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The school year 2020-2021 in Hungary during the pandemic

Country report

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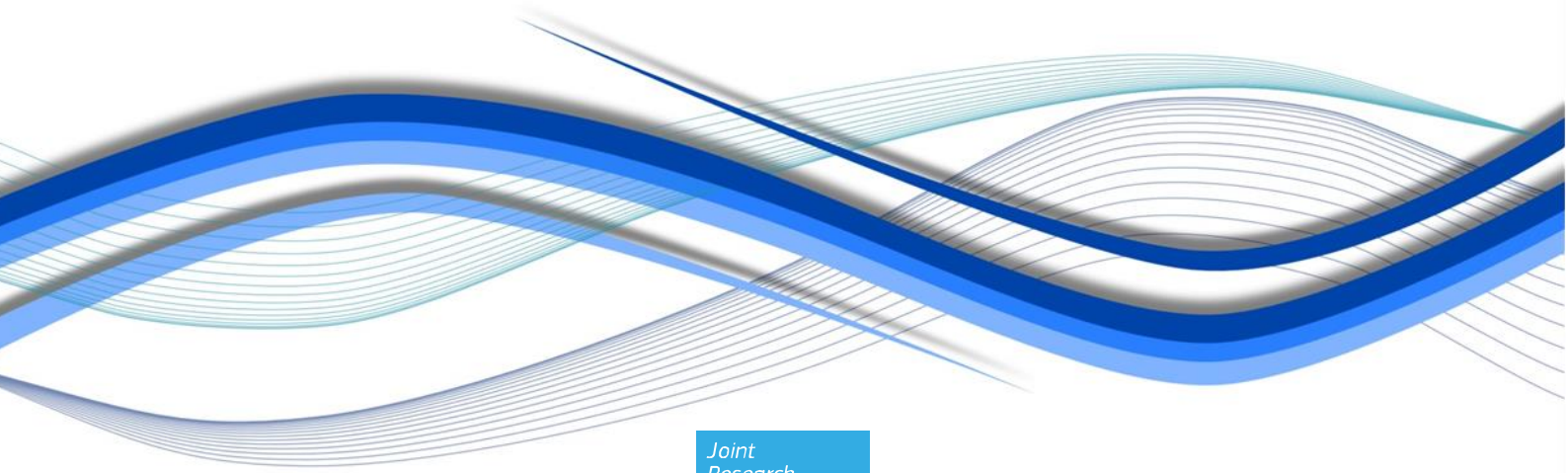

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Contents

Abstract

This report describes the experiences of Hungarian public education in the 2020/21 academic year, during the COVID-19 epidemic. We focus primarily on describing the teaching practices, the teaching methods used that arose during the school closures period. In secondary schools, this meant two-thirds of the school year, while in primary schools it meant a much shorter period. The report is based on a qulitative study of teachers, school principals, students, parents and a representative of a trade union of teachers and a central organization dealing with education policy (n=22). The main finding of the study is that remote education has highlighted a number of problems that the Hungarian education system has been struggling with for a long time. At the same time, some schools and teachers experienced the situation as a challenge resulting in a number of good teacher practices. In schools, on the other hand, where the proportion of disadvantaged students was high, the problems worsened despite teacher effort. The study also deals with the question of what lessons this period provided for Hungarian public education.

Acknowledgement

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Foreword

This report focuses on the school year 2020-2021 in Hungary and how, after the first wave of Covid-19 pandemic, schools moved away from *emergency* remote schooling towards a more planned approach to education. A number of representatives from education authorities, schools, parents and NGOs involved in education were interviewed.

This report is part of a multi-country study financed and coordinated by the Joint Research Centre (JRC) of the European Commission. The study was conducted from January to June 2021 in Denmark, Estonia, Hungary, Romania and Spain. Based on the national reports[1], a cross-country analysis will be published later in 2021.

Since the start of the Covid-19 pandemic in March 2020, the JRC has initiated various studies in relation to education in the context of Covid-19. The first report looked at the existing literature and recent international datasets to reflect on the likely impact of COVID-19 on education[2]. Next, two new multi-country studies analysed the situation of remote schooling during the first wave of the pandemic. Qualitative data were collected from June to August 2020 focusing on *emergency* remote schooling from the perspective of schools and teachers in five EU Member States (Belgium, Estonia, Greece, Italy and Poland)[3].

The second multi-country study, called KiDiCoTi[4], collected data on children's use of digital media for schooling, leisure time and social contacts. The KiDiCoTi study resulted in a series of reports. One of them is based on online survey data from 11 Member States focusing on how parents and children experienced emergency remote schooling[5] and another one deepens the view through interviews in 10 Member States[6]. Finally, KiDiCoti has also produced a report on online risks[7] and has a series of country reports.

All these studies provide a timely trajectory of the current developments in education based on evidence. With the results presented in this report, the aim is to take a step further to learn about the school year 2020-2021 in Hungary, and what lessons can be brought forward to make the future of digital education happen.

[1] Enemark Lundtofte (2021), Monostori (2021), Mägi (2021), Trujillo Sáez (2021), Velicu (2021)
[2] https://publications.jrc.ec.europa.eu/repository/handle/JRC121071
[3] https://ec.europa.eu/jrc/en/news/remote-learning-lessons-covid-19-and-way-forward
[4] https://ec.europa.eu/jrc/en/science-update/kidicoti-kids-digital-lives-covid-19-times
[5] https://publications.jrc.ec.europa.eu/repository/handle/JRC122303
[6] Cachia, Velicu, Chaudron, Di Gioia & Vuorikari (*forthcoming*)
[7] https://publications.jrc.ec.europa.eu/repository/handle/JRC124034

1 Executive summary

The COVID-19 pandemic has posed serious challenges to education systems all over the world. This is so despite the fact that the opportunities, challenges and risks of digital education have been present in education for years. There are many lessons to be learned from the pandemic in the field of education, but differences in education systems generate different conclusions.

According to education researchers, the long-standing problem of the Hungarian education system is that it cannot adequately compensate for the existing inequalities, that it is not inclusive enough. *(Fejes et al., 2020; Radó, 2020; Messing, 2017)*. Segregation occurs not exclusively, but strongly on an ethnic basis. *(Hajdú et al., 2019; Kende-Szalai, 2018; Kertesi-Kézdi, 2016)*. According to the results of the latest Pisa survey in 2018, Hungary has one of the lowest proportions of students who, despite their disadvantage, can get into the best-performing upper quarter in reading performance. In Hungary, parental background strongly influences children's school performance. The percentage of variance in reading performance explained by socio-economic status was one of the highest in Europe *(OECD, 2019a)*. The other main problem of the education system is that the content of the curriculum is predominantly knowledge-based, and it leaves little room for the development of independent learning, creativity, group work, playful learning as well as for the development of individual abilities. Closely related to this is the fact that the student performance of Hungarian students lags behind the European average and the proportion of low-achieving students is higher. According to the Pisa survey the proportion of 15 year-olds underachieving in reading is 25.3% (EU average 22.5%), 25.6% in maths (EU average 22.9%) and 24.1% in science (EU average 22.3%) *(Education and Training Monitor, 2020)* In addition, the proportion of low performers in all fields has increased over the last decade, especially in reading and science. It is also a fact that according to the OECD data the teachers', schools' and students' preparedness for ICT-based education is below the EU average. *(OECD, 2019b)*

The pandemic amplified several of these problems, highlighting their urgency. Although in many respects the pandemic situation has caused shifts in these areas, fundamental changes can obviously only be brought about by a long-term reform process.

Comparing the experiences between the start of the pandemic in spring 2020 and the current school year (2020-2021), progress has been made in almost every school involved in our research in terms of teaching conditions and teaching itself. However, there are also significant differences between schools and teachers, and in some respect, the differences have even increased.

The results of our research show that, with the exception of the most disadvantaged regions and those living in deep poverty, **providing the infrastructural background needed for digital education has been a much smaller problem almost everywhere** this academic year compared to the last year. Investments in equipment by families played a major role in this. It was also helpful that the families, whose child participated in remote education, was able to get the fee of their internet subscription reimbursed afterwards. However, this support did not reach disadvantaged families who did not have a monthly subscription, only a prepaid subscription.

Compared to last and this academic year, there has been a significant change in the fact that while last year it was much more up to teachers to decide how they teach, this year **school-level solutions have emerged**. This was manifested in the following: build-up of unified digital systems at school level, developing teachers' digital skills in school-level training, uniform regulation providing online lessons and closer teacher cooperation in the organization of school life and teaching practice. Making teaching frameworks more organized and transparent was not only positive for teachers, but also did not place as much of a burden on students to learn as last academic year. The fact that the learning framework became more organized was also highlighted by parents as a very positive change compared to last year.

At the same time, disparities between schools remained significant and even increased in some respects. **Schools that were more experienced in the use of digital tools and teaching materials, who had previously focused on creativity, innovation, development of individual skills in pedagogical methods, saw the new situation as a positive challenge.** These schools were more likely to develop long-term plans. They systematically assessed the advantages and disadvantages of digital platforms, curricula, tasks, selected them well, and personalized them according to their own goals. However, in schools that did not, or only to a small extent used digital education in the past, it was already a great achievement that the vast majority of teachers held online classes. However, in these cases, pedagogical methods have not necessarily changed. In these schools, most teachers have tried to replicate classroom instruction to an online environment, and they basically used the traditional frontal instructions.

During the remote education the situation is particularly difficult in schools with a very high proportion of disadvantaged students. In these schools, most children can only use digital content in a school setting. Many lack the right computer setup and broadband internet at home. In addition, parents are often unable to help their children because their proficiency in using digital devices is extremely low. Paradoxically, it was during the period of remote education that these children could access digital content even less than before. Teachers handed the assignments to these students on paper, who lost their learning motivations very quickly. In this way, several were left out of education.

Ministry of Human Resources perceived little of the local problems. During the remote education, it was constantly communicated that the education was going well, major backlogs are not expected. While schools and teachers are constantly asking students, and often even parents for feedback on teaching, education authorities are not asking for real feedback on problems. This foresees the question of how education authorities, the Ministry of Human Resources will be able to prepare for the new situation, how it can integrate the experience of remote education into long-term educational practice if it does not gather the experience of the past and this academic year that were greatly impacted by the pandemic.

2 National Context and State of the Art

So far, there have been three waves of COVID-19 epidemic in Hungary. During **the first wave of the COVID-19 all schools closed on Marc 16 2020, until the end of the school year (15 June).** Schools had to switch from traditional in-person education to remote education and online teaching in a matter of days. The schools and teachers had to find the proper online education platform, make digital curriculum, ensure the digital equipment and revise the forms of assessment and evaluation within days. Due to the unpreparedness of the education system, including schools and teachers, the transition to remote education has been accompanied by many problems. The difficulty was also exacerbated by the fact that many children had problems with appropriate computer and adequate access to broadband internet. In many families, parents and several children were at home at the same time, which is why not everyone had access to a computer.

Public education policy was also unprepared, and the first wave of the pandemic brought to the surface decades of problems in the Hungarian education system, such as the extremely low level of use of digital platforms and the hegemony of traditional frontal instructions. Until then, the E-KRÉTA (E-Crayon) online education platform developed by educational authorities, was used by most teachers only for the administration of grades. After the transition to remote education, teachers also started using another function of the system, which was sending and receiving assignments, but due to the increased data traffic, the system collapsed on the first day. Although E-KRÉTA soon functioned again, the most of the teachers did not like it and saw a lot of problems in its usability. **Schools and teachers tried to find individual solutions.** Many educators did not hold online lessons at all, just sent assignments to students. Many students appear to have disappeared from the sight of their teachers. **As government agencies did no provide adequate support to schools and teachers, a wide range of civil support was launched to support online education.** *(Prohászik, Á. 2020)***.** Several Facebook groups were shaped among the teachers, within a few days they specialized in different fields, and they also created curriculum banks of digital learning material. Teachers and students also received supports from other areas of civil sector. Actors read novels, short stories and poems on TV, private language teachers posted their curriculum on the internet, the internet access providers gave free data traffic to teachers and students involved in online education. TV channels broadcasted thematic lectures for children of different grades. Some publishers gave free access to their digital textbooks.

The most controversial issue in the 2019/2020 school closure period was related to the secondary school leaving examination. Part of the problem was that it was not possible to know how prepared the students were for taking the exams, and the differences in the level of preparedness of students from different schools. On the other hand, the safe conduct of the exams was also a problem in terms of social distancing. Eventually, the government abolished oral examination and only held written final exams. The decision was made just two weeks before the final exams.

Preparation for the second wave of pandemic (in the summer of 2020) was a legitimate expectation towards the government, but the government action lagged behind. *(Ercse, K. – Budai, V. 2020)* **For the second wave of pandemic, the main goal of the government was to avoid the school closures and full remote schooling.** The government has made strong efforts to protect the economy and maintain the health care system. A government statement said that closing primary schools would make health care inoperable, as many doctors and nurses would have to stay at home with their children. Because of all this, a central role in government communication was that the government does its best to ensure that schools are safe places in the 2020/2021 school year as well. These health-related measures applied in schools, in many respects, worked poorly.

Returning to more pedagogical and instructional issues, at the beginning of the 2020/2021 school year, it was emphasized by the government that they are preparing for a traditional school year as the incidence of the virus after the first wave of the pandemic was very low in Hungary. Meanwhile, the professional teacher organizations worked actively during the summer and developed their proposals for the 2020/2021 school year. The Union of Teachers (Pedagógusok Szakszervezete) presented its proposals in August 2020[8]. They suggested that teachers of vulnerable age and chronically ill will be provided with the equipment necessary for online teaching, maximize the number of children in a class to 14 and introduce

[8]https://www.szeretlekmagyarorszag.hu/hirek/a-megszokott-rendben-kezdodik-a-tanev-a-miniszterium-szerint-nem-terveznek-digitalis-oktatast/?utm-source=kapcsolodo

hybrid education[9]. The latter would work by dividing the children into groups, with one group spending three days in school one week and two days in the other. The union also proposed developing a flexible online curriculum.

In the first week of September 2020, schools opened and education started without any adjustment, in terms of the way they are taught. From October 2020, infection rates began to rise drastically. After the fall break, more and more parents did not let their child go back to school. There was tremendous pressure on the government from educators, educators' trade unions and from parents to close schools. Finally, **the secondary schools were closed from 12 November 2020,** and education in these schools was completely switched to online education. There were already several dates announced for the opening of secondary schools, which continued to be postponed. On April 19 2021, the government wanted to reopen secondary schools. The plan was followed by a huge debate in various forums. According to a survey [10] conducted between April 6 and 9, 2021 (with more than 85,000 responding parents), 76% of parents did not consider it safe to open schools. Only 35% of parents said they would definitely let their child back to school, 30% were insecure and 34% said they would not let their child back if they opened schools. The government eventually backed down and postponed the opening of secondary schools. The secondary schools finally opened on May 10 after their school leaving exams was held.

Primary schools were open during the 2020/2021 school year until March 8 2021. **Between March 8 and April 19, elementary schools remained physically closed. The lower grades of primary schools (1-4 grades) reopened on 19 April. In upper grades (5-8 grades), digital education continued until May 10 2021.** The news of the opening of lower grades of primary schools has once again sparked a significant social debate. The date of reopening coincided with the peak of the third wave of coronavirus infection, and the mortality data in Hungary are also extremely high, one of the highest in the world. Despite joint pressure from several teachers' unions, the medical chamber and parental organizations, the government opened the lower grades of primary schools. According to a survey conducted on the first day of school by a teacher union, 75% of lower grade students went back to classrooms. Another survey [11] measured that this figure was 66%. Notably, digital education was not allowed to be continued even if no children came to class (this has been the case in several schools.) In that regard, in a letter to the schools, the Minister for Human Resources stated: "I would like to highlight, that attendance and remote education cannot go on in parallel, but, of course, students who remain at home should be made aware of what parts of the curriculum have been processed in the lessons. This does not preclude the possibility that, if an institution has the opportunity, provide the opportunity for children left at home to join classroom classes online. " [12]

Overall, for the school year 2020/2021 four Governmental Institutions have followed the epidemiological situation (Oktatási Hivatal, Emberi Erőforrások Minisztériuma, Nemzeti Népegészségügyi Központ, Operatív Törzs) and monitored the number of infected students and teachers in schools. They decide about the closure of individual schools and whether a class should transition to online teaching. When few students are infected in a class, only they and their deskmates need to be quarantined. The school principals do not have the right to close a school or convert a class to online education. The reality is that from time to time, many students and teachers are away from school because they are infected, or because there is an infected person in their family or because they have another illness, and schools usually ask their children to stay home at this time. **In individual cases, there is no online teaching, so students who miss a lot are presumable very far behind in learning.** Towards the end of the school year, it becomes an increasingly sharp question what to do with children who have missed more than is allowed in a school year (this is otherwise 250 lessons in a school year).

[9] https://eduline.hu/kozoktatas/20201030_PSZ_panaszok

[10] The data collection was carried out by the Parental Association for the Future of Our Children (Szülői Összefogás gyermekeink jövőéért közösség), a non-governmental organization.

[11] The data collection was carried out by the Movement for Alternative Student-Centered Education Movement (Alternatív Diákközpontú Oktatásért Mozgalom).

[12] https://www.oktatas.hu/pub_bin/dload/kozoktatas/tavoktatas/21_2021_EMMI_hatarozat.pdf

3 Results

3.1 Planning for and adjusting to 2020/2021: approaches and patterns

3.1.1 Education Authorities in the 2020/2021 academic year

A Digital Education Strategy [13] has existed in Hungary since 2016, but it has not entered into force. For many years, the first positive step was the introduction of the subject of digital culture instead of the subject of informatics from September 2020. The subject digital culture covers informatics, digital communication and information search. Despite this positive step, the development of digital education by central education policy has so far lagged behind. There has been **no systematic development of pedagogical methods and curricula that can be used well in the context of digital education**. Of course, this does not mean that there are no such developments, state-supported projects, but they are not well integrated into the public education system. One such project is the establishment of the Digital Pedagogical Methodology Centre (*Digitális Pedagógiai Módszertani Központ)*, established by the government in 2016, to support the development of digital competences among teachers. The Methodology Centre promotes good practices and supports schools in implementing their digital development plans. They also organize webinars to teachers about using the digital tools and methodological issues during the pandemic.

Regarding the current school year (2020/2021), we can say the following: Educational Authority (Oktatási Hivatal) published its recommendations for the 2020/2021 school year on 25 August, a few days before the start of the school year. [14] Schools were asked to develop an online educational curriculum, to establish communication channels between teachers, students and parents. They strongly recommended the use of E-KRÉTA, which is a government development, but is basically for communication and not for education. The document of Education Authority also states that if a teacher does not have a computer capable of online teaching, they can also use school computers. The same goes for students. However, the schools do not have enough computers for either, The Education Authority informed the schools that most of the textbooks can be found on the internet in pdf format. The interactive version of textbooks for grades 5 to 12 are also available. They also made the Microsoft Office 365 ProPlus available to all teachers and students for free.

The Educational Authority has produced a collection of Digital Methodological Recommendations (Digitális Pedagógiai Módszertani Ajánlások Gyűjteménye) [15] that seeks to provide comprehensive support to educators teaching in online education. In this volume, they deal with the technological tools of digital pedagogy, learning organization solutions, digital curricula, forms of assessment, the problems of disadvantaged children and children with learning difficulties. The volume also includes a list of additional websites where teachers can find digital learning materials, methodological support, and good practices by grade and subject.

3.1.2 Infrastructure background: computer facilities and internet access

Between 2017 and 2020, the government implemented a large-budget development to provide Hungarian schools with digital devices. The project was funded by the European Social Fund. As part of this, schools in less developed regions were provided with Wi-Fi and laptops. Around 2,600 schools were equipped with Wi-Fi, 45,000 teachers received laptops, and 800 schools received 30 tablets per school. (For information: in the 2019/2020 school year there were about 3,600 primary schools and 2,240 secondary schools in Hungary; About 118,000 teachers teach in these schools).

Despite the extraordinary scale of development in the period of school closure in 2019/2020, one of the main issues related to digital education was the computer facilities of schools, availability of computers to teachers and students and the problems of broadband internet access. In the 2019/2020 school year, the problem was not only that these were not available, or the fact that education actors had poor quality tools, but also that schools did not know how to apply for suitable tools, and the application process was too long to get quick help. Moreover, schools also did not know how equipped the students were and who had a problem with a proper internet connection.

In the 2020/2021 school year, **these problems appeared with much less weight**. Mainly because families became more prepared and many of them bought computers for their children. Many times, even poor

[13] https://digitalisjoletprogram.hu/files/55/8c/558c2bb47626ccb966050debb69f600e.pdf
[14] https://www.oktatas.hu/kozneveles/ajanlas_szemelyes_talalkozas_nelkuli_oktatas_neveles_modszereire/digitalis_oktatasi_tartalmak
[15] https://www.oktatas.hu/pub_bin/dload/kozoktatas/tavoktatas/Modszertani_gyujtemeny_01_08_compressed.pdf

families bought laptops for children because they felt that if digital education was introduced in the 2020/2021 school year and children did not have the right tools, they would fall behind. This experience is confirmed by other research. Fodors' research indicates that by the end of the 2019/2020 school year, 32% of families raising school-age children had purchased digital devices in connection with coronavirus interventions. At the same time, the differences between family types are significant, with only 20% of single parents raising some kind of digital device. *(Fodor et al., 2020)*

Several teachers reported that they bought a modern laptop after the 2019/2020 academic year because the existing one was not really suitable for digital teaching. Overall, it can be said that families' **private investment played a much bigger role** than the state in providing the conditions for digital education. Of course, this does not mean at all that we would not find children in the least developed regions and in the poorest families who do not have adequate computer equipment. But unfortunately, since data is not available, we know very little about this nor the proportion of children that would be affected. There may be relatively few who have no means at all to participate in distance learning, and many times, it's just a smartphone that is available for students to make assignments and send back photos of completed assignments via email. Teachers reported that some children connect to online lessons via smartphone. Many primarily secondary school students use their smartphones for convenience, they often do not use them at their desks but they can move and walk more easily in the apartment with their smartphones. However, it is not clear what does this mean in terms of concentrating on learning.

In general, during school year 2020/2021, adequate internet access also worked better. Again, families and teachers invested in this and replaced their internet subscriptions by better packages. In addition, - as mentioned - the state provided free internet access to students and teachers in digital education. Because government reimbursement of Internet costs is based on post-financing, many families have trouble paying for the Internet in advance. The following example of this problem is given by one of the teachers: *"We have a student raised by her grandmother. They are very, very poor. The only device they can use during digital education is their grandmother's phone. It is true that it is a smart phone, but it does not have a regular subscription, only a prepaid subscription. However, prepaid subscriptions do not receive state support. They cannot switch to a subscription package. This is because they would not be able to pay later and would still be a problem for them, as state aid is only an ex-post payment."* (Teacher, primary school, disadvantaged region)

What has remained unchanged from last year is the fear of technical problems. Several teachers also mentioned that they were afraid that the internet connection would be lost during the digital lesson, and students were afraid of what would happen if the internet connection was lost during time-limited tests.

3.1.3 Adaptation to the new educational environment: from individual teacher strategies to more uniform operation at the school level

3.1.3.1 Unified digital system on school level

In the summer between the 2019/2020 and 2020/2021 school years, several schools and teachers prepared for the fact that there will also be stages in 2020/2021 academic year that they will be teaching in remote education. One key element of this was that several schools recognized the need for a **unified digital system on school level** so that teachers and students could teach and learn better. This meant that teachers in these schools used the same platform to hold online lessons and also send assignments. A small group of schools has been developing the unified digital system they work on for years, while others have made more serious progress in this respect during the spring 2019/2020 school closures. Most schools focused on this aspect at the beginning of the 2020/21 academic year.

The need to use unified digital systems arose mainly for students and for the younger students' parents. This could be achieved in schools where the school principal strongly supported this. In some places, these unified systems were built by IT professionals, while in others they were taken over by a more skilled teacher. There is also a digital system developed at the state level (E-KRÉTA, E-Crayon), but it is not well liked, and the teachers made a great deal of criticism of it. As a result, most schools only used E-KRÉTA to document grades, and tracking homework (the latter is typical of schools where Google Classroom and Microsoft Team are not used).

3.1.3.2 Develop ICT skills

After remote teaching in the 2019/2020 school year, many teachers began teaching with more experience this academic year. Teachers in several schools talked about having colleagues who did not use a computer at all before the spring 2020 closures. At the end of the last academic year, they also gained basic **computer skills**. Last year, even most teachers emailed assignments to students, while this year, almost everyone is also holding online classes. When schools closed again, there was hardly any teacher who couldn't operate a computer at a basic level and didn't know at least one application that could be used to teach. Of course, this did not mean that these applications could be used really well. In many cases, the online class only meant that the traditional lesson was held in the online space. Already this year, school principals have required teachers to use the digital platforms for teaching. In most schools, there was an expectation for teachers to provide more than just emailing assignments to students and expect them to return those via emails. However, big differences between teachers exist this year as well. One school principal commented on this as follows: *"Everyone had to develop at their own pace. Of course, there were things I said could still be done in the last spring, not now. For example, it is no longer possible to ask students to take photos of their assignments and send them back via email. It just tires the teacher, the students and the parents. Completed assignments should be uploaded to the Google Classroom."* (school principal, Budapest).

Incidentally, schools organized digital training for teachers. These trainings were usually given by a school IT specialist or a teacher/group of teachers trained in the use of digital devices. In some schools, the school principal made a conscious effort to develop teachers 'digital skills in every way possible. Teacher meetings were not only face-to-face discussions, but also digital meetings. In these discussions, they practiced how to share a screen, how to edit a document together, and so on. One of the school principals talked about it that way: *„I also tried to hold meetings for teachers online and assign tasks to my colleagues that they had to solve individually or in groups. Suddenly a colleague said it: well this is very good .... this could be applied to lessons as well. To which I replied: that's why I'm doing it."* (School principal, Budapest).

Through the interviews, students painted a rather controversial picture of the development of teachers' digital skills. It was generally acknowledged that all teachers had made progress in this area, but high school students from time to time complained that teachers are characterized by a lack of self-confidence in the use of digital devices even this academic year. Uncertainties are also referred to by what an 11th grade student said about online lessons: "Well, it's annoying enough for some teachers to keep asking: "Do you hear what I'm saying?, Can I see what I shared?" (Grade 11 student, small city).

In some schools, emphasis is also put to continuously develop students' digital skills throughout the face-to-face education. As there was no recommendation or regulation of central education authorities in this regard either, the schools organized this themselves. Those who had already used the Google Classroom, for example, in the spring of 2019/2020, tried to maintain the student experience. Homework was issued on this platform. It was assigned as a task to students to complete their homework through this system. One teacher said: *"The goal was for children to enter the Google Classroom every day, even during in-person education, so that they did not forget how to use it."* (primary school teacher, village)

In some schools, care has also been taken to help parents of young students to gain digital skills. Teachers held small trainings for parents at the beginning of the 2020/2021 school year about what they might need if schools closed again. One director gave the following example: *„ I came up with a program I named Learning Together. Teachers and parents of first and second grade students attended it, right at the beginning of this school year. We looked through the platforms we used later. Where they will find their homework, how to send them back, how to connect to online classes."* (Primary school principal, Budapest)

Teachers reported being surprised at how much students could not use the Internet for learning purposes. Obviously, there were also big differences in this, as in some schools, children regularly use the internet for learning. But in most schools, the use of the internet was limited to learning apps. Many secondary school students had trouble typing, and even word processing programs were not well known.

3.1.3.3 More uniform regulation of digital lessons

At the time of the spring school closure of the 2019/2020 academic year, teachers in most schools decided individually how many classes to hold online. There were those who did not give any online lessons and those

who kept all their lessons online. Many schools were not well organized about what online classes students have and when they were held. There were also schools with no permanent timetable who' taught more lessons in one subject in one week and less in another. On several occasions, the lessons overlapped because one teacher at a time continued the lesson. Several teachers reported that it was not mandatory for students to attend online classes during last academic year's school closures. „ It was horrible" - says a 10th grade high school student. *„There were even online classes in the afternoon. It was never possible to figure out that he/she was going to hold an online class. It has been constantly changing which classes teachers would give online and which have not. Some students attended the classes, some did not."*

At the time of school closures in 2020/2021, most schools regulated the proportion of classes that teachers should keep as online classes. It was quite common for teachers to have to keep half of their lessons as online lessons. In secondary schools, teachers were also expected to give priority to last year students who were to take school leaving exams. In several schools, the rule was that all classes from which subjects had to take a final exam should be kept online. It was also typical that elective courses [16] were all held in secondary schools. During the current school closures (school year 2020/2021), the majority of teachers consider it natural to keep the preparation for the final examination.

The fact that in this 2020/2021 academic year, most schools provided more online lessons than before, students and parents generally considered as a positive improvement to the previous year. This was positively assessed by parents, especially for lower grade students. In the 2019/2020 academic year, during the school closure, parents practically taught younger children. They had to explain the curriculum, they helped solve the tasks, home works and they also provided computer assistance to the children. This was very burdensome for the parents. Compared to the previous school year, parents now had much smaller tasks, and of course it was important that the children became much more independent during this time and that their computer skills also increased.

We also found examples of the introduction of the so-called **standby lessons**. This meant that during school closures, some lessons were held online, while other assignments were sent by teachers so that students could work on them independently in a set timeframe. The teacher would have "office hours" to meet with students online if they had problems solving the task.

This school year, many schools have introduced a more **rigorous planning process**. In several schools digital platforms were used by teachers to upload what they would teach in each class next week, what tasks they would do in the lessons, and what the homework would be. This worked very well as students did not have to ask for assignments from their classmates, many of whom also missed classes.

Having a pre-announced schedule for online classes helped a lot to keep students on the **agenda**. Having regular online lessons and sending and evaluating assignments regularly helps a lot in shaping students 'agendas.

3.1.3.4 Closer teacher cooperation

The majority of teachers reported that one of the positive experiences of remote education was that there was **much more collaboration between teachers** than before. There are several reasons for this: One was that they needed each other much more than before, whether in connection with the use of different online platforms and programs, or in pedagogical methodological issues. The other is that before the pandemic in face-to-face meetings, the discussion of many minor issues was arranged quickly and informally. Since this was not possible now, they had to deal with these issues in a much more organized way. The meetings were organized in advance and the issues and problems were discussed much more thoroughly.

Teachers generally felt much better about the need to learn about their colleagues 'experiences than before. In many cases, school principals also feared that teachers would become isolated and therefore set up working groups to meet at online at regular intervals. A high school teacher talks about this: "*We had a joint zoom meeting organized by the school principal every week where everyone could share their experience. In addition, the principal set up 3-person working groups (e.g. language teachers) who had to meet for an additional hour each week. We were able to discuss our experiences on each subject. For example, we helped*

[16] In secondary schools, at the end of 10th grade, it is possible to decide which subjects a student wants to study in an elevated number of lessons. The elective course choice is optional, and it can be chosen from one or two subjects. The aim of the elective course is to prepare for university studies.

each other how we could see how the children were learning words using online quiz; where to collect good videos; how to activate a zoom lesson. This system was traced back to November, after the secondary schools closed again." (language teacher, secondary school, small town)

3.1.3.5 Collection of digital teaching materials

After school closures last year, most teachers began collecting the digital content they found useful. In some schools, the school principals also encouraged the collection of these materials and they themselves collected them for their teacher colleagues. In some schools, they went even further and set up a library structure on their website, where different links were placed for each subject, including sub-topics and by grades. These were, of course, accessible not only to teachers but also to students and their parents. Schools that used digital content more actively before the pandemic have already gone further and personalized digital content.

3.1.3.6 More adequate learning burdens

In the 2019/2020 academic year, one of the biggest problems for students and their parents was that teachers gave the children a big amount of assignments. This was clearly explained by the fact that teachers were worried about how they would complete the remaining curriculum in the absence of in-person teaching. This was especially the case for teachers who did not hold online lessons, only sent assignments to students. As they also had less insight into each other's work, they did not perceive the overall burden on each student. Nor did they account for how these learning burdens add up at the family level. Many parents were in the home office and had to do their own work, do household chores and help their children learn at the same time. All this placed an extraordinary burden on parents.

This school year, things have changed quite significantly and the burden of learning of the students has been significantly reduced over the duration of online education. A lot of teachers have realized that it is not the quantity of the curriculum that is important, but the **quality of the acquisition of the curriculum**. Fewer assignments were issued, but more attention should be paid to individual feedback.

However, most students feel that even this year's learning burden is too heavy. A 10th grade student talked about this: *„However, there are still many teachers who give much more assignments than before (before the remote education). I think a lot of teachers think that we have no other program than to study anyway. Of course it really is. But it is also possible that they do not give more tasks, we only get tired of fewer. We can say that we were simply comfortable."* (10th grade student, Budapest).

3.2 The practice of teaching

3.2.1 Pedagogical practices developed

In primary and secondary schools in the 2020/2021 school year, teachers issued much more **project work** as assignments than in the previous years. Most teachers plan these projects related to a subject and the task is solved by a student. Consequently, there was much more project work done by students working together. This was driven by the effort of teachers to help students not feel so isolated. Many teachers have noticed how motivating this is for students and they plan to keep these assignments in the future. In the most innovative schools, the students did **cross-curricular projects**. As part of this, teachers also connected subjects that had never been connected before. An example of this is given by a high school teacher: „ *I am a history teacher and we are now studying the middle age. We are just learning about the structure of the medieval society. I figured out how to make the kids a medieval newspaper that shows how people lived then. We linked this project to learning English (some of the tasks had to be solved in English) and the IT class, where they were just learning how to make a graph. Graphs show how the population developed, what was the composition of the population and so on."* Elsewhere, topics such as singing and informatics were combined when they followed the lives of famous composers and mapped the locations of their lives.

The students really liked the tasks in which they could choose for themselves which project to take part in. This proved to be a very effective motivating factor. Several teachers said they were surprised at how

creative the kids are. This is actually somewhat strange as it indicates that many schools did not have such assignments in the past that would have unleashed and nurtured this type of creativity. Project work, group work and optional tasks could have been applied more extensively also during in-person education.

3.2.2 Changes / adaptations in assessment

Most teachers identified assessment and grading as **the most problematic issue during remote education**. During school closure in 2019/2020, hardly any schools and teachers had an opinion of how to evaluate in the given circumstances. The most important issue was considered to be how the grades would be given. Teachers tried to write exams using different digital platforms, but they were also aware that students often did not solve the tasks by themselves, making it hard to assess their actual performance. Teachers used different practices to avoid fraud: they set serious time limits for solving the tests, trying to make tests with different sets of questions for each student. Others simply did not give grades and did not give exams, but closed the year as of March 2020. In the 2019/2020 school year, very few teachers came to the realization that grading was not the most important element of assessment. Many schools made great progress in this area in 2020/2021. In this, school principals played a key role, supporting the wider use of so-called **developmental assessment** in several schools. Textual feedback, a detailed evaluation of the task, was most often used by teachers in the project work. It was a general experience that the **development assessment** was very helpful and the students also gave very positive feedback on this, they felt it to be unique and very motivating.

Educators used **self-assessment tests** relatively often during digital education. However, the students didn't really like it because they didn't always understand exactly what their mistakes were. For this type of assignment, there were few teachers who provided textual feedback on what was wrong and why. Some teachers asked for the mistakes to be written down and promised to discuss the mistakes in the next online class, but not all of this happened.

Teachers also gave grades to tasks and activities they had not done before. For example, it was appreciated if someone submitted their work on time. Sometimes grades were also given for homework. Essay writing, for example, gained more weight. Especially among high school students. *„ We have a lot to write this year. We write essays regularly. I have never written so much in my life. Maybe not else, but I've certainly made a lot of progress in using the word program this year."* (11th grades student, high school)

Overall, teachers gave fewer grades than they are used to in-person teaching. Incidentally, many students and parents complained about this. Thus, if a test or task failed, it was much more difficult to correct than before. This was especially the case in primary schools, where school closures were shorter, and teachers expected to be able to count on catching up with curriculum during in-person education.

3.2.3 Individualizing education

The majority of teachers saw that remote education did not necessarily increase the gap between „good" students and „bad" students (high-achievers and low-achievers). However, along other dimensions, differences between students may intensify. Not only teachers, but also students and parents, talked about this. Some of the growing inequalities do not stem from how students respond to digital education, but from how they respond to **social isolation**. There are students who cannot tolerate isolation from social relationships at all. Many of them have become closed-minded, some are struggling with depression. This obviously has an impact on learning outcomes as well. This is especially true for students who have been in remote education for an extended period of time. That is, primarily for secondary school students who spend essentially all of the school year in home education except for a month and a half.

It is also related to the lack of personal connections that teachers are less able to help students with personal problems than before. Yet this would have been much needed because there were many more family conflicts during the epidemic. Examples were mentioned that after divorce, children's school performance dropped significantly and it was only much later that they were able to find out what the problem was than in similar cases before.

Several teachers stated that they felt that family background was much more important in the current situation than when there was still in-person education. This is because students in this situation need more emotional support, and often parents need to explain curriculum that teachers have not had the opportunity to do in digital education.

If someone doesn't have a supportive **family background**, they can't perform equally well. This is particularly important for students in the lower grades of primary school. Children living in single-parent families were in a particularly difficult position.

Students who are able to learn independently and can allocate their time well, they perform better in remote education. However, the proportion of these students was very low, precisely because the education system does not condition students for independent learning.

3.2.4 The role of extracurricular activities

During the pandemic, not only were there difficulties in school education, but there were also in the special lessons. During the spring school closures of the 2019/2020 school year, many lessons related to extracurricular activities were immediately discontinued. After a few weeks, teachers tried to keep these lessons using digital means, but they didn't have the tools to do that yet. Language lessons, music lessons, school admissions preparation didn't work online either. This school year, this aspect also works completely differently. Especially with regard to language lessons, the situation has changed a lot. During summer 2020, most language schools developed programs that could be applied online as well. Many no longer even started face-to-face lessons, but started online courses right away from September 2020 onwards. School tutoring and elective courses also basically worked well in those schools where online classes were well organized. Several teachers also reported that programs aimed at talent development were continued online during school closures.

Sports workouts were in a special position last year as well as this year. In the 2019/2020 academic year, school closures followed the general lockdown where people were quarantined at homes. By definition, the workouts were missed. The school year 2020/21, on the other hand, a general quarantine did not take place when schools closed. From November 2020, only students who were competitive athletes and members of a sports association could go to training. Following legal regulations, the associations certified every child they could. The main reason for this is the financial interest of the associations is that the children go to trainings, and hold competitions and championships. Children's sports have been the subject of a constant debate. There were those who argued that sport was extremely important for the mental and physical health of children. Others have argued that school infections are significantly associated with children sporting in associations bringing the virus into schools. In any case, sports training continued, even when schools closed.

3.3 Inequalities in education and vulnerable students

3.3.1 Inequalities at institutional/school level

It appears that schools, which were already innovative in the past, could better adapt to events caused by the pandemic than others. They were much better prepared in realizing that **new actions and principles were needed** in a new situation. Those who have already had more experience in the field of digital education have firmly stated that the classroom lesson works differently than the lesson held in the digital space. Teachers cannot try to keep the same lesson in the digital space as in the classroom. Even the most experienced schools in digital education did not teach 45-minute lessons in the 2019/2020 academic year. Digital lessons were only used to explain the curriculum, discuss problems and issues. No time was wasted on assessment, oral or written tests. In these schools, **digital lessons usually lasted 30 minutes**, even in spring 2020. On the other hand, schools that are less experienced in digital education started reducing the length of lessons during school year 2020/2021, however, many schools are still trying to keep the 45-minute lessons even when online. Interestingly, schools that were careful **not to spend too much of students' time in front of screens** where the schools with a long tradition in digital education, where digital tools are also successfully used in classroom education. In this regard, one of the school principals said the following: *"During the spring digital education (in 2019/2020 academic year), we laid down some basic rules. One of these was that we would have few online lessons. Classes will be up to 30 minutes long. And we also tried to control that kids don't spend hours in front of the computer solving tasks. Of course, there were still problems. Many teachers in the online lessons have tried to do exactly what they do during classroom instruction. Of course, this could not be done, as many things work much more slowly using digital education than during in-person education.*

Writing a task on the board in the classroom is obviously much faster than typing it digitally. So you can't solve as many tasks as you do in the classroom." (school principal, Budapest)

3.3.2 Vulnerable students

In the absence of representative data on digital education, we do not know exactly what proportion of students and teachers have been left out of digital education altogether. Many studies and newspaper articles refer to a scientific work that the proportion of children who drop out of digital education (looking at grades 6, 8 and 10) can reach 20% *(Hermann, 2020)*. However, this is based on an analysis of data from 2017, but in the years since then there have been significant changes in the computer provision of schools and families with children.

In general, all research on education emphasizes that the long-standing problem of the Hungarian education system is that it cannot adequately compensate for the existing inequalities. Of course, these features of the education system persisted during the pandemic period, and additional problems were added. Examples are seen primarily in the most disadvantaged regions of the country, where there are many **children living in deep poverty and many Roma families,** but obviously such schools can be found all over the country. In these cases, it is often not enough to help the school provide the children with a computer. In many cases, there is not enough motivation for children to join online education, and this is also not a priority for parents. Also the fact that parents lack sufficient skills to use computers means that they cannot help their children.

All this is compounded by the problem mentioned earlier that families living in deep poverty typically do not have broadband internet access. The fact that many of these families rely on prepaid subscription schemes that are so tight that they cannot connect to online education.

Because of all this, there were schools where digital education and the 'offline education' ran parallel so that those who "dropped out of digital education" could continue during school closures. This is what the school principal of a small village in a disadvantaged region talks about: *„In our school, the children were divided into three groups, in roughly equal proportions: one group is taught online; those in the other group will be emailed the tasks and they can send them back; and we give the tasks to the third group on paper. Colleagues send me next week's assignments every Sunday. We print it out, and on Monday, the deputy principal takes the assignments to each family. And on Friday we collected the task solutions."* (school principal, village).

Inequalities in these schools are clearly increasing and children dropping out of digital education are falling even further behind.

This shows that disadvantaged regions and children living in poverty may have less access to digital education during school closure than before. This is because these children cannot use digital learning content at home or in a family environment, either due to a lack of technical background or a lack of parental / adult help, while they can learn in this way at school.

Consequently, in these schools, the proportion of those who did not attend digital classes and did not return paper-based assignments was high. For them, the teachers fought a heroic fight. The principal of the school mentioned above reported: *„With one-third of our children, about 70 students were given assignments on a paper basis. At the beginning, the students sent the assignments back, but not after 2-3 weeks. At this time, 40 of the 70 students did not return assignments. Then I called the parents of all the students and we discussed trying to get the kids back into education."* (school principal, village)

In schools with a high proportion of disadvantaged students, teachers often took the opportunity to hold small group consultations with the students. Lawmakers have suggested that this opportunity has been opened up to allow teachers and students to meet in person in the few cases where it was really essential. In fact, it was the only option for the really disadvantaged children not to be left behind permanently in the curriculum. Teachers try to hold very focused catch-up classes on these occasions, but here the ambition can be to avoid the student having to repeat a school year.

In addition to those living in poverty, another vulnerable group in digital education was those with **learning difficulties** the two are often connected. There was a general perception that digital education results in significant gaps for children with learning difficulties. Personal contact is often especially important to them. In addition, they usually receive out-of-class tutoring, of which they often dropped out during remote education. Parents can not really help them as they need much more help than average, which parents often can't afford. However, we also found a counterexample. One parent talked about the fact that her child with learning difficulties was finally able to learn much more calmly because she had time for each task and was

able to watch the teachers 'lectures several times. However, this could only work if the parent could subordinate all other tasks to it. And this is obviously not possible in the long run.

During in-person education, students with learning difficulties are positively discriminated. The framework for this is described in regulations. Adherence to these was not always possible in the context of digital education. For example, teachers were not able to personalize tests in all cases. The mother of a child with learning difficulties said the following: *„The teachers couldn't do that to give my son more time to solve the test than the others. She simply could not technically solve it." (parent with child who has learning difficulties)*

During digital education, children whose home environment was not suitable for peaceful learning were also disadvantaged. Teachers, students, and parents also mentioned the difficulties of **families with three or more children**. Homeschooling was a problem in these families even if they basically didn't have financial problems. In our research, we found no such family with the necessary number of laptops available. There were schools that tried to solve this problem, for example in smaller schools, meetings were held to design children's schedules so that not all children had an online lesson at the same time. There were schools where different grades had classes in different times.

Several teachers said that digital education only worked with students that they were already familiar with. If teachers knew the class and students well, they could develop both individual and group assignments. Without knowing the children's abilities and the dynamics of relationships in the classroom, this was almost impossible. Because high schools were closed from November 2020, **the first grade students of the 2020/2021 school year** were hardly known to teachers. Another problem is that children in the first grade of high school also barely know each other, they also found it difficult to work together.

3.4 Results and consequences of the digital teaching

3.4.1 Learning gap

One of the most important questions in the education system that has transitioned to digital education as a result of school closures is whether and to what extent there will be gaps in student educational performance. This is difficult to answer, because if we measure student performance with the same indicators as during the period of in-person education, there will obviously be gaps. It is a question of whether the same measurements can be applied in two such different situations where significantly different teaching methods have been used. Obviously, there are skills that developed better during the digital education period, while others were able to develop better in-person teaching. It is also difficult to separate the different effects, as students' learning progress is influenced not only by the education itself, its quality and methods, but also by other circumstances. Of course, these always play an important role, but it cannot be ignored that education took place during a particular, pandemic period, when social isolation, parental job insecurity, and fear of viral infection all affected student achievement.

The vast majority of teachers and school principals interviewed assessed that, based on traditional assessment criteria, **the performance of the majority of students lags behind.** However, in many cases this is less significant than expected. This is consistent with sociological measurements examining the impact of last spring's school closures on student performance. At the same time, lagging in school achievement depends on several demographic and sociological factors. And, of course, it also depends on what type of school the student attended, as primary schools were closed for a much shorter period of time than secondary schools. Secondary schools spend more than two-thirds of the school year in remote education. Primary school teachers reported that they expected school closures throughout the year, but these would not last long. Therefore, they tried to shape the curriculum in such a way that the parts that they thought they could not thoroughly teach students in the context of digital education were omitted and put back in the curriculum. Apparently, the secondary school teachers could not do that, since by the time they return to the classrooms, there will be barely a few weeks left in the school year. And they don't even really see exactly these backlogs in student performance since they haven't met their students since November. Because of all this, we believe that an accurate assessment of student achievement gap will only become possible later. The first such challenge will be this year's secondary school leaving examination, the requirements of which have not changed compared to last year.

During the distance learning period, one of the most critical groups was students in the first and second grades of primary school. They understandably had a very hard time coping with the computer. They definitely

needed the help of their parents. Teacher interviews were conducted while the children were still in remote education, so teachers did not yet have an accurate picture of how much the children were lagging behind. But based on the experience so far last year and this year, very significant learning gaps have been reported. This is what the school principal of a village school explains: *„At the end of last year, in June, we did a survey among first graders. We found that they did not develop anything. They were essentially in the same level in learning as they were three months earlier when the schools closed. So in this form of education, it was only possible to maintain the level that they had learned until then."* (school principal, village)

The other such vulnerable group were secondary school students (12th graders) who were about to school leaving exams. Their main risk stems not only from having to take exams at the end of the year that is of the same standard as in previous years, but also from the fact that several schools have missed the so-called pilot school leaving examination, that could have given them feedback on where they are in their learning. Teachers said that they tried to pay special attention to this group, either by holding extra online classes or by dealing with students in smaller groups and trying to discuss each problem thoroughly.

For the other groups of students, the teachers gave very different answers in terms of learning gaps. There were those who said that the learning gap of students was not very significant, and even if there were gaps, they would be filled quickly. Others stressed that they feel that the materials learned by students in digital education are not well consolidated. And there were also those who said they noticed huge learning gaps among the students. Teachers in secondary school also added that learning gaps are not necessarily due to the fact that digital education would be less effective, but also to the fact that children found it increasingly difficult **to bear social isolation and also lost interest in learning**.

Of all this, the learning lag of students who have dropped out of digital education is obviously the biggest problem. The situation of these students has been highlighted above.

While interviews with teachers resulted in a fairly diversified picture of learning gaps, **the majority of students painted a rather negative picture in terms of their learning progress.** This basically applies to secondary school students, who can already judge this better than elementary school students. In addition, parents also tend to feel that there are serious gaps in their children's knowledge this year. Some also pointed out that the knowledge now acquired does not become in-depth knowledge, it is not fixed in the long run. This is how an 11th student talks about it: *„When we went to school, I learned almost everything in class. Now this is not the case at all. Teacher explanations are very boring this way. I think so is the case with others. When there is no interactive task, many students make phone calls, play games, chat during the online class. Most teachers don't ask you to turn on the cameras either (because they don't allow them to protect your privacy), but that makes the whole thing even more boring. It also happens more than once that the teacher calls and no one is there…."*

Learning lag also varies from subject to subject. *„I feel that there is a big gap, especially in science subjects. Somehow they don't work well with digital classes. A thorough explanation would be particularly important here. And it somehow doesn't come through online classes. The experiments are not performed together either…."* (the parent of an 8th and 10th grade student, Budapest)

3.4.2 Changing teacher roles

Several of the students and teachers also said that during the remote education, the relationship between students and teachers changed. **Teachers got much closer to the students.** There were several reasons for this. One was obviously that the common threat, a new situation for everyone, not only made teachers work together, but also strengthened the relationship between teachers and students. One of the school principals spoke about this: *„I've never felt so close to kids. Strangely, this just happened when we weren't physically close to each other."* (school principal, Budapest) A representative of one of the largest teachers' trade unions spoke about this: *„After all, the main goal is to keep the soul in the children."* Several interviewees reported that students helped teachers solve technical problems, and this brought them closer together. Teachers took these help with pleasure and gratitude, and students became more confident in doing so. This often gave self-confidence to students who were not considered as good students otherwise. Students also talked about improving the relationship between teachers and students. *„Teachers became much more understanding."* (student, 10th grades)

The relationship between teachers and students has also changed because, in addition to knowledge transfer, teachers have taken on another important role, which was not so typical before, and that is **the role of the**

person who supports independent learning. Incidentally, this role was not easily accepted by all teachers. One reason for this is that teaching practices are mainly based on frontal education, in which there is basically a hierarchical relationship between the student and the teacher. In this, it is very difficult for teachers to change. However, the new situation was also a major challenge in this regard. In this regard, the representative of the teachers' trade union stated as follows: *„Unfortunately, most teachers think that the teacher is the transmitter of real knowledge and that children have no choice but to learn it. Nor does it help that there is a lot of prejudice about the information on the internet. Many people think that the internet is full of nonsense, in contrast, there is the all-knowing teacher. Unfortunately, younger teacher colleagues are no better at this. The only difference between young and older is that younger people are more adept at using digital devices, but their approach to them is no different."* (trade union representative)

4 Lessons learned: Conclusions and recommendations

4.1 Conclusions

Over the past and current school years, schools and teachers in Hungary have accumulated a wealth of experience. This period highlighted the weaknesses of the existing education system and also how difficult it is for the education system to respond to a particular situation. It has become clear that the problem in Hungarian education is not only that digital content is not used in many schools, but that the teaching methodology itself is extremely rigid and can only be applied in the classroom during in-person education. While most schools have tried to adapt to the situation, to become more organized, and to think through teaching methods, it appears that the central education authority makes less of an effort to see this difficult situation as an opportunity. The activity of central education authority has been characterized by haste, and even now we see no signs of the direction in which education will be transformed in the long run by the current situation. Naturally, during the pandemic, education management pays a lot of attention to health aspects, but at the same time, it would have been expected to also address educational issues. This expectation has been articulated by many schools, teachers and unions of teachers towards education management.

At the school level, however, much more activity and adaptability was experienced. For all the schools involved in our research, it can be said that they have improved a lot compared to the last school year when the pandemic first closed down schools. **Teachers have become much more experienced** in moving around the digital world. Many of them have wondered what **new methods they could use in teaching**. It is a question of how these will be integrated into everyday teaching practice in the future. In this regard, unfortunately, the students, parents and teachers involved in the research were more pessimistic.

It has become clear that even if we do not have school closures later on, there will always be students who are unable to attend in-person education for a longer or shorter period of time, and for whom digital teaching can be the solution. Teachers and parents also expressed the need to have the **technical conditions** for this in every school: cameras, good quality internet, well-functioning task allocation software, etc. Schools themselves have done a lot to ensure that lack of physical presence is not an obstacle to learning. In the past year, **new forms of information flow have emerged**. In most schools, much more information was provided to students about what they had learned in a lesson, what homework they had been given, and by what deadline. This information was typically stored on digital platforms used by the school (e.g., Google Classroom). As a result, those who studied at home during in-person education, or who were unable to attend an online class during the remote education, also had easy access to information on what curriculum they need to study and what homework was. Several schools are planning to keep this when they return to in-person education. Less often, but it also happened that schools **broadcast the classroom lessons** during the school closure, or in the period when it was in-person teaching, but many students were absent from class due to illness or quarantine. Incidentally, the broadcast of classroom lessons depended more on one teacher at a time. We did not find a school where every lesson was broadcast in this way.

During the remote education period, teaching methods also changed. The era of remote education has almost forced teachers to give students much **more project work** than they have done before. It was a good opportunity for students to practice independent work, collaborating with others. Most students also loved these tasks. Teachers and students also highlighted that they wanted to keep these types of tasks even after the pandemic. Teachers teaching in the most innovative schools also said that they would not only want to continue the project work, but would also strive to implement so-called interdisciplinary projects. Of course, applying these methods, figuring out tasks, thinking through the course of group work - at least in the beginning - requires more work. It is a question of whether teachers will have enough motivation to apply these teaching methods more widely. At least in the short term, broader education policy support does not seem realistic. Motivational forces within some schools are significant. However, this is not everywhere, so disparities between schools may increase further in the future.

Long-term remote learning is clearly seen by all educational actors as disadvantageous. Most teachers see that children can only be motivated by in-person education. For a shorter period of time, they can still keep children interested in online lessons, but for a longer period of time they can't. This is how one of the teachers expressed himself in this regard: *„There are every possibilities here, but really. Lots of good platforms, interesting tasks, lots of opportunities to bring new things to education. But somehow things still don't work. We hold classes, tutoring, we deal with talented kids separately, but we don't see them in person, and that's very much missing."* (teacher, secondary school, small town). One researcher formulated these

difficulties as follows: *„Children - especially the lower age group - cannot watch and learn passively for a long time, this form completely impoverishes interactions. There are no gestures, no eye contact, multilateral communication, which is exponentially important in childhood, disappears, and students are unable to interact with each other. And then I didn't mention the missing socializing effects and community experience of breaks, sports programs, faculties, and other coexistences."* (Radó Péter) [17] And the principal of a school for disadvantaged children put it this way: *„In the absence of personal relationships, certain abilities are degraded among children in the same way as among the unemployed."* The same interviewee stated that *„...digital education should be kept where there is added value or coercion."*

4.2 Recommendations

In the following, we make recommendations based on the experience of our research.

Education policy should conduct surveys of exactly what happened in schools last and this school year. Who were the ones who advanced and who were the ones who lagged behind in the current educational situation. What explanations are behind these phenomena.

Central education policy needs to think carefully about how it can help reduce disparities between schools. The good practices that came up in some schools should be collected. It should be examined how these can be applied to a wider range of schools.

Hungarian education policy should provide the possibility of flexibility at school level, as this period has shown that many schools are able to perform very well even in the most difficult circumstances. This can be explained by the fact that many schools have developed their own local strategies, which could work best in the given situation, taking into account the characteristics of the given children.

Education policy should also consider global issues such as how current teaching circumstances and methods help, for example, the adaptability of individuals (teachers, students) and institutions.

Education policy should make a much greater effort to ensure the benefits of digital technology in education. The current period brings many good examples to the surface. These should be further considered in terms of the possibility for adaptation.

Dialogue between education actors is also extremely important in education policy issues and strategies. This year we have seen that intensive communication between teachers, students and parents can create a positive environment for learning.

In the recent period, forms of learning have become more important (individual learning, working on a project, playful learning etc.), which should be strengthened in the Hungarian education system.

Educators used to be dominant in the role of knowledge transfer. In the last two school years, many have experienced a role in supporting the acquisition of knowledge. This should be strengthened as it would make students much more adaptive.

[17] https://www.penzcentrum.hu/oktatas/20210406/leepulo-sulikultura-tomegek-esnek-ki-emiatt-a-kozoktatasbol-1113518

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Annexes

Annex 1. The sample and method

The country report is based on qualitative research that was undertaken in Hungary in March and April, 2021. The interviews were carried out with educational stakeholders, namely with school principals, teachers, students, parents and also with the representative of teachers trade union and with a policy maker. Several of the 22 interview subjects were in multiple roles at once. In these cases, we have tried to amplify one role, but it is clear that stakeholders have shed light on certain issues from multiple perspectives.

The interview questions were formulated by the research team based on the research questions for different stakeholders. The interviews were conducted via videoconference, as the epidemic lasted throughout the research.

The sample consists of 8 teachers. We sought to have these teachers work in schools in different types of settlements. Two of them work in schools in Budapest, five in rural towns and one in a village. One of the teachers in Budapest teaches in an elite school in a wealthy district, in a bilingual grammar school. The second is from one of the poorest districts of the city, from a school that deals with the most disadvantaged students (primarily Roma students). It is a primary school that is mostly attended by students who are no longer dealt with by other schools who have already been counseled by other schools. Three of the five city teachers teach in the same school. This school is recognised for being at the forefront of digital technology. One of their teachers plays a key role in a program aimed at spreading digital education in Hungarian primary and secondary schools. The fourth teacher teaches in a small town near Budapest, a Piarist high school (non-public). The fifth teacher is a primary school teacher in small town in the Eastern part of Hungary, which is one of the most disadvantaged regions. The last teacher teaches in a small village around Budapest. The village itself cannot be considered particularly poor. Both village schools are primary schools.
Our school principal sample included three school principals. Two are primary school principals, and the third is the principal of a school that includes both elementary school and high school. Two of them are from Budapest, one of them is the principal of a school in a small village in Eastern Hungary. One of the school principals in Budapest is the head of a primary school in a prosperous neighborhood, which is a reputable school, but they are more average in terms of their practice in digital education. The other school principal in Budapest runs the institution in a school in an average neighborhood, but the school itself is distinctly innovative. Both in the field of digital education and in the field of alternative pedagogical methods, we can speak of a specifically recognized school. The third principal is the head of a primary school in a small village in Eastern Hungary. However, the school is a special position in other respects as well. The school principal herself participates in teacher training and has developed a pedagogical method aimed at implementing inclusive education. Its program has been presented in hundreds of Hungarian schools, although it works really well in slightly less than 60 schools. The school principal is also a scientific researcher who examined the situation of schools in the area, including during the pandemic period. The combined sample of teachers and school principals was heterogeneous in terms of both gender and age.
The sample included 4 students, 3 high school students (16, 17 and 18 years old) and one primary school student (11 years old). Two go to Budapest, two go to rural schools. Two of them are boys and two are girls. One of them attends church school.

In the case of the four parental interviews, we also tried to be as heterogeneous as possible. The first parent is a mother of three in Budapest, whose children were in 6th, 9th and 12th grades. Parents typically worked at their workplaces during the pandemic, so they were not working from home. The second parent lived in a household with children in grades 8 and 10. During the pandemic, both parents worked largely from home. The third mother lives in a small town in western Hungary with four children (grades 6, 8 and 11), the oldest child is already a university student. Both parents worked in a home office. The fourth parent has two children: one in 6th grade and the other in 7th grade. One child has more serious learning difficulties (speech impairment, dysgraphia, dyslexia). The mother had previously worked in tourism but lost her job during the pandemic. In addition, an interview was conducted with a union representative and a decision-maker working in the field of education policy.

Table 1. Description of sample

No.	Stakeholder	Sex	Age ([1])	Characteristics	Region
1.	teacher	M		bilingual secondary school, History-Geography teacher (in German)	Budapest, XII. district
2.	teacher	M		secondary school; Physics teacher	Gödöllő, city
3.	teacher	F		secondary school; ICT teacher	Gödöllő, city
4.	teacher	F		secondary school; History teacher	Gödöllő, city
5.	teacher	F		secondary school, religious school, French-German teacher	Vác, city
6.	teacher	F		primary school, lower grade teacher, English teacher in upper grades	Rád, village
7.	teacher	F		primary school, German teacher	Újfehértó, city
8.	teacher	F		Burattino primary and secondary school, the school deals specifically with disadvantaged students, the majority of the students are gypsies, many of them are over-aged	Budapest
9.	school principal	M		primary and secondary school, normal	Budapest, XIV. district
10.	school principal	F		primary school	Hejőkeresztúr, village
11.	school principal	F		primary school, it is one of the oldest elit elementary schools in the capital	Budapest, II. district
12.	parent	F		coupled parent, three children (6,9,12 grades, church school), occupation: teacher, no home office for the father	Budapest, III. district
13.	parent	F		coupled parent, two children (8,10 grades), occupation:researcher, both parents in home office	Budapest, XII. district
14.	parent	F		coupled parent, four children (6,8,11 grades and one student in university), occupation: librarian, both parents in home office	Sopron, city
15.	parent	F		coupled parent, two children (6 and 7 grades), unemployed, one of the children with more severe learning difficulties (speech impairment, dysgraphia, dyslexia)	Balatonföldvár, city
16.	student	M	17	11 grades, secondary (church) school	Sopron, city
17.	student	F	16	10 grades, secondary school	Budapest
18.	student	F	18	12 grades, secondary school	Kaposvár, city
19.	student	M	11	4 grades, primary school	Budapest
20.	student	F	11	4 grades, primary school	Dunakeszi, city
21.	Rep. of trade union				
22.	Rep. of Educational Authority				

([1]) Students only.

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