The Switch to Distance Teaching and Learning in Finland During the COVID-19 Pandemic (2020–2022) Went Technically Well but Was Emotionally Challenging

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Chapter 4
The Switch to Distance Teaching and Learning in Finland During the COVID-19 Pandemic (2020–2022) Went Technically Well but Was Emotionally Challenging

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Abstract In this chapter, we analyze and discuss teaching, learning and well-being in Finnish education during the COVID-19 pandemic between Spring 2020 and Fall 2022. First, we analyze the preconditions, such as teachers' and students' digital competences and the digital infrastructure necessary to switch to distance teaching and learning. Second, we present the results of a survey concerning the organization and experience of teaching and learning during the COVID-19 pandemic. Third, we discuss the engagement and well-being of teachers, principals and students during the pandemic based on survey data. During the pandemic, teachers developed digital pedagogy and students enhanced their digital competence, and several digital pedagogy and co-teaching innovations were created. However, we identified decreased engagement among students, teachers, and principals during the pandemic and an increase in stress and burnout among teachers and principals. Principals felt the impact of the stress their teachers faced, and teachers struggled to make up for the differing efforts among families to cope with distance learning. Overall, the switch to distance teaching and learning was organized effectively, but the distance-learning period weakened the equality of teaching and the conditions that encourage learning and well-being.

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Introduction

Over the last 3 years, the COVID-19 pandemic has influenced the teaching, learning, and well-being of entire school ecosystems around the world and at all levels of education (UNESCO, 2022; United Nations, 2020). This is because almost all countries implemented different durations and types of distancing policies to limit the spread of the infection. There is evidence that the pandemic resulted in teaching and learning loss as well as a decrease in well-being from schools all over the world. Teaching loss – meaning that teaching is substantially disrupted or that it is not possible to realize all planned teaching – transpired because of a lack of digital devices and connection to the internet. Learning loss occurred when learning and practicing different skills became more difficult due to the transition to distance education. Learning loss has been especially notable in school subjects where skills are typically practiced under the supervision of a teacher, such as mathematics. Also, the personal learning process may have been temporarily disrupted or completely stopped due to various factors, for example, a lack of motivation or self-regulation skills, anxiety, or a lack of support (Reimers, 2022). Finally, a decrease in well-being is a result of increased burnout among students, parents, teachers and principals and decreased engagement (Salmela-Aro et al., 2020, 2021).

Although Finland is heavily committed to a decentralized decision-making process in education, the national government decided to close schools from 18th March until 13th May 2020 and advised schools to make the transition to distance teaching and learning. However, first-, second- and third-grade pupils and students with special needs accomodations were allowed to go to school during the distance learning period. In the beginning of the autumn semester of 2020, decision-making power was returned to local authorities and education providers. However, the Ministry of Education and Culture advised schools to follow heightened hand hygiene protocols, to offer tests to teachers and students who feel sick, and to practice distancing in public spaces. In the case of positive test results, the school principal was advised to contact the appropriate medical unit for infectious diseases. They were guided to assess the situation and take the required measures, such as organizing distance teaching for the infected student(s) or entire school, as needed.

According to a search of national and local newspapers' databases for the academic year 2020–2021, schools in some municipalities switched to distance teaching and learning for 2 or 3 weeks in response to rising infection rates. Beginning in autumn 2021, school closures decreased dramatically because the Finnish Institute for Health recognized that the closing of schools had no impact on the number of COVID-19 infections (Juutinen et al., 2021). However, educators continued to utilize distance teaching for infected students or whole classrooms through distance when necessary.

Reimers (2022), in their summary of the experiences of teaching and learning during COVID-19 in 14 countries, indicated that teachers found it challenging to

manage their instruction appropriately. Transforming education during the pandemic required innovation throughout all levels of the education system. These innovations have been necessary to overcome the challenges that education systems are facing, such as learning loss, dropouts, increased polarization and heterogeneity, and worsening well-being. An example of teacher creativity in Finland during the first COVID-19 year is highlighted in Iivari et al. (2020), who described how two fifth-grade teachers began to work as a team and divide their workload by sharing online class responsibilities. The teachers decided that a school day would consist of two to four live lessons a day via Google Meet. Half of the lessons were taught by one teacher, half by the other. After a 20-min live teaching session, students had 40–50 min for individual work. Following the individual work period, the class gathered again on Google Meet to discuss the outcomes. Each of the day's tasks were sent to the students the evening before class. At the end of the school day, the teachers checked the tasks in Google Classroom and planned the lessons together for the next day. This type of team-teaching was engaging for both teachers and learners, and the success with distance teaching in this case was attributed three main factors, First, both the teachers and learners were familiar with the Google Classroom format and had the appropriate digital skills and tools. Second, the teachers had quality training and were able to generate solutions to new challenges. Third, students had internet connections at home, and the school loaned laptops to those without one. However, there were still challenges in this distance learning space. Although the students and teachers were able to communicate and complete their assignments, the teachers were not able to support the engagement and well-being of all learners. In addition, the students lacked peer support and informal collaboration sessions.

Many researchers have studied the impact of COVID-19 on the education sector, such as on teacher workload, uses of education technology, the appropriate pedagogy to utilize for remote teaching, and learning content adaptation (Amarachukwu Nkechi et al., 2021; Chadwick & McLoughlin, 2021; Leonardi et al., 2021; Upadyaya et al., 2021). The results show that there were challenges in the use of pedagogy in online teaching and learning. This chapter focuses on the general success of Finland's transition to distance teaching and learning during the first and second pandemic years and the relatively small learning loss seen as a result (Lerkkanen et al., 2022; Metsämuuronen & Nousiainen, 2021; Riudavets-Barcons & Uusitalo, 2023). We also highlight a decrease in principal, teacher, and student well-being and engagement during the pandemic. We first analyze the preconditions for change from traditional classroom teaching to distance teaching, that is, existing teacher and student education technology skills and technological infrastructure. Second, we review national follow-up surveys and research papers from the early pandemic period to study student learning and well-being. Finally, we present our own COVID-19-related education sector studies, which focus on teachers and principals.

The Situation Before COVID: Pre-Pandemic Teacher and Student Surveys

Compulsory education in Finland comprises 1 year of early childhood education, 6 years of primary education and 6 years of secondary education (Finnish National Agency of Education [EduFi], 2022). Educational equality and equity have been important values and aims at all levels of Finnish education since the 1970s. As a result of this policy, free education is provided at all levels, as well as counseling, health services, and meals. Finnish special needs education aims to integrate all learners into the same general education classrooms as their peers and to support their learning. Primary and secondary teachers are responsible for monitoring the individual needs of learners and preparing pedagogical plans for enhanced or intensified support as needed. However, equality has decreased in Finland over the last 10 years, especially regarding family socio-economic background (Ukkola & Väätäinen, 2021).

Another important characteristic of Finnish education policy and practice is collaborative and long-term planning of strategy and curriculum. There have been six official national-level digital education or Information and Communication Technology (ICT) strategies. Four of these have been integrated into curriculum and hundreds of government-funded development and in-service teacher training projects over the last 35 years (Mahlamäki-Kultanen et al., 2014). The national framework curriculum for compulsory education emphasizes student competency of transversal skills. These skills include: the use of digital tools in diverse and creative ways; collaboration and networking with digital tools; and working with data, information, and knowledge. In-service training focused on the use of digital pedagogy, helping teachers with instructional design, and the use of digital tools and platforms to support students' learning and well-being (Kumpulainen, 2017; Niemi, 2015). In 2017, 2500 tutor-teacher positions were established with funding from the Basic Education Forum (MEC, 2020). Tutor-teachers are required to complete fewer teaching hours than other classroom teachers, which allows them to spend more time supporting their colleagues. These tutor-teachers are educated to support teachers in the use of digital tools, the organization of inclusive education, and the learning of transversal competences in the classroom.

Before COVID-19 began to spread, Finland already had a robust digital infrastructure, and Finnish people were active users of digital services. According to Digibarometer 2019 (Ali-Yrkkö et al., 2019), Finland ranked third in international comparisons the two previous years in terms of overall use of the internet and people under than 55 reporting using the internet frequently (Tilastokeskus, 2019). In a European ySkills study conducted between 2020 and 2022, Finnish adolescents ranked highest in perceived digital skills (yskills.eu, 2020; see also Salmela-Aro & Motti, 2022). According to the European Commission (2018), Finnish people are ranked highly in the area of general digital skills and are global leaders in advanced digital skills. Consequently, technical pre-conditions for distance teaching and

learning were sufficient, and most parents already possessed the basic skills needed to support distance learning.

According to the IEA International Computer and Information Literacy Study 2018 (Fraillon et al., 2019), all schools in Finland have access to the internet, and 93% of compulsory school students had an e-mail account for school-related use before COVID-19. Both percentages are significantly above average among the countries that participated in the study. Almost all schools have versatile digital tools available, including software for working with text, numbers, and pictures, as well as learning management systems. In this pre-pandemic study, 83% of schools reported that it was possible to have digital tools in the classroom, and there were computers in one-third of Finnish classrooms at all times. Finland ranked fourth in the use of the internet in education, following Sweden, the United States, and Estonia (Ali-Yrkkö et al., 2019).

Tanhua-Piiroinen et al. (2019) conducted a national follow-up study that considered students' and teachers' digital competences using a representative sample of about 4500 teachers and 4000 second-grade, 5000 fifth grade, and 5000 eighth-grade students. This study provided a realistic picture of the use of digital tools in teaching and learning prior to the pandemic. It included both survey questions and items measuring digital competence in realistic situations. According to the study, 66% of second graders had access to a tablet or other digital tools at school, while 11% of fifth graders had their own tablets and 74% of them were able to use a shared tablet or smartphone at school. Although many students had access to devices at school, access to these devices at home was an issue for some, particularly among families of lower-socioeconomic status.

According to the follow-up study (Tanhua-Piiroinen et al., 2019), most eighth-grade students used digital tools daily for communication, social relationships, and entertainment before COVID-19 (Fraillon et al., 2019). Many of these students used digital tools 'sometimes' for producing and sharing digital content. The 2018 Organisation for Economic Co-operation and Development (OECD) TALIS survey (2019) showed similar findings related to the use of digital devices in Finnish schools before COVID. However, the survey identified differences between the competences related to the use of digital tools possessed by students from different socio-economic backgrounds. The survey indicated that there was inequality in Finland based on socio-economic backgrounds (Ahtiainen et al., 2020; Karvi, 2020). According to PISA 2018 (Leino et al., 2019; OECD, 2019), Finnish 15-year-old students spent an average of 74 min at school and 2 h and 50 min out of school on the internet. About 50% of all students searched the internet for information, 65% completed their homework with a computer at least twice a month, and 90% used the internet to complete their homework at least twice a month. However, Saarinen et al. (2019) recognized the challenges of integrating digital tools into learning.

Returning to the follow-up study by Tanhua-Piiroinen et al. (2019), the digital competence of teachers markedly improved from the previous year. Approximately 38% of teachers felt that they had an advanced level of digital competence and only

10% felt that they lacked digital competence. There was some variation in teacher competences between municipalities. Teachers reported that they used digital learning environments, on average, in half of their lessons, and that they presented information with the help of digital tools in most lessons. According to the International TALIS 2018 survey (OECD, 2019), Finnish teachers were making good progress with the use of digital tools in teaching and learning and in acquiring digital competence.

In summary, based on the pre-COVID surveys and national follow-up studies, there were good preconditions for switching to distance teaching and learning, such as teacher and student digital competences and established digital infrastructure (Tanhua-Piiroinen et al., 2019).

Teaching and Learning During COVID-19

After the school closures in 2020, Ahtiainen et al. (2020) collected representative data from principals and teachers from all Finnish municipalities, as well as from students in grades 4 through 10 and parents and guardians of students in grades 1 through 10. They recognized that the rapid transition to distance-learning went relatively well. However, students experienced distance learning in different ways, and most teachers felt that their workload was higher than in the pre-pandemic conditions. One-third of primary school students believed that they learned less than usual during the distance-learning period. On the other hand, teachers felt that their own digital skills had developed during that time. Moreover, one-third of the teachers reported that they had increased collaboration with other teachers. Nearly all principals reported that their school provided opportunities for teachers to share their experiences regarding distance-teaching arrangements. Challenges were most often related to students' devices and teachers' equipment and network connections. Nearly two-thirds of principals estimated that at least half of their school's teachers had reported pedagogical challenges related to the implementation of distance learning. Parents and guardians had to take more responsibility for their children's learning than usual, and about half of them felt that this increased their stress level.

The Finnish Education Evaluation Centre (Metsämuuronen & Seppälä, 2022) summarized their pandemic-era survey outcomes (e.g., Goman et al., 2021; Metsämuuronen & Nousiainen, 2021) and other relevant studies and reviews in Finland (e.g., Bernelius & Huilla, 2021). They argued that distance teaching and learning was not appropriate for all students, and a significant portion of learners at all levels of education experienced study-related stress and problems related to their study capabilities. Those students who had internal or external motivation, self-regulation skills and strong support from their families suggested they learned as much or more in distance education than in a normal classroom setting. However, those with low motivation and self-regulation and low support from families seem to have struggled. New methods of teaching and student guidance have since been developed at all levels of education (Goman et al., 2021). Considering these new

developments, fewer students are expected to fall behind if distance education occurs again.

A national sample-based assessment of ninth-grade students' learning outcomes in mathematics was administered 1 year after Finland switched to distance learning during the COVID-19 pandemic (Metsämuuronen & Nousiainen, 2021). Finland has seen a downward trend in students' performance in mathematics since 2006, and the post-COVID distance teaching and learning assessment deepened that trend. Moreover, the difference between high-achieving and low-achieving students grew. The researchers interpreted the change as a possible result of the COVID-19 pandemic. In particular, vulnerable students and those who had problems related to motivation, workload, and learning felt that the progress of their studies was slower and that the support they received from the school was weaker than that provided to other students (Goman et al., 2021). Vulnerable groups in Finland include those with an immigrant background, learners in need of special and enhanced support, and learners with weak information network connections (Metsämuuronen & Nousiainen, 2021). There were no significant differences in performance among different types of municipalities, between Finnish- and Swedish-speaking schools, or between genders. However, the differences between schools increased from previous assessments. This increase is a result of an increase in regional differences, such as the unemployment rate and the socio-economic backgrounds of parents in the region (Nissinen et al., 2018).

Based on an assessment of ninth-grade students' learning outcomes in mathematics, Metsämuuronen and Nousiainen (2021) argued that distance teaching influenced student responses. For example, the responses often lacked arguments and evidence of reasoning processes, especially among the lowest achievement group. The researchers hypothesized why there was a sharp drop in the achievement of this group based on the background variables. They argued that the lack of interest, self-directedness, and motivation of the low-achieving students, combined with the possible lack of a control mechanism at home, influenced the decrease. On the other hand, guardians belonging to higher socio-economic groups, especially those with degrees in higher education, were generally more involved in their child's schooling. In these families, the guardians ensured that the connections needed for the distance lessons were functional, the lessons were attended, and the assigned homework was completed.

Regarding elementary students, a recent Finnish study identified lower reading skills among 198 grade 3 students during the COVID-19 pandemic compared to their peers before distance learning (Lerkkanen et al., 2022). More specifically, they identified slower learning fluency and decreased comprehension (Lerkkanen et al., 2022). There was little change seen in math performance.

Our own datasets collected from students allowed us to identify both different groups of students and different phases in student well-being during the pandemic (Salmela-Aro et al., 2021, 2022). Based on our longitudinal data collected both before and during the pandemic from 2500 students in the Helsinki area (Salmela-Aro et al., 2021), we were able to identify both those whose engagement increased, leading to less chance of burnout (24% among grades 5–6, and 16% among those in

grades 7–8), and those whose engagement decreased, increasing chances of burnout (76% among grades 5–6, and 84% among those in grades 7–8). Thus, burnout among students increased and well-being significantly decreased. We also identified that students who indicated better socioemotional skills, curiosity, grit, resilience, and social skills were more likely to show increased school engagement during the pandemic (see also Guo et al., 2022). Moreover, those students were more likely to be from a higher SES (Salmela-Aro et al., 2021). Unfortunately, the results showed that among all students in our longitudinal study, loneliness increased, and relatedness decreased during the pandemic (Salmela-Aro et al., 2021, 2022).

We can identify changes in school burnout in terms of student feelings of exhaustion, cynicism, and inadequacy through the large-scale Finnish school health data. This data includes students from grades 8–9 as well as high school and vocational school students (see also Salmela-Aro et al., 2022). We can identify trends in 15 years of school burnout starting in the year 2006 until the pandemic. These results show that school burnout increased among students in grades 8–9 as well as in high school students (See Figs. 4.1, 4.2, 4.3, and 4.4). Moreover, girls in Helsinki showed a dramatic increase in all the components of school burnout (exhaustion, cynicism, and inadequacy) during the pandemic (See the last three Figs. 4.2, 4.3, and 4.4).

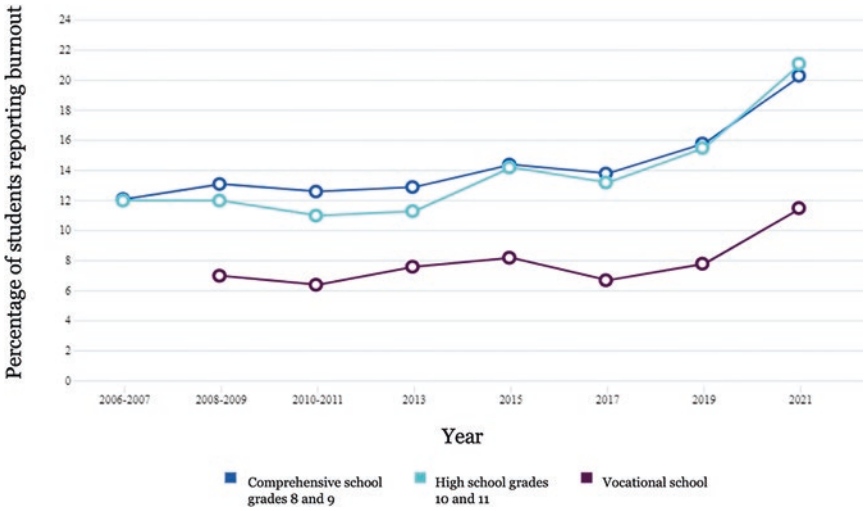

Fig. 4.1 Change in student reports of school burnout before and during the pandemic. Note: This information is adapted from Finnish school health data. The legend and labels were translated from Finnish to English

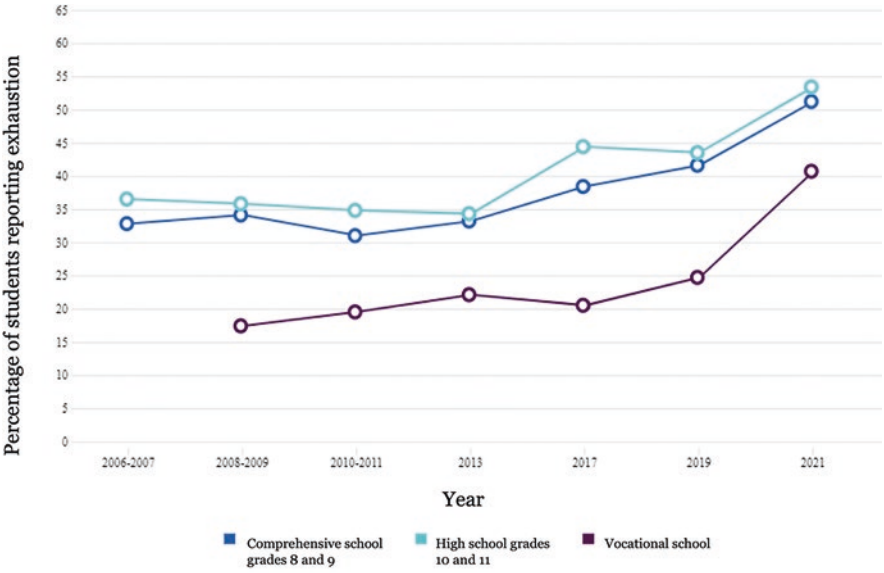

Fig. 4.2 Percentage of students reported exhaustion among girls in Helsinki. Note: This information is adapted from Finnish school health data. The legend and labels were translated from Finnish to English

Principal, Teacher, and Student Experiences of Teaching and Learning During COVID-19

Together with the Trade Union of Education (OAJ), we surveyed teachers regarding their working conditions from Spring 2020 to Spring 2022 (Salmela-Aro et al., 2020). The COVID-19 period highlighted the importance of teachers, regardless of the level at which they work. However, there is clear evidence of increased teacher burnout during the pandemic (Figs. 4.5 and 4.6).

Teachers' work engagement – including energy, dedication, and absorption – and work burnout – including exhaustion, cynicism, and inadequacy – profiles changed between May 2020 and Fall 2021. In May 2020, 10% of teachers identified as burned out, 37% as at risk of burnout, 11% as engaged-exhausted and 42% identified as engaged. In fall 2021, only 20% were engaged, whereas 29% were engaged-exhausted, 14% were suffering burnout, 9% were burnout-cynical and 29% were at risk of burnout. These results show that teacher burnout approximately doubled during the pandemic, and the number of engaged teachers was cut in half. Thus, we determine the pandemic had severe and long-term well-being costs for teachers.

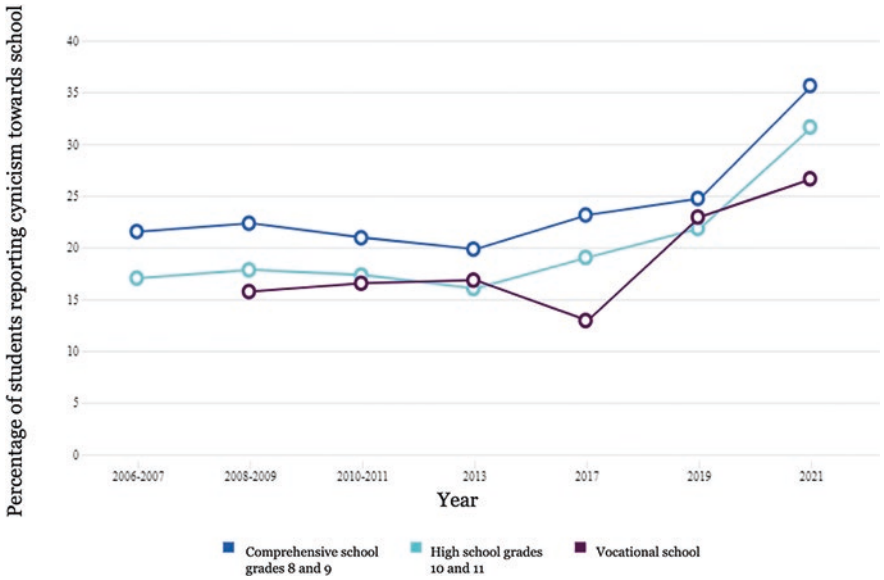

Fig. 4.3 Percentage of students reported cynicism towards the school among girls in Helsinki. Note: This information is adapted from Finnish school health data. The legend and labels were translated from Finnish to English

Despite these challenges, we were also able to identify some silver linings. Information collected every 6 months during the pandemic from May 2020 to May 2022 from about 4500 teachers in Finland indicated that teachers' work engagement decreased between spring 2020 and December 2021 (See Figure, solid line). However, work engagement started to recover in the spring of 2022. Similarly, teachers' work burnout increased after May 2020 during every measurement until December 2021 (See Fig. 4.7 below, dotted line). It then showed a moderate decrease during May 2022. During the last measurement in spring 2022, rapid recovery was seen in work engagement and teacher burnout partially recovered. These important results show how teacher motivation towards work started to recover earlier. This silver lining stands in contrast to the long-term effects of the pandemic, which have cast a long shadow on teachers' well-being and related work ability.

According to the principal barometer, which is based on data collected among all principals in Finland in collaboration with SURE, the Finnish principal organization, the number of principals who were exhausted or at risk of exhaustion increased during the pandemic from the spring of 2019. Additionally, the 2022 results showed that the proportion of principals indicating burnout is twice as high as it was in 2019 (See Fig. 4.8). Before the pandemic, about 10% of principals identified as burned out; the number was almost 24% in 2022 (See Fig. 4.9). We identified three profiles:

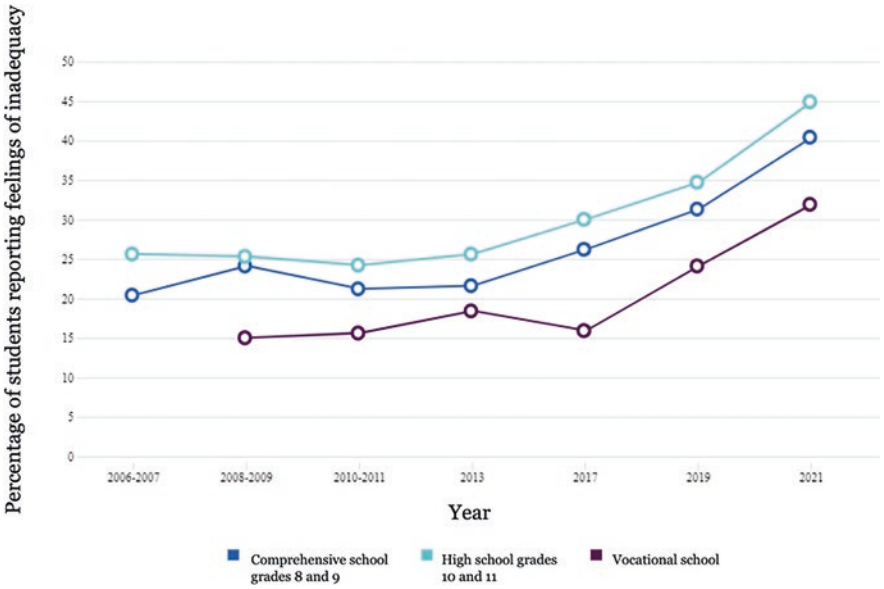

Fig. 4.4 Percentage of students reported inadequacy among girls in Helsinki. Note: This information is adapted from Finnish school health data. The legend and labels were translated from Finnish to English

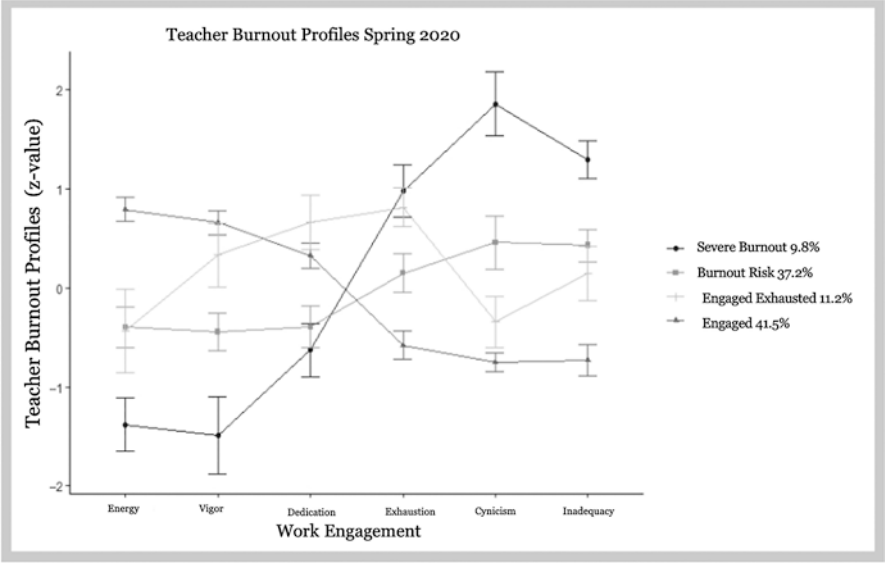

Fig. 4.5 Teacher's burnout profiles spring 2020

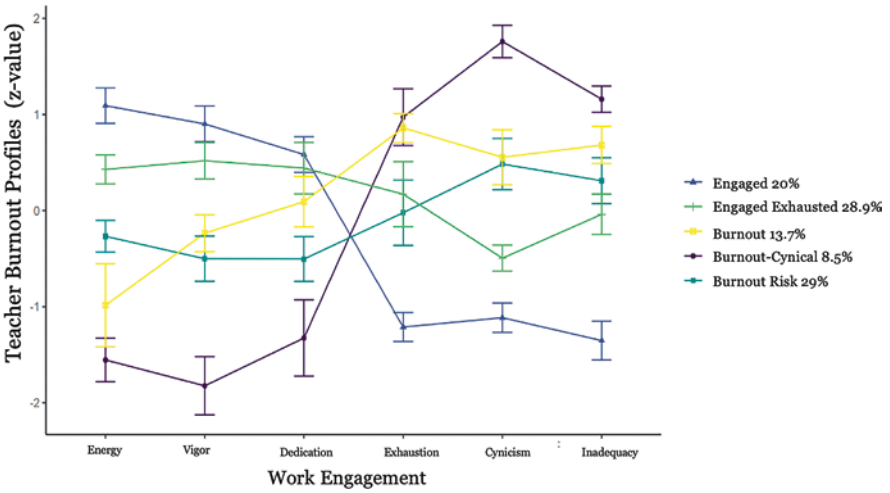

Fig. 4.6 Teacher's burnout profiles fall 2021

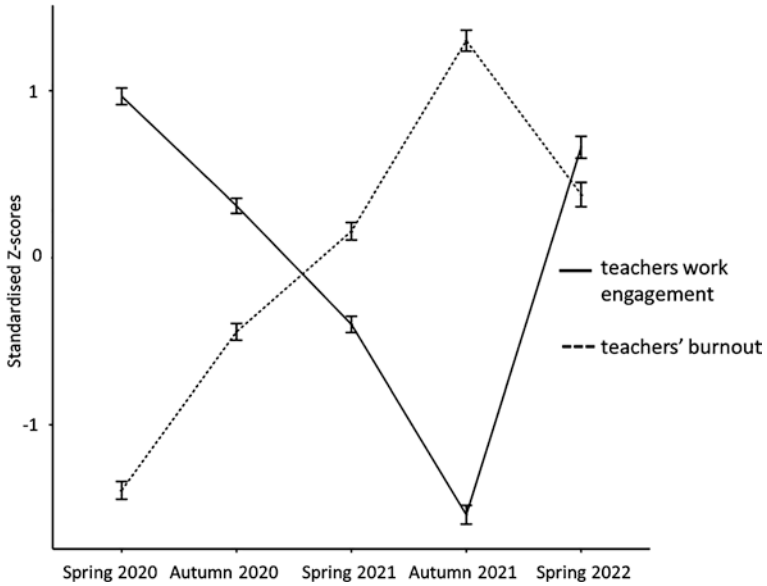

Fig. 4.7 Teachers' standardized work engagement and work Burnout from Spring 2020 to Spring 2022

burnout, normative (or at risk of burnout), and engaged. Almost half of the principals were identified as at risk of burnout (normative). Principals play a key role in the context of the school ecosystem, and they had to lead the whole system during the COVID-19 crisis. Principals are burned out after being loaded with work and responsibility for almost three crisis years. Thus, we find the crisis has had a

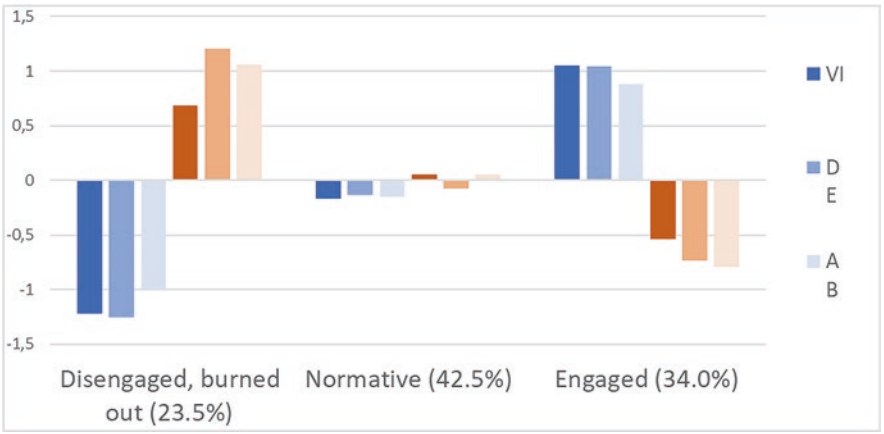

Fig. 4.8 Three Principal Work Engagement and Burnout Profiles in 2022. Note: From darkest to lightest blue – vigor, dedication, and absorption. From darkest to lightest orange: exhaustion, cynicism, and inadequacy

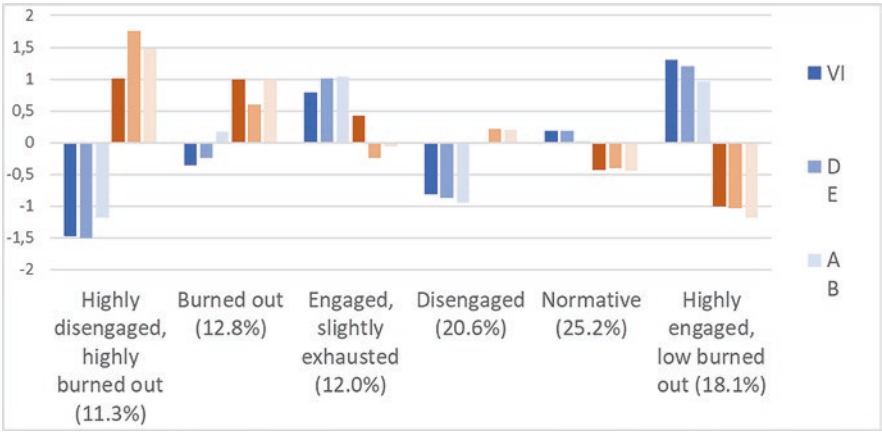

Fig. 4.9 Six Principal Work Engagement and Burnout Profiles in 2022. Note: From darkest to lightest blue – vigor, dedication, and absorption. From darkest to lightest orange: exhaustion, cynicism, and inadequacy

long-term effect on principals' work-related well-being. We also identified six profiles (See Fig. 4.9). These results show that about 12% of principals were simultaneously overcommitted and exhausted. Now is an important phase in which to recognize these different principal profiles and offer opportunities for recovery. We need a resilient educational system more than ever before.

Discussion

In summary, the transition to distance teaching and learning went technically well, but the distance-learning period weakened the equality of teaching and the conditions for learning. The challenges brought by the pandemic can be analyzed from three perspectives: the teaching and learning loss; student, teacher, and principal well-being loss and the challenges brought by distance-teaching pedagogy.

Preconditions for a Smooth Transition to Distance Teaching

In the spring of 2020, the nationwide shift to distance teaching and learning was accomplished without significant technical problems. During the beginning of the second COVID-19 school year, schools in several municipalities switched to distance teaching and learning for 2 or 3 weeks, following the recommendation of medical authorities at the local level. However, since autumn 2021, school closures have decreased dramatically, as the Finnish Institute for Health recognized that the closing of schools had no impact on COVID-19 infection rates (Juutinen et al., 2021).

There are several reasons why the shift to distance teaching was relatively successful. First, all Finnish teachers are educated in master's-level programs, and their digital skills are at an appropriate level. According to a COVID-19 follow-up study (Tanhua-Piiroinen et al., 2019), about 50% of secondary and primary teachers stated that they have basic digital competency, and about 40% stated that they possess advanced competency. König et al. (2020) emphasized that teachers' digital competences and the opportunities to learn those skills are instrumental in adapting to online teaching. High-quality teachers, combined with local-level decision making in decentralized education systems, made it possible to make decisions at the teacher level, including how to organize distance teaching, what kind of digital pedagogy will be used, and how teachers will collaborate. In addition to their education, there are two main reasons for digital pedagogy competence among teachers. Since the 1980s, digital strategies have been made available and resources have been allocated for their implementation via support for teacher professional learning. Despite relatively high digital competence, some schools faced a lack of digital competence among teachers. This resulted in an increased stress for principals during the COVID-19 pandemic. Therefore, it is important to support teachers with low digital competences moving forward. In addition to teacher digital competence, student competences were also recognized as a component in the successful transition to distance teaching and learning (Tanhua-Piiroinen et al., 2019). The third reason for the successful transition to distance teaching was the level of good digital infrastructure throughout the country. In Finland, almost all schools had versatile digital tools available at the start of the pandemic, including software for working with

text, numbers, and pictures as well as learning management systems. Laptops were loaned to students who did not have a laptop at home, and companies also donated laptops to students. A lack of digital tools was not reported by any surveys during COVID-19. König et al. (2020) emphasized the availability of digital tools as a precondition for success in distance learning.

Based on the national surveys completed during the pandemic, many believe that practical guidelines could be offered if distance learning were implemented again. Additionally, these surveys found that more attention should be given to supporting students individually and to guiding students through peer support and collaboration (cf. Ahtiainen et al., 2020). Teacher collaboration and networking should also be supported, according to the surveys. Teachers at the same grade level in primary school and those who teach the same subject in lower secondary schools could benefit from such collaboration. These teachers might plan and practice lessons together to support the education of all students, including those with special needs. (cf. Iivari et al., 2020). International collaboration is also needed to identify the best practices for distance teaching and learning and to address future crises.

Learning and Well-Being Loss by Students

We can identify well-being loss among both teachers and students and learning loss among the students during the coronavirus period. Notably, the difference between high-achieving and low-achieving students increased during this time. Vulnerable students – including those who had problems related to motivation, workload and learning during the exceptional circumstances – felt that the progress of their studies and the support they received from the school were less than that achieved and received by other students (Goman et al., 2021). For some students, remote working and focusing on tasks was difficult to achieve independently and would have required more support. For example, these students may have benefitted from remedial teaching, extra support, limited distraction, or a study plan. As a result, learning loss arose for some students (Metsä-Muuronen & Nousiainen, 2021). Thus, we have identified increasing heterogeneity among Finnish students. The performance of most low-achieving students has decreased largely due to a lack of self-directed learning skills and motivation to participate in distance teaching and learning. This decrease can also partially be explained by low support from guardians and a lack of learning spaces at home.

Although the emergence of some learning loss during the COVID-19 pandemic is evident, less is known about how much genuine and permanent learning loss emerged. Therefore, it is important to map the issue in more detail in future national learning outcome assessments. In addition to the long-standing decline in learning outcomes, the COVID-19 era accelerated the growing differences between schools

in Finland and in other Nordic countries (e.g., Kavli, 2018). This can be seen in the 2020 national assessment of learning outcomes in mathematics (Metsämuuronen & Nousiainen, 2021). Consequently, more support should be given to low-performing schools to organize more effective special education and counseling.

The crisis has also revealed how learning and well-being go hand in hand (Refer to the OECD Learning and Teaching Compass). Results reveal increases in feelings of burnout, inadequacy, exhaustion and cynicism among students, principals and teachers. The lack of well-being is related to perceived loneliness and externality, among other factors (Junttila, 2021) and may be connected to the emergence of a skills gap. The crisis highlighted that schools perform various important functions. School is an important ecosystem for collaboration and relatedness, which is an important psychological need for children and adults. Thus, closing schools should be avoided as much as possible in any future crisis. In addition, special efforts should be made in the future to assure that vulnerable groups receive the support they need. The crisis also revealed the important role of social-emotional skills, in addition to academic skills, in a student's success. Social-emotional skills should be promoted at schools, thus encouraging more resilient students and school ecosystems in the future (Guo et al., 2022).

Challenges in student self-direction and self-regulation skills seem to be the main reasons for the teaching loss turning into a learning loss in Finland and elsewhere (Goman et al., 2021; Schleicher, 2020). Motivated and self-directed students with adequate social-emotional skills – such as grit, curiosity, resilience, and social skills – did not suffer as greatly from the lack of in-person teaching. A lack of self-direction was especially evident in some students' goal setting and in their lack of peer interaction in learning situations. Students who face challenges in self-direction require teacher guidance and support in distance education. Therefore, it is important to understand how self-direction can be developed in the school context. On the other hand, there are indications that during the pandemic shutdowns, parents belonging to higher socio-economic groups and, more importantly, more educated parents were more interested in their children's learning (Metsämuuronen & Nousiainen, 2021). In these families, the parents ensured that the connections needed for remote classes were functional, that classes were attended, and that homework was completed.

According to Goman et al. (2021), students of all ages were burdened during the pandemic by their studies and by incompetence related to readiness for learning. The support students received during distance learning was not sufficient in many respects, and there were also challenges in organizing and distributing counselling in basic education, upper secondary schools, and vocational schools. The lack of face-to-face teaching increased the need for support, especially for learners who had more significant problems with the progress of their studies. In particular, the needs of learners whose native language is not Finnish or Swedish were not effectively identified, which resulted in a special learning and competence deficit for this group of learners during the crises.

Therefore, the Government Equality Development Program for Compulsory Education and Early Childhood Education, which was started just before the pandemic, has become even more critical to Finnish society (MEC, 2020). This program aims to strengthen educational equality and learning outcomes, broaden student possibilities to receive support and guidance, and enhance the quality of teaching. The Right to Learn Project allocates resources for equalizing the effects of the emergency, for providing guidance and support, and for the development of digital environments. Metsämuuronen and Seppälä (2022) argued that in the coming years, the effectiveness of these measures must be systematically monitored at both the national and local levels.

The pandemic had a significant influence on both teacher and principal well-being. Immediately after the crisis, work engagement among teachers decreased while work burnout increased. However, we now find some signs of recovery among teachers. Interestingly, the impact on principal work engagement and work burnout was delayed. Principals needed to lead during the crisis, act as role models, and make important and challenging decisions. They also felt that the teachers' increased burnout was a serious challenge. Thus, principals are now suffering from work burnout at twice the frequency exhibited before the pandemic. It is important to learn from the pandemic so that we can rely on a more resilient school ecosystem in the future, and resilient principals are crucial to that ecosystem.

Future Challenges

We do not yet know the extent and long-term duration of the learning loss, which may be strengthened further by the continuing decline in the competence of young people in Finland that has been happening for many years (Ukkola & Väätäinen, 2021). This decline seems to be significantly connected to the support and guidance available at schools, the socio-economic background of families, and the marginalization and lack of self-direction among students. Therefore, it is important to identify student needs – regarding support in learning, cooperation, and self-direction – and develop effective solutions to support various student circumstances. In addition to the growing differences in learning outcomes among individuals, there is an increase in differences between school-level learning outcomes. Finland should recognize the diverse needs of schools related to teaching and guidance and develop effective solutions to support these school needs. Based on national evaluations in Finland, Goman et al. (2021) suggested that the challenges can be addressed by developing learning support, guidance, and professional learning opportunities for teachers. In addition, better national guidance is needed, as well as monitoring, evaluation, and development of teaching and teachers at the local level. Strengthening self-direction and study readiness for students serves both to prepare for similar exceptional circumstances in the future and to increase the integration of multimodal teaching and different learning environments at different levels of education.

Despite some of these challenges, the use of digital devices in learning has increased, and this increase has changed learning. For example, online collaboration, information retrieval, and information processing have facilitated learning and made it possible to learn together and to learn outside of school. The issues regarding equality include how to support the use of digital devices and encourage the development of sufficient digital competence for all students to enable continuous learning and preparation for working life. In the future, digital pedagogy must continue to be developed at all schools so that the needs of special groups and learners from diverse circumstances are considered.

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