biggest obstacle. According to her mother, schoolwork was a very complex procedure that that was further compounded by the lack of teachers’ digital skills.

A Romanian mother argued that online school killed children’s creativity. With the pressure to constantly take pictures of homework and document each school activity by video recording it, some children (especially those who are not allowed to post their creations online) lost their willingness to create such things:

“My daughter recorded herself while singing or playing ukulele or drawing, although she never published these videos, because she does not have an account on social media platforms. She made videos replicating some videos she saw on YouTube on how to use figurines and how to make role-playing games with them. She had enjoyed recording such videos until remote schooling on the internet started, then that

fascination with role-playing videos disappeared. So she doesn't want to do it anymore". Romania, a mother of 9-year-old girl.

Parents who felt confident in supporting their children's education because they had knowledge, resources at their disposal and could dedicate time to their children's education took a more active role in their children's education. In general, when parents were supportive children were likely to be active and creative with technology. Interestingly, some students reported that their parents' involvement in their school complicated the learning process, although in general, parents' involvement was indispensable for many students.

3.2.4 Unmotivated, bored and disappointed

Students reported mixed feelings about remote schooling. Some really enjoyed this mode of schooling and others found themselves bored or distracted. Various children also reported feeling angry and disappointed at the whole situation, without exactly pinpointing one single reason why they felt like this. They just felt that emotionally and academically, it has affected them in various ways.

A ten-year-old Portuguese girl explained how even though she tries to be a good student and enjoys studying, she found it difficult to follow the online classes, as she got bored or distracted by her sister. She also was more tempted to interact with her friends on the Zoom chat. In fact, various students reported that some teachers opted to block the chat because children were distracted by chatting with friends during the class. Another young Austrian student described the video call with his/her classmates as very chaotic as everyone was speaking simultaneously.

Some students also reported some difficulties related to lack of possible interaction with the teacher. One Italian student reported finding online classes difficult because she could not rely on a physical blackboard where the teacher would jot down important notes and information to remember. The mother of young Danish girl described online lessons as "difficult to get through" and added how the online lessons lacked "human interaction". Some students also raised the lack of feedback from teachers as an issue. An older Austrian girl reported how she felt disappointed that after she prepared an art sculpture for her art class, she received no feedback from the teacher. Another Danish girl of similar age believes she cannot get help from the teachers in the same way as when you are physically present.

For many children, studying from home was not easy. This came as a surprise for some as they expected to cope better or similar to on-site schooling. Many stated they were highly bored during remote schooling and explicitly explained they did not enjoy the way instruction was carried out:

"Basically you are not even there. You are at home, there are connection problems all the time... it also depends on people's connection and at the end, it is a problem".
Spain, a 12-year-old child.

A mother explained how her 12-year-old son has learnt easily the digital skills necessary to study autonomously, but he still needed support to stay focused and motivated. In France, an eight-year old child and his/her siblings did not have any virtual classes. He mainly worked on paper sheets. The mother reported that her children had been quite disappointed with the schoolwork they had to complete. The child was surprised to have so much work to do,

especially in French, a subject he/she dislikes. He/she also said that he was sorry to have such easy work to do in mathematics.

Interestingly, some of the same children who claimed to find remote schooling boring, also spoke about very creative engagement with technology, clearly developing a wide range of digital competencies that were not exploited during remote schooling. An eleven-year-old boy from Spain, who confessed that he was not keen on remote schooling, told us that one of his favourite activities was programming a robot. He also explained how during the lockdown he learned how to install Minecraft on the laptop with the help of a friend, who had given him instructions how to do it during a video call. Another six-year-old girl also confessed that she found online lessons uninteresting but simultaneously, she reported feeling fascinated by technology. Having recently learnt how to read, she now started exploring increasingly complex functions of digital devices. She has developed a game based on video communication, whereby she would do screen recording to stage movie scenes with her cousin and grandparents.

In general, students missed school and many wanted to go back as soon as the pandemic was over:

“You cannot see your friends, and it's tiring and such, it's just a lot of fun being in school, I really like that”. Denmark, a 9-year-old child.

3.3 Organising remote schooling at home

3.3.1 Finding time for remote schooling

One of the biggest challenges reported by families in the context of remote schooling was the management and organisation of tasks. It was not easy for parents to be so highly engaged in communicating the school tasks to their children, the delivery of schoolwork to the teacher, ensuring that their children have done the tasks on time and reconciling deadlines with family life. A father in Spain explained how they devised a clear family time schedule centred on the children's needs, even though he was also working remotely from home. The father supported the school activity with an average of 2/3 hours per day helping with homework.

In countries with poor communication mechanisms between school and parents, one specific burden many parents complained about was the expectation that they have to be permanently available or connected themselves to facilitate the connection between teachers and students.

“And, somehow, everyone assumed that I had my smartphone in my pocket from where I could give all kinds of commands, left and right. A link was emailed to me every day, that I should instantly forward to my child to have access to the class. If we didn't have this impediment, my child wouldn't have an email address even now. That's why we had to create her an email address, so that the links to the zooms don't flow through me all the time. So, this was a problem that parents were supposed to always be there, next to their child, able to mediate”. Romania, a mother.

Another mother in Spain told us how spending three to four hours a day helping her children was harmful for her as it increased her strong migraines. In this case, it was the older brother who helped his sister to connect with teachers using Zoom.

Parents who continued working outside the house during the lockdown faced some important challenges on how to organise their children, especially if both parents coincided outside the house or if they were single parents. In one household, two Portuguese girls of ten and three were sometimes left alone, as the parents needed to work and they could not rely on the help of the grandmother, as they were scared of contagion. The older girl, who had a handwritten schedule posted on her bedroom wall with the online classes and the Zoom links, explained how she usually let her sister sleep late so she could get her schoolwork done, as when the sister woke up, she had to help her eat and get dressed. When the girl had synchronous classes, she used the laptop in the living room, and left her younger sibling in the bedroom playing with the tablet to entertain herself.

A mother of an 8-year-old boy explained she found remote schooling difficult to manage not only for her child but for herself as well. As a doctor she had to work long hour shifts in the hospital and because she is divorced, she had to leave her son with the grandparents. To ensure the safety of the older family members, Alessandra would stay in a separate area of the house. This situation and the special arrangements had effect on the boy who seemed sad and confused.

3.3.2 Space: Different home corners becomes a classroom

Another challenge brought about by the lockdown was the reconciliation of tasks and needs in the same space, especially for large families living in small spaces. Families found that they had to readjust their space to work and study synchronously. Often, older children worked autonomously in their bedrooms, raising concerns in some families of spending more time on their smartphones than on remote schooling.

As one father explained, it was difficult for him and his children to engage in synchronous online activities and stay focused. They created three workspaces: the father worked in the kitchen using his work laptop, the eldest son (aged 13) studied in the boys' bedroom using the family laptop, and interviewed son (aged 8) studied in the living room – because it was closer to the kitchen and easier for the father to support him when needed.

Another issue raised was WI-FI coverage in the house. In one large Portuguese family, there was no coverage in the child bedroom, so he had to move, and study in the “toys” room – which was quite challenging, since he got distracted often. Again, in this family, the synchronous online activities were challenging, so the father worked from the kitchen, the older sibling stayed in the bedroom and the other one moved to the living room.

The mother of another large family found the family organisation in a small apartment challenging. She was particularly attentive of her older children closing themselves in their bedroom with their smartphones the whole time. Similar concerns were raised by another family in Romania:

“We have a fairly small apartment; practically, with two rooms and a kitchen, it has always been a problem, who and where to take refuge to have peace. On the other

hand, my children didn't have any headphones. Also during this period, for example, they received headphones as a gift for the devices they had” (Romania) a mother of two girls.

In these crowded situations, the headphones became an indispensable device necessary for families engaged in simultaneous activities.

3.4 Parental mediation and strategies of finding a conciliation between work and study

“I have this internal dilemma between leaving them out of technology, because of course everything works around this framework, and on the other hand, that they are not slaves of technology. I believe that I can work out an equilibrium”. Spain, a mother.

Families came up with different parental mediation strategies on how to manage this new reality of using technology for both schoolwork and leisure time. Parents play an important role in shaping their children’s digital media use, seeking to find a balance between minimizing risks while equally facilitating opportunities (Zaman, Nouwen, Vanattenhoven, de Ferrerre, & Looy, 2016). However, little is known on the role parents should play when it comes to using technology for emergency remote schooling. In the context of the post-industrial risk society, while parents are united in their hopes for a (digital) future where their children are not left out, the diverse social, cultural and economic backgrounds of parents influence greatly their parental practices (Livingstone & Blum-Ross, 2020). Therefore, a closer look is needed for accounting on the situatedness of actors and their practices.

With the emergence of new media, parents –some of whom had not used these new technologies themselves– are expected to mediate their children’s technology use in order to reduce or mitigate their risks and enhance their opportunities, what is now commonly known as digital parenting (Livingstone & Blum-Ross, 2020). In the context of remote schooling, various parents undertook this role by engaging with their children in digital activities as a strategy to teach them how to use them appropriately, inform them about potential risks and how to deal with them. Parents found themselves re-negotiation their parental mediation with their children’s use of technology, as many children were expected to use technology for their schooling. As one French father told us:

“Rules have certainly changed because they [the children] had access to all these tools: tablets, computers, phone...with conditions, but they had no access at all to this before”. France, Father of three children.

In general, younger children had less time in front of screens because parents played more with them and they were more likely to be requested to do their homework on paper and play educational games.

Bringing technology to this new context has prompted many families to reconsider their rules on the use of technology and adjust families' discourses. Many families in this study, including the strictest ones, tended to ease their rules, especially in terms of the duration of time their children could use technology. The mother of six year old from Portugal explained how during the pandemic she changed her opinion. Before the lockdown, she used to forbid completely her children from using digital devices and tried to delay it as much as possible.

However, during the lockdown she recognized that digital devices have a lot of pedagogical potential, as well as are highly engaging and attractive for children. One family in Croatia commented how before the lockdown the children were allowed to use the PlayStation for two hours on the weekend and how, during lockdown, they shifted to two hours daily.

Some established new rules around technology, for example, a common rule amongst the families was that technology could only be used after schoolwork was completed. In many families, the use of technology for leisure was used as a reward for finishing school work. Other families felt they had to restrict time, as usage was becoming excessive. While others imposed no time restrictions on the use of technology, but rather supported their children finding their own rules (as reported by an Austrian family), as long as they had some access to the content their children were viewing.

A Spanish mother echoed the concerns of many parents in this study: finding balance between allowing the children certain freedom in using devices such as laptop, tablet or game console and setting the limits to avoid negative consequences. In this family, they noticed that use of technology was becoming excessive and thus, had to limit its use. A similar concern was voiced by another mother in Croatia:

"I'm worried that he's still young enough, but also old enough to get things that I may not be able to control, and that worries me". Croatia, a mother.

"A Danish mother of 7 years old child, wishes he would spend more time on being a child or a boy, instead of being an adolescent". Denmark, a mother of a 7-year-old child.

Another mother from Spain reported doing reflective exercises with her children to promote their self-control of digital uses. She showed them a schedule of a normal day and the children were asked to mark what percentage of the day they would spend using technology. The children chose two hours playing on the tablet or with the console over an entire day. A French father had another way of dealing with technology, offering alternative content:

"Rather than limiting use, one must above all propose content which, on the contrary, is not mind-numbing". France, a father of two children.

Such parental mediation was not always well received by the children. One son would often complain to his mother that he is "left out by my friends" because he did not know anything about what his friends were doing with digital devices. In fact, while his parents had explained to the boy how the internet works, video editing etc., his knowledge was more theoretical, as he did not practice using devices.

Some parents saw the excessive use of technology as temporary. Both parents and children agreed that they were spending more time online, given they could not go outside, see friends and do sports. For example, one mother from Spain who was more on the restrictive side felt she had to ease her control during the pandemic clearly stating that she wanted to reduce the use of technology during summer. Another mother from Portugal told us that she was confident that the screen time would go back to normal when lockdown is over. While another

mother confided that, she gave in to her children's requests to use digital devices because it was the only way to have some peace in the house:

"Somehow I gave in, in a sense that in order to have peace in the house – let them each do their own what they are interested in (using digital technology), rather than always banning and saying – no, don't...". Croatia, a mother of two children

Families with parents working remotely reported feeling obliged in becoming more lenient with their children in using digital devices for longer hours, to be able to get some quiet time to complete their own work commitments on time. In fact, for many parents their role was confusing because they felt they had to deal with a high number of roles simultaneously in the same space (Koskela et al., 2020). Some parents felt they had no other choice, and felt guilty about their decision, while others knew this was a temporary option and it was the only way to work remotely. An Austrian mother confessed that she was unsatisfied with her parental mediation, because due to other tasks, she did not find time to speak to her children about inappropriate content, and hence, would often end up checking late at night what the children had been doing during the day.

In terms of control, many parents spoke about still having control on what children can access or not when using their digital devices. Control varied according to the technology and the age of the children. Parents were less intrusive in low risk technology and more controlling in high-risk technology, mostly tablets and smartphones.

"It is urgent that we control what they watch, but at the same time, I like that he has interest in academic stuff, even if it is because it is accessed through technology, or that he is learning, because at the end this is the future". Spain, a father of an 11-year-old boy.

Many parents imposed time limitations on the use of digital devices. In spite of considering that using digital devices has been a positive experience for her six year-old child during the lockdown, a Portuguese mother prefers to prevent her child from using them in excess, so she established as rule that he/she has one hour of daily screen-time, usually in the afternoon.

In some families, some contradiction was observed with their view of control and how their children used the technology hinting that control is understood distinctly in different families. For example, in the case of a Spanish family, the father mentions the controlled use of technology, but the 12-year-old child spent eight hours on the tablet. Meanwhile, the control in another family in Spain meant that the two siblings were allowed to spend only two hours a day playing on the tablet, and this time should be shared among them.

The different strategies undertaken by the families also prompted children to act differently around technology. Some children told us how they finished their schoolwork as fast as they could, so they could use technology for leisure. For example, a Portuguese boy who does not particularly like schoolwork or studying found that if he could finish his work fast, he had more time to play FIFA or Fortnite on his PlayStation. This has led to more mistakes in his work. A seven-year-old girl from Spain also told us that she did her homework quickly to be able to play on her tablet: "I woke up and read what I needed to do as schoolwork, so I could use my tablet". A French mother reported finding her daughter hiding in the toilet to watch something on the tablet.

Parents differentiated their rules if technology was used for leisure or for schooling. For example, one family explained that while technology for playing was limited to 3 hours daily, there were no limits if the children were using technology for study or homework (as reported by a Spanish family). Some children found ways to circumvent parental restriction on playing time. For example in Romania, a girl explained how because he and his brother were allowed only half an hour for playing games, he took advantage of the unlimited time for 'documentation' on Wikipedia and read extensively about all the video games and movies he can imagine. This is different type of media consumption enforced by parental perception on the utility of digital technology.

Parents' preference for the 'educational use of technology' against the entertaining use was visible in many families, from various countries. In general, parents eased their rules if technology was used in schooling or, more broadly, with a positive developmental output. For instance, a Spanish mother explained that she allows her daughter to play more with digital devices because she, as an IT developer, deems video games as a medium to develop skills such as coordination, problem solving and strategizing.

Other parents too tried to get as much educational output from their children's engagement with digital technology and imposed some rules to shape this output. A Romanian mother told the researcher how seeing the deterioration of her daughter grammar skills, she imposed the 'text messages only' rule (against voice messages):

"At the beginning of the school year, her classmates started the school year by sending classic text messages. At one point, I only saw voice messages. She answered half in writing, half in voice. I understood that it's time consuming to write, so I did not say anything. But at one point, in my conversation with her on WhatsApp, I saw that she writes grammatically poorly; she did not use hyphens, did not spell the words correctly; and right after this phase I noticed only voice messages. At that point, it dawned on me that by sending only voice messages, she does no longer practice writing correctly. And then I told her that in her communication with me, I only accept writing; I told her why and it's okay". Romania, a mother of 9-year-old girl.

With the increase of video production for remote schooling, parents also found themselves having to negotiate with their children what could be uploaded and shared to public platforms. A Spanish eleven year old explained to the researchers that after finishing the videos she had prepared she would request her parents' permission before she would share her videos in private with her school friends:

"I put it [the video] in drafts, what means that nobody can watch it, just you [referring to herself] and then I ask my parents if I am allowed to publish it, and just if they allow me I publish it". Spain, an 11-year-old girl.

Worth mentioning are those few parents who, although would have preferred their children to engage in a more 'cultural' activity, such as reading books or playing an instrument, accepted and even supported their children's interest in digital technology once they realised the amount of "happiness and energy" this technology brings to their children during the lockdown. Such an example is a Danish mother who decided to get better at accommodating her 7-year-old child's interest in games and media and to embrace a more positive attitude towards the child's digital technology use once she saw how much she gained from using media during the lockdown.

3.5 The shifting role of parents: from guardians to teacher

During the pandemic, parents took a new role. In general, parents claimed to spend an average of 1 to 5 hours daily helping their children with their schoolwork. Suddenly, parents felt obliged to become actively engaged in children's schooling. Depending on the availability of the parents and presence of siblings, support varied from helping children with connecting to learning platforms, helping them with education content, researching topics, organisation of time and schedule, uploading homework to learning platforms and sending work to the teacher. In other words, parents helped children with: the technical support, school subjects or content-related support, motivational support or they acted as communicators / mediators between children and teachers. Many times these types of support overlapped and some parents found themselves in difficulty in handling all these new challenges. In fact, parents found their new role as teacher/facilitator rewarding when they knew what to do but also very frustrating when they experienced limits of their own skills and resources in supporting their children (Koskela et al., 2020).

In spite of her high level of digital literacy, An Italian mother confessed having difficulties in managing the learning platform of her 6-year-old child. The mother found her child's learning complicated because he/she had frequent connectivity problems and the learning platforms he/she had to use required the presence and active participation of parents.

The same burden to play the mediator role in the communication between school and children was reported by many parents. Both a Romanian father and a Spanish father admitted on purposely stopping to do the activities sent by the teacher or sending their children's homework to the teacher. During this time, the Romanian boy (grade zero) stopped to do his homework and continued just to attend the online classes for which his older sister helped with the connection.

The technical support was not always imposed by children lacking digital skills, rather by parents' desire to be in control of the technology. Thus, one of the parental challenges in families that favoured a stronger parental control on the devices was the need for being always available for assisting children with connection and reconnection, in the conditions in which parents did not want to give the passwords for the devices. When asked if her children could not connect by themselves, a mother from Romania explained:

"Not quite. On the one hand, they don't have the notion of time. Secondly, if I gave them the password from the devices, I wouldn't take them out of there, from Minecraft and other games... And we preferred to keep the passwords, not to give them the passwords. And that's why we had to connect them, to take them out when they finished their lessons, because otherwise, they would still be playing". Romania, a mother of two children.

Another reason families reported that the children needed supervision to do their schoolwork was because children would otherwise easily be distracted by the digital technology. If the children were not supervised, their children would end up using technology for playing. A Portuguese family even mentioned the family strategy to get an old desktop fixed for her 8-year-old son, as otherwise he would get easily distracted if he was using the tablet. Even for older children, some families also commented that while their children easily learned digital skills necessary to study autonomously, they still needed support with staying focused and motivated. This is such an important point, because often, we only think of support in terms

of parents enabling their children to finish their work. But most of the time, a big part of work is implicitly related to maintaining the students focused and motivated.

In some cases, homework from extracurricular activities was added to the school's homework. Attending an afterschool program or being engaged in some extracurricular activities, would have provided, in normal times, more time for parents to work, as some students would have done their school homework there. However, in these new conditions, they became another burden for the parents. During the lockdown, some of these after school clubs continued their activity online (as a way to justify their fees, as some parents commented), but many times this represented an extra burden on parent's shoulders and not a help. This is the case for example for a Romanian family, where the mother was exhausted during the lockdown period partially because of the 'tons of working sheets' the after school club sent to her son:

"It was hard for me and for him; I stayed with my son on the weekend for 3 or 4 hours just to do homework he got from afterschool...the after club has much higher requirements than school has. And the pressure is on us, parents. Because you can let children do homework by themselves, but they don't do them completely, or well."
Romania, a mother of a boy.

One mother in Portugal, who works as an early children educator told us that she observed that if parents were working (either remotely or outside the home), the children were more passive and usually regressed in their development; if the parents were available to stimulate the children, this was a very positive time and they exhibited new achievements. The same mother also raised concerns about children with special education needs who did not have access to the therapies that they needed during this period and believed that it was urgent to reopen schools.

Interviews with families with a low socio-economic status revealed that for these parents and carers supporting their children's remote schooling represented a challenge. For example, a Romanian mother who did not attend high school said that she could not at all help her sons with their homework, so the siblings helped and supported each other (not only the older helped the younger, but sometimes vice versa). Another Romanian family reported how the grandmother managed to install on her smartphone the Google classroom app, helped on the phone by a mother from the class. Later, together with her grandson and guided by other mothers, they learnt to upload the homework there, find the materials the teacher put on the platform and so on.

Other families could not support their children because both parents had to be outside of their house working. At least two families reported having to leave their children alone at home. In Portugal, a mother reported having to leave her young children alone, for short periods, while she and her husband went to work. During these periods, the older child who was responsible for the toddler used WhatsApp to stay in touch with the mother, chatting with her about practical things, such as how to warm up food and to assure her they were well. Another family in Austria was faced with a similar challenge, where both parents had to work outside the house. The children in this family were slightly older. The mother would print out all the school handouts when she came back from work and only then, she could help her children. While the parents reported that, the children managed the situation well and gained a new level of autonomy, the older daughter felt sad, confused and scared in the beginning of the lockdown. She also felt anxious that she might not be able to do all the

homework, given she was alone, although later she did feel better and proud to be able to manage the daily routine autonomously:

“At the beginning our daughter was very scared and insecure. Therefore it is important to try new things together with your child, not to leave them alone with the devices, but to help and support them”. Austria, a mother.

3.5.1 Families learning together

When parents felt that the school was not engaging or demanding enough or that their children needed something more fun to learn, they stepped in and proposed alternative educational activities to their children. While this was a burden for many, for others, this was rewarding and a way for the family to learn together. A Croatian mother described how she has devised her own personal study system for her seven year old, as in her view, the schoolwork was undemanding. As a first grade primary student, the school did not require them to use digital technology to complete the homework, only to send and receive them from the teacher. Hence, apart from monitoring the assignments, the mother created additional quizzes and crosswords using digital tools based on the material of the assignments. She also found two interactive games for mathematics that her child really enjoyed because he could do them autonomously. This allowed him to advance academically. Her motivation to be so active was twofold: (1) maintaining his motivation for learning; and (2) keeping him busy to gain some spare time with her other child.

An Italian mother who worked as a doctor and hence could not spend too much time with her son explained that she found remote schooling lacking in interaction. Therefore, in order to motivate her son, she came up with a creative digital idea for him; she suggested he talked about his feelings on a video-diary, to reconnect with his feelings. She thinks this was effective because “he stopped doing it when things slowly got back to normal”, as he was less stressed out.

In Austria, one of the mothers opted to install a variety of learning apps for her daughter on the tablet. She would spend around 1.5 hours daily using these apps that were mostly related to music and math. The mother reported that her daughter learnt all the multiplication tables using these apps.

Another mother from Croatia explained how the family explored the educational potential of digital technology in a very creative way. Together they would explore different themes that her son was interested in, such as Ancient Egypt, or Napoleon, and then they talked about it, found additional material on the web, or connected the theme to films and cartoons they would watch together. Since they experienced an earthquake during lockdown, they used digital tools to learn more about the waves, how an earthquake begins, etc. The Internet searches were done together, since they had some problems with the computer viruses that caused inappropriate commercials sometimes to pop up, so the mother always stayed with the child when he was online. They also made plans to make a family project – a film, using green canvas, creating costumes, etc.

In Norway, a mother of eight-year-old child reported that the school demanded very little of the pupils and stressed more the importance of wellbeing. She felt she could propose more creative learning activities for her child:

“In the emails that came from the teacher, there was no focus on schoolwork, but rather that the time we spend together is important and that we should not worry about schoolwork. The tasks were very easy... for example, build a rowboat from two spoons...it was more like playing together”. Norway, a mother of an 8-year-old child.

The mother encouraged her child to create a book together, so that she could learn to write and read in the family mother tongue. Both mother and child reported really enjoying this activity.

Nevertheless, not all children welcomed parental help during remote schooling. For some, it was about valuing their autonomy: ten-year-old child from Austria, for instance, said that although his parents wanted to help him with his remote schooling, he did not appreciate their help and support, as he wanted to do school work on his own. Other children denounced their parents for being too demanding with their work, which made their help rather unwelcome. Another Austrian girl of similar age reported that although she liked the remote schooling exercises the teacher sent to her father’s WhatsApp, she perceived her father as stricter concerning schoolwork than her teachers. If he found a mistake, she had to do the exercise again and correct it.

3.6 The future of school education

Not surprisingly, asked about how school education should or could look like in a similar situation, in other words what children enjoyed and would take further and what they disliked, the answers varied greatly but in most of them digital technology had a significant position. Most children enjoyed using digital technologies but were critical on how it was used for the emergency remote schooling. In fact, most of them would like to continue using the digital devices for school, but not in the way, it happened during the spring 2020 lockdown.

For instance, an 11-year-old Croatian boy would like part of the class to continue to be online (e.g. containing video recording, presentations and quizzes) because he found these activities enjoyable and he was happy to increase his digital skills.

Another child from Croatia, in a similar situation, would keep the use of digital technology for education as it was during the lockdown, between an hour and two a day, but he would replace the educational TV programs with outdoor activities (such as having more walks and stays outside). An eight-year-old boy from Portugal would love to be able to take his tablet with him every day to school. In another family in Portugal, both the mother and the son agreed that it would be nice to have digital technologies more integrated at school, but not the way it was carried for remote schooling during the pandemic.

Some children seemed to be quite futuristic in imagining the ‘future of school’, as the following two examples show. In the first one, a ten-year-old boy, imagined a **school of games** that would, in his opinion, grant games some legitimacy and importance provided by their relation with learning. It also makes school more appealing. When asked what he would like to take over to school from what he currently was doing, he replied:

Boy: *"To play games. I have plans to create a school of games. There you are allowed to play as much as you want; in fact, four hours is the course. Three days a week, and a few kids come in a week, and I talk to them about games and then we play together. We meet in games."*

Interviewer: *"But without a teacher?"*

Boy: *"Yes. But the teacher leaves you. That's why the school is named 'the School of games'."*

Interviewer: *"And what does the teacher teach you? To play better or to create games?"*

Boy: *"Both. For example, you can have Brawl Stars' time, Roblox time, GTA time... all kinds of games..."*. Romania, a 10-year-old boy.

Another boy, still from Romania, imagined a way to be more in connection with his schoolmates, in a still remote scenario, by holograms. When asked if he would improve the online schooling in the future in any way, he said:

"Yes! I don't know, I think that if hologram technology evolves, and the world has that technology, maybe we can make 3D holograms come out with us. Or so, to have a 3D scanner and to scan you and put your 3D image in front of the others. I mean, you'd be in the room at home, but everyone would show up with their hologram and it would be like at school". Romania, an 11-year-old boy.

On the other hand, some parents were more tempered in their enthusiasm for a future digital-based education. For example, a French father, expressed his desire to return to "normal" after lockdown, even though some discovered practices for education seem interesting to maintain, such as video capsules for learning certain concepts or calculation procedures. Although he valued the self-driven search approach in looking for information and would want to develop his daughters' ability to look for information outside the home, he would nonetheless prefer the use of printed encyclopaedias for this work, because he feels that on Internet, "knowledge comes too quickly to the child."

In general, children really missed face-to-face interaction with their friends, and the majority reiterated that they would love to go back to school to see their friends. In their minds, the future of school education cannot forgo the face-to-face interaction. As summarised by one of the mothers:

"After enjoying the time together, it is good that the kids have their own peer group again. My daughter and I realized that kids need kids". Austria, a mother of a 7-year-old-girl.

Yet, not all children were looking forward to going back to school. For example, an 11 year-old girl from Spain, said she will miss being at home, as she felt safer doing schooling remotely. A similar finding was observed in Slovenian family where a mother noted her 10-year-old child would prefer to stay at home. The child preferred remote schooling, as he liked doing things at his pace, making time to be more creative. The decrease in negative socialisation allowed him to more relaxed and more concentrated on schoolwork.

4. Key findings & Policy Recommendations

Relying on qualitative data from eleven countries, this report aims to inform policy stakeholders of the practices that emerged in the home context, with a view to providing a better understanding of the new normality in the context of education after COVID-19. While many schools have opened their premises since then, life did not resume its previous habits during 2020-2021, with many children still struggling to some degree with remote schooling.

4.1 Key findings

While we mapped a variety of situations and practices in this report, we have identified a number of common trends across the countries in the study. A major finding is that schools, and more generally education, did integrate digital technology, albeit on different scales, to ensure to some extent an important children's right namely, the right to education.

Going more in detail, other findings emerged and we briefly list them below:

1. The shortages in access to technology in some families and/ or in some countries is still real, increasing pre-existing inequalities and creating new ones and hence, these need to be addressed.
2. Digital education is as much about digital pedagogy, digital content and skills as it is about tools.
3. Education is a domain where parents have an important role alongside school and other actors. In fact, their active role in their children's education played an important role on how students used technology for remote schooling. Some parents are not able to support their children in this digital journey; therefore, policy intervention should aim to improve parents' capabilities in this direction, through a good understanding of their role and providing means for shared decision-making.
4. For a quality digital education in a similar situation, teachers, parents and students need more advanced digital competences. It is not only about knowing how to operate some devices, but to be critical, reflective, and balanced in their usage. It is also important that teachers know how to adapt pedagogies and content that work online.
5. Remote schooling does not always have to rely on technology. Books and paper are still valid methods of instruction, especially when combined with digital tools. Digital tiredness became an important issue during this period.

6. Education can happen outside the school and can be child-oriented. Some parents realised during this period that children learn in different ways. Schools can also learn from this period by taking into account children's genuine interests as a useful approach in education
7. The important role of onsite schooling for socialisation, well-being and, for some children, a right for education was a major realisation during this period.
8. The findings also highlighted some new, emergent online risks that were observed with older children (e.g., the excessive use of the internet) that have to be acknowledged and addressed. Also, privacy and data issues and commercial online platform used for emergency remote schooling in some countries, though mentioned only by few parents is an important topic.
9. The forced digitisation of children's academic life should also be discussed in the frame of children's' rights, as in some cases it might be discriminatory for children whose parents are not digitally competent or chose not to be digitally active.

4.2 Policy Recommendations

This report informs policy stakeholders of children's and parents' practices related to remote schooling that emerged in the home context during the spring 2020 lockdown. The Joint Research Centre, as the science and knowledge service of the European Commission, provides scientific analysis and evidence for direct use in EU policy-making. Within such a mandate, the present study aims to support education policy developments in the context of the current developments in the education sector.

Equal access to high quality education is a priority for European policies as outlined in the Digital Education Action Plan (2021-2027).⁷ Based on the data from this report, we can report that the COVID-19 pandemic brought new challenges to education. Families experienced shortcomings in the education systems related to: lack of readiness from schools and teachers to shift to different approaches to teaching and learning; access to digital devices and internet connection apt for schooling; support on how to guide children's use of digital devices for schooling and lack of an organised schedule from schools.

Moreover, although this report showed that a partnership between school and parents is desirable and would benefit children, there are legitimate cases where parents are not available for helping their children. In these cases, schools should not rely solely on parents but have to foresee new, flexible ways to reach these children and support them at the same level as others in their right to education, to avoid further inequalities.

⁷ https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_en

Recommendation 1: Digital upskilling, flexibility and innovative pedagogies:

The emergency state revealed frailties in the educational systems, especially in the context of making education and training systems fit for the digital age. There was a widespread lack of readiness to teach remotely and to shift to alternative pedagogies. Many schools were not prepared for such a transition and had not considered what technology was the most appropriate for instruction, in terms of effectiveness, security and accessibility. There is **a need for schools to be further supported and guided** in how they design for the coming future through European tools like SELFIE, which enables school leaders, teachers and students to reflect together on their digital capacity.⁸

Parents complained that the lack of teachers' digital competence had an impact on how technology was used for instruction during the lockdown. Although many teachers have learnt new digital skills during the pandemic, the support for digital upskilling, flexible and innovative pedagogies to adapt their teaching for hybrid and blended learning environments should be supported further. The European Framework for the Digital Competence of Educators (DigCompEdu)⁹, which is designed for educators at all levels of education and non-formal contexts, could be a good place to start for teachers to understand their digital competence levels and to enhance where improvement is needed. As **teachers and school leaders** are indispensable in bringing about change in education, they should be **involved in policy recommendations**, as well as given enough autonomy to implement changes in their school environment that they see fit within their own context.

As outlined in the Council Recommendation on Key Competences for Lifelong Learning,¹⁰ students need a wide range of competences to become active citizens of the future. Such competence development requires a variety of learning environments and tools. Families in this study have shown that **children and parents found new ways of learning during the lockdown** and were not only consumers of technology, but also producers of media content. This highlights the need on the one hand, to provide an environment for students where **self-learning can be further nurtured** and provide some down time for students, as opposed to a rigid and very tight schedule, often only focused on covering the curricula. On the other hand, providing flexibility to teachers in how they design learning, as well as, incentivise and guide teachers to use more innovative pedagogies that fit better in the current circumstances.

Also, there is a need for more support for considering assessment and validation of key competencies acquired in different contexts and to provide some flexibility when it comes to learning objectives based on the children's needs. In order to maximise the benefits and effectiveness of new ways of learning, key competences and digital technology for learning, it is of utmost importance that **policies and future research take into account children's own perspective from a young age to adulthood**, adapted to their aged groups and needs. Also, tools like the Digital Competence Framework can be useful in guiding students and parents in how to improve their digital competence.¹¹

⁸ https://ec.europa.eu/education/schools-go-digital_en

⁹ <https://ec.europa.eu/jrc/en/digcompedu>

¹⁰ https://ec.europa.eu/education/education-in-the-eu/council-recommendation-on-key-competences-for-lifelong-learning_en

¹¹ <https://ec.europa.eu/jrc/en/digcomp>

Recommendation 2:

Access, appropriateness and attitude towards digital devices/ Support on how to guide their children's use of digital devices for schooling

The pandemic emphasised that inclusiveness of school education is more than just access to technology. Although in some countries access to digital devices and internet connection remains a challenge, in many countries children had access to digital devices bought by parents and borrowed from the school. Not all devices were appropriate for remote schooling. During this study, we have also learnt that more important than equipment and usage is **the parents' attitude towards media usage**. In this respect, parents felt that they needed guidance on how to manage their children's use of technology and to deal with digital tiredness. Many had conflicting concerns, related to the increase of technology use by their children and the negative effects it might have on their mental and physical health, but also about their children's needs to participate in remote schooling, as well as, to stay in touch with their friends through technology.

Other issues related to inclusiveness emerged, such as access to a teacher who can help students when they do not understand something, a safe school, a quiet working space, parental support, etc. In this respect, parents also felt they needed guidance on how to help their children with remote schooling. Many parents got on board during this period, to ensure that their children pursued their education and tried their best to find the right supporting strategy and access to digital content. In this respect, **a common repository with learning resources that could be available to all teachers and parents could be useful**, offering the advantage of curated content. To increase the inclusiveness of school education, policies should take advantage of the lessons learned during the pandemic to further improve the inclusion of every child in the education system whatever its capacities and/or background.

Recommendation 3:

Guidance for mental and socio-emotional well-being

Many parents in this study were worried about the mental and socio-emotional well-being of their children. Future education policies should also take into account the need to support mental and socio-emotional well-being during learning. Competence frameworks such as LifeComp¹², that provide guidance on how self-regulation, flexibility, wellbeing (personal), empathy, communication, collaboration (social), growth mindset, critical thinking, and managing learning (learning to learn) can be taught and acquired through formal, informal, and non-formal education could be a first step towards this direction.

Support to parents in how to accompany their children in their emotional well-being and also to be able to detect when their children need external help is also needed and should be normalised. In this study, some children admitted to feeling overwhelmed by excessive use of technology and some started to realise the toll of long use of technology on their well-being showing a maturity in their digital competence. Accordingly, more than ever within a context of a technology-dominated environment, it is important that children are also provided with education and guided by mentors on being able to identify when they need external help and where to look for it.

¹² <https://ec.europa.eu/jrc/en/lifecom>

Recommendation 4:

Taking measures to counteract online risks and the other negative effects

Digital access, inclusion and learning for every child cannot be effective without taking measures to counteract online risks and the other negative effects. The use of social media, learning platforms, user generated content or artificial intelligence (AI) software must respect the fundamental rights to the protection of the person and its personal data, especially for minors.

Designing and developing online safety-by-design tools for educational purposes should be a priority. Industry commitment, dialogue with stakeholders, clear policy guidelines would be functional to protect children's safety, security, privacy and ownership in the digital world. Reviewing the legal framework supporting effective protection of children's rights in the evolving digital world (taking into account the last evolutions i.e., AI supported services and tools) and aligning them with existing international standards, laws and conventions related to children's rights and cybersecurity would be a first step.

Recommendation 5:

Towards a common policy for remote schooling and blended learning model

The shift from a rather homogeneous school education to a heterogeneous one that varied across countries, regions and even at school level has exacerbated students' equality. Many parents raised various issues related to a lack of a common decision to ensure that equal right of education for each student is preserved. This suggested a need for **a centralised policy on remote schooling and blended learning** that should take into account a series of issues that emerged during the lockdown: school schedule, students' attention span, digital tiredness, effectiveness of instruction, students' long-term engagement, and variation in workload, technology platforms, data privacy of students and parental intervention and support. Such a common policy should take into account the view of different education stakeholders, including those of parents and children, as the experience of lockdown varied substantially in different families.

Finally, it is important to highlight that there is no one solution that easily fits all children. Future approaches and methods should nurture a learning environment that would allow different models of instruction where **every student may be able to define their own learning paths** with the help of a teacher/mentor.

Annex 1: Table with Participants

All names below are fictitious. The interviewees are shown in bold..

Code	Family	Age	Location	SES
Austria				
AT 01	Andreas, father Monika, mother Kurt, son Gustl, grandfather Christl, grandmother	45-49 40-44 10 80+ 70-79	City	Low
AT 02	Maria, mother Mia, daughter Jens, son Anna, daughter	45-49 7 16-18 7	City	Medium/low
AT 03	Johann, father Carmen, partner Alina, daughter Annalena, daughter	45-49 40-44 10 18-20	City	High
AT 04	Christine, mother Richard, father Maria, daughter Laura, daughter	45-49 50-54 11 9	Countryside,	High
AT 05	Gabi, mother Johanna, daughter Tim, son Joleen, daughter	45-49 15 11 8	Countryside	Low
AT 06	Evelyn, mother, Ralf, father, Celina, daughter Conny, daughter	30-34 30-34 6 4	City	high
AT 07	Antonia, mother Michael, father Manuela, daughter	40-44 40-44 6	City	high
AT 08	Alois, father Marianne, mother Caroline, daughter Justus, son	40-44 40-44 7 5	City	Medium/ High
AT 09	Corinna, mother Joseph, father Constanze, daughter Michael, son	45-49 50-54 18-20 12	Countryside	Medium/ High
AT 10	Helene, mother David, son	45-49 12	City	low
Croatia				
HR 01	Marin, father Barbara, mother Ines, daughter	40-44 40-44 10	Large town	High

HR 02	Dinko, father Jana, mother Maja, daughter Mirta, daughter	35-39 35-39 11 7	Large town	Medium
HR 03	Darko, father Sanja, mother Ivan, son Tena, daughter	40-44 40-44 11 7	Large town	Medium
HR 04	Slaven, father Ana, mother Niksa, son Masa, daughter	45-49 45-49 9 7	Suburban area	Medium
HR 05	Ivan, father Karla, mother Marat, son Luna, daughter	40-44 35-39 7 8	Large town	Medium
HR 06	Franjo, father Marija, mother Boris, son	45-49 40-44 11	Suburban area	Medium
HR 07	Boris, father Doris, mother Lovro, son Luka, son Marko, son	40-44 40-44 11 9 7	Large town	Medium
HR 08	Davor, father Marta, mother Lidija, daughter Dino, son	35-39 35-39 8 6	Large town	High
HR 09	Tomislav, father Marijana, mother Tamara, daughter Ivica, son	35-39 35-39 11 7	Large town	Medium
HR 10	Petar, father Mirta, mother Ana, daughter Lucija, daughter Nikolina, daughter	40-44 35-39 11 9 4	Suburban area	Medium
Denmark				
DK 01	Maj, mother N/A, father Minna, daughter Ronja, son	30-34 NA 6 1	Small town	Medium
DK 02	Lone, mother Nikolaj, son	45-49 7	Large city	Lower- middle
DK 03	Carla, mother N/A, father Nynne, daughter	40-44 NA 7	Small rural town	Upper- middle
	Line, mother N/A, father Amalie, daughter N/A, sibling N/A, sibling	45-49 NA 9 8 12	Small town	Upper- middle
DK 04	N/A, sibling	13		

DK 05	Cecilie, mother Frederik, son	45-49 9	Large city	Lower- middle
DK 06	Clara, mother N/A, father Simon, son N/A, brother	40-44 NA 9 5	Countryside	Upper- middle
DK 07	Maja, mother N/A, father Anne Louise, daughter N/A, daughter N/A, son N/A, son	45-49 NA 10 18-20 18-20 9	Rural area	Upper- middle
DK 08	Marie, mother N/A, father Hans, son N/A, daughter N/A, daughter	40-44 NA 11 7 5	Rural area	Upper- middle
DK 09	Sofie, mother N/A, Father Helena, daughter N/A, son	40-44 NA 12 16-18	Large city	Upper- middle
DK 10	Line, mother Anders, son	35-39 12	Large city	Middle
France				
FR 01	Jean, father Margaux, mother Alice, daughter Inés, daughter Castille, daughter	40-44 35-39 8 6 4	Large city	
FR 02	Julie, mother Pascal, father Suzanne, daughter Gilone, daughter	40-44 n/a 12 9	Medium-sized town	
FR 03	Frédéric, father Jaël, mother Amaury, son	40-44 40-44 7	Medium-sized town	
FR 04	Aurélia, mother Mohammed, father Karim, son Lila, daughter	35-39 n/a 9 3	Small town	
FR 05	Arianne, mother Saïd, father Marie, daughter Charlotte, daughter	35-39 n/a 12 8	Medium-sized town	
FR 06	Sandra, mother Julien, father Johan, son Rémi, son Benjamin, son Charles, son	35-39 35-39 10 8 6 3	Small town	

FR 07	Flavie, mother Bruno, father Louise, daughter Eva, daughter Elona, daughter	30-34 n/a 14 9 5	Medium-sized town
FR 08	Christel, mother Oscar, father Luz, daughter Sibling Sibling	35-39 n/a 11 7 3	Small town/ county
FR 09	Victor, father Mediha, mother Djibril, son Joud, son Nahil, son	35-39 n/a 11 7 3	Small town/ county
FR 10	Marie- France, mother Alexandre, father Morgane, daughter Lucile, daughter	40-44 40-44 11 8	Medium-sized town
Italy			
IT 01	Alessandra, mother Ricardo, son	40-44 8	Small town
IT 02	Chiara, mother Luca, father Marta, daughter	35-39 50-54 6	Large city
IT 03	Elisa, mother Francesco, father Anna, daughter	45-49 45-49 9	Large city
IT 04	Margherita, mother Bruno, son	40-44 6	Suburban area
IT 05	Rosalinda, mother Lucia daughter	45-49 13	Large city
Norway			
NO 01	Valentina, mother Rose, daughter Patrik, son	35-39 8 4	Large city
NO 02	Tim, father Kate, mother Chloe, daughter Annie, Daughter	45-49 40-44 6 3	Large city
NO 03	Kare, father Trine, mother Marius, son Vidar, son Line, daughter	n/a 40-44 9 9 7	Large city
NO 04	Kris, father Stine, Mother Sverre, son Trine, daughter Grete, daughter	40-44 35-39 11 9 4	Large city

NO 06	Bard, father Randí, mother Casper, son Peder, son Mikkel, son	40-44 n/a 11 9 3	Large city	
NO 07	Sten, father Anne, mother Snorre, son	50-54 45-49 9	Large city	
NO 08	Sverre, father Lisa, mother Maren, daughter Alma, daughter	40-44 n/a 9 14	Medium-sized town	
NO 10	Kari, mother Per, son	50-54 10	Medium-sized town	
No 11	Tor, father Tuva, mother Pia, daughter Petter, son	40-44 35-39 7 3	Large city	
No12	Ulrik, father Astrid, mother Frederik, son	40-44 40-44 9	Large city	
No 13	Kristian, father Lene, mother Ella, daughter Sander, son	n/a 45-49 6 3	Large city	
No16	Petter, father Siv, mother Anja, daughter Emilie, daughter	49 n/a 13 9	Large city	
No17	Josefine, mother Tobias, son Kjersti, daughter Lucy, daughter	40-44 16-18 12 7	Urban area	
No 18	Steinar, father Trine, mother, Stine, daughter Liv, daughter	n/a 45-49 7 3	Large city	
No19	Gunnar, father Maria, mother Sofia, daughter Oskar, son Emma, daughter	40-44 35-39 14 8 3	Medium-sized city	
Portugal				
PT 01	Paulo, father Francisca, mother Alexandra, daughter André, son	40-44 40-44 13 8	Urban area	Low
PT 02	José, father Teresa, mother João, son Filipe, son	40-44 40-44 11 6	Urban area	High

PT 03	Rafael, father Rita, mother Sara, daughter Isabel, daughter	25-29 25-29 10 3	Urban area	Low
PT 04	Manuel, father Clara, mother António, son Miguel, son	40-44 40-44 13 8	Urban area	Medium
PT 05	Artur, father Iolanda, mother Matilde, daughter Ana, daughter Bernardo, son Mateus, son	45-49 40-44 11 10 6 1	Urban area	High
PT 06	Sílvia, mother Dinis, son	40-44 12	Urban area	Medium
PT 07	Mónica, mother Henrique, son	35-39 7	Urban area	Low
PT 08	Manuel, father Alice, mother Laura, daughter Rodrigo, son Margarida, daughter Joana, daughter	40-44 40-44 11 8 4 2	Urban area	Medium
PT 09	Luísa, mother Patrícia, daughter Daniela, daughter	35-39 6 4	Urban area	Medium
PT 10	Jorge, father Maria, mother Catarina, daughter Diogo, son Madalena, daughter	45-49 45-49 20-24 18-20 10	Urban area	Medium
Romania				
RO 01	Gabriel, father Angelica, mother Ilinca, daughter Delia daughter	n/a 40-44 9 4	Large city	Medium
RO 02	Mihai, father Dorina, mother Stefan, son Ioana, daughter	n/a n/a 7 10	Large city	Medium
RO 03	Raluca, mother David, son Ana, daughter	40 9 10	Large city	Medium
RO 04	Andrei, father Maria, mother Luca, son Radu, son	n/a n/a 10 9	Large city	Medium
RO 05	Mircea, father Gabriela, mother Tiberia, daughter Teodora, daughter	45-49 45-49 10 8	Large city	Medium

RO 06	Dorin, father Larisa, mother Rares, son	40-44 40-44 11	Large city	Medium
RO 07	Edith, mother Lidia, daughter Lena	n/a 9 16	Medium-sized city	Medium
RO 08	Iulian, father Laura, mother Mioara, daughter Decebal, son	n/a 50-54 10 12	Small village	Medium
RO 09	Ana, grandmother (LG) Mirel, father Tudor, son Antonia, daughter	n/a n/a 11 5	Large city	Low
RO 10	Helen, mother Alexandru, son	45-49 11	Large city	Medium
RO 11	Rares, father Smaranda, mother Sarah, daughter Irina, daughter	40 40 8 6	Large city	Medium
RO 12	Ion, father Rodica, mother Sabina, daughter Marius, son	n/a n/a 7 13	Large city	Medium
RO 13	Constantin, father Carmen, mother Bogdan, son Emil, son Alina, daughter Sonia, daughter	35-39 35-39 10 12 6 4	Large city	Low
RO 14	Remus, father Mihaela, mother Horia, son Loredana, daughter	n/a 40-44 10 7	Large city	Medium
Slovenia				
SI01	Janko, father Ronja, mother Bor, son Beno, on	40-44 45-49 11 7	Village	Average
SI02	Alen, father Tadeja, mother Zala, daughter Zarja, daughter Lena, daughter	40-44 40-44 10 8 5	Small town	Average
SI03	Jan, father Jasna, mother Maja, daughter Peter, son	40-44 40-44 11 10	Suburban area	Above average

SI04	Ivo, father Sonja, mother Feliks, son Nina, daughter Louro, son	40-44 35-39 11 8 2	Small town	Average
SI05	Karlo, father Jana, mother Marko, son Daniel, son Nal, son	45-49 35-39 10 5 5	Large city	Average
SI06	Uroš, father Petra, mother Sven, son	40-44 n/a 7	Large city	Average
SI07	Maks, father Sara, mother Aleš, son	67 40-44 9	Large city	Average
SI08	Gaber, father Brina, mother Emma, daughter	45-49 40-44 10	Small town	Above average
SI09	Rene, father Ana, mother Ivana, daughter Tomaž, son Andrej, son	n/a 45-49 10 16-18 16-18	Village	Average
SI10	Anja, mother Maša, daughter Katarina, daughter	40-44 11 8	Suburban area	Below average to average
Spain				
ES 01	Jose, father Paula, mother Nicolas, son Irene, daughter	45-49 45-49 8 6	West	Low to Middle
ES 02	Daniel, father Isabel, mother Alba, daughter Raquel, daughter	40-44 35-39 7 4	Large city	High-middle
ES 03	Paloma, mother Matteo, son Maria, daughter	40-44 12 10	Suburban area	
ES 04	Juan, father Susana, mother Marcos, son Gonzalo, son Ignacio, son	50-54 45-49 14 11 7	Large city	High
ES 05	Antonio, father Desiree, mother Leia, 11 Raul, 9	45-49 50-54 11 9	East	Middle
ES 06	Juan Luis, father Mercedes, mother Candela, daughter	45-49 NA 12	East	Middle

ES 07	Pablo, mother	50-54	East	Middle
	Eugenia, father	45-49		
	Sofia, daughter	11		
ES 08	Sergio, father	45-49	East	Middle
	Macarena, mother	45-49		
	Miguel, son	11		
	Rafa, son	9		
ES 09	Angel, father	40-44	East	Middle
	Daniela, mother	40-44		
	Ines, daughter	6		
	Leo, son	10		
ES 10	Alfonso, father	35-39	East	Middle
	Ana, mother	50-54		
	Denisa, daughter	7		
	Oliver, son	9		

Annex 2: Time Capsule

Children's digital engagement in
Covid-19 times (and after...)



Who am I?

I am a

Draw a circle around what is right



Girl

Boy

I live in a



Farm



Apartment



House



Townhouse

My town + country I live in a town called _____ in _____ (name of the country)

Who am I?

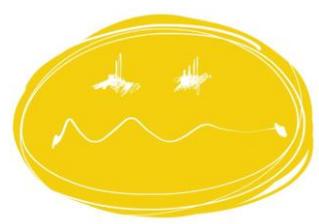
Draw a picture of you and your family

How do I feel?

How do you feel during the isolation period?
Draw a circle around the mood that you most feel like.



Angry



Confused



Tired



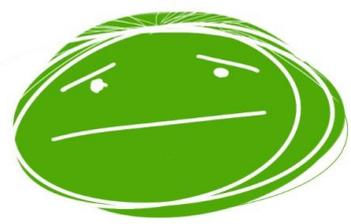
Happy



Satisfied



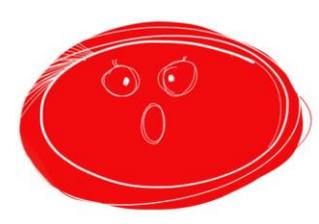
Worried



Disappointed



Sad



Shocked

I spend time doing



Draw a circle around the activities you do



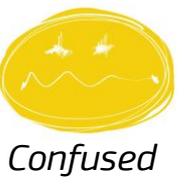
4



A typical day



1 Day in Life during covid 19-time



How do I feel about it? (draw lines from feelings)	Time	Activity	What do I use? (draw lines from pictures)



I miss doing?

*Three things I want to do when the isolation is over.
Draw, write or make a collage.*



I have learned

*What have I learned/done/tried that I did not know/could/had not tried before
Draw or write.*



Me and my activities



Draw some of the activities, you and your family have done during the isolation. Have you done anything special (celebrated a birthday, had a party, played with your friends? Which has been your favorite (draw a line from the star)?

A large yellow sticky note with a white tab at the top, intended for drawing activities.A large yellow sticky note with a white tab at the top, intended for drawing activities.A large yellow sticky note with a white tab at the top, intended for drawing activities.A large yellow sticky note with a white tab at the top, intended for drawing activities.

I am a researcher

Now, you should try being a researcher and make an interview with someone in your home. It could be your parent or another person. You might want to make an interview using facetime or skype, with another person you know (for instance a grandparent). Write or draw the answers below.

Who is interviewing who?	Name + name
What do you like to do during isolation?	
What is most difficult during isolation?	
What have you learned from the isolation period?	
What do you worry about?	
What would you like to remember from this period?	
What do you want to do when the isolation is over?	

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