

# EduRESCUE Final Report: Impact Stories

## Impact Story 1.

### Implementation of equality and equity and consideration of individual needs in educational policy decision-making

#### 1. Societal challenge

According to research, the COVID-19 pandemic increased inequality in Finnish society and the education sector. School closures and quarantines of varying lengths due to the pandemic raised concerns about the well-being and learning gaps of children and youth, especially those who already faced challenges in well-being and learning before the pandemic. Challenges to equal and equitable access to quality basic education during the exceptional circumstances were also highlighted. During distance education, support for well-being and learning was largely left to the varying resources of homes and parental support, which placed children in an unequal position. Children's rights were dependent on parents' capabilities, although the responsibility to ensure children's equal opportunities for learning and well-being lies with authorities, such as schools and social and health care professionals. Variation also occurred in, for example, the functionality of internet connections required for distance education and the quality of digital devices, as well as in learners' self-regulation skills to manage independent study. According to KARVI's assessment, the goal of equality was poorest achieved during the exceptional period for basic education students who needed special support or belonged to linguistic minorities. The transition to distance education led to the endangerment of children's rights. Certain groups of children experienced more significant violations of their rights compared to other children. For some children, the violation of rights can be considered to continue even in 2025, when the learning and service gaps created during the pandemic, for example in mental health services, have not been bridged.

The first impact objective of the EduRESCUE project focuses on supporting the implementation of equality and equity in education and the consideration of individual experiences and needs in educational policy decision-making and organization of teaching. Children's individual experiences of the pandemic period were investigated through interviews and surveys with children and youth. The voices of youth and young adults were heard through the Silent Voices survey. Particularly with the youth survey, we aimed to reach those who felt they had not been heard during the coronavirus pandemic. Compared to previous surveys, the young people and young adults who responded to this survey reported more challenges in well-being, learning, and social relationships. The results challenge us to consider various more flexible possibilities for individual ways to attend school, study, and receive support for learning and well-being. Distance education practices should be developed to best support the needs of different children and youth and thus engagement in studies and learning. Special attention must also be paid to the availability of learning support and responsiveness to individual needs in the future, so that children's and young people's equal and equitable right to education is not endangered. Our research recommendations can be found, among other places, in the report 'Silent

Voices: Young People's Experiences of the Impact of the Coronavirus Pandemic on Well-being, Social Relationships and Learning' (<https://www.oph.fi/fi/tilastot-ja-julkaisut/julkaisut/hiljaisia-ania>).

Challenges for the research, interaction work, and especially the Silent Voices study data collection were posed by a certain "corona fatigue," i.e., saturation with corona discussion and surveys, as well as new crises (e.g., Russia's war of aggression against Ukraine and the energy crisis), which diverted attention away from the coronavirus pandemic. On the other hand, new crises and health threats raised a research need beyond the pandemic, related to exceptional circumstances in general. Thus, we expanded EduRESCUE's focus to examine the resilience of the education system and its actors regarding crises other than the COVID-19 pandemic.

Particularly in the so-called Silent Voices study, it was noted that certain silent voices remained unheard in the data. For example, child welfare clients, those belonging to linguistic minorities, and youth with immigrant backgrounds and their experiences remained in the survey's blind spots. As in other survey studies, the majority of respondents to this survey were girls and young women.

The project studied 4th grade pupils at risk of marginalization based on the international children's reading literacy study (PIRLS). Based on the results, children whose parents have low educational and socioeconomic backgrounds are particularly at risk of marginalization. Additionally, risks are increased by experiences of being bullied at school, repeated absences, and inadequate language skills. Pupils with immigrant backgrounds have a higher risk of marginalization than pupils from the native population.

From the perspective of equal education, distance education has significant impacts on the realization of children's rights. During the COVID-19 pandemic, the right to receive education was reduced or its form was changed, but the obligation to study according to curriculum objectives remained unchanged. Despite the fact that the youngest pupils and, for example, those with special support decisions were not transferred to distance education, consideration of the suitability of distance education should be more individualized in the future. Distance education readily places children and youth in an unequal position, for example, regarding the safety of the learning environment and support for learning and school attendance. For some children and youth, the safety of the learning environment, quality of education, and support received for learning and school attendance are realized, but not for others. Distance education also makes it more difficult for teaching staff to ensure a safe learning environment, which in turn is a prerequisite for the right to education to be realized. Additionally, the right to learning and student welfare support services was weakened, which placed pupils and families needing support in an accentuated unequal position. On the other hand, awareness of guardians' possibility to homeschool their children increased during the pandemic, but from the perspective of children's rights, this way of fulfilling compulsory education has many problems regarding the realization of children's rights, which should be addressed in the future.

However, authorities' obligations do not weaken during distance education, and responsibility for learning cannot be transferred to parents. Since children's rights require practical everyday actions to be realized, it is also about securing the resources and capabilities of school community actors. In the future, it is important to ensure teachers' readiness to respond to various challenging situations so that pupils' rights are not weakened more strongly than restrictions already made and do not fall to guardians' responsibility. These readiness skills require 1) necessary digital devices and connections, 2) collaboration practices with other adults at school and

homes, and 3) competence in identifying and providing support for matters affecting pupils' learning and well-being.

From a societal perspective, the implementation of the first impact objective was also challenged by cuts and deterioration of livelihoods included in Prime Minister Orpo's government program. The government program acknowledges the growth of youth malaise and the long-term well-being and learning gap caused by the coronavirus pandemic as societal challenges, and decided to target measures "to prevent youth marginalization, and address the well-being gap and mental health problems." However, as a result of cuts made and deterioration of livelihoods, it is likely that the polarization of malaise will continue.

## **2. Multidisciplinary research and cooperation**

In examining the implementation of equal and equitable education, it was particularly valuable to have dialogue between legal sciences and educational sciences. The realization of children's equality and equity and individual needs is based on children's rights enshrined in law. It was natural to examine how the results related to children's rights, how children's rights were realized in practice, and what we could do in the future to promote their realization. The latter brings the perspective back in part to the core of educational science expertise. Natural analytical arcs were built in collaboration, combining the strengths of both disciplines. An example of such an arc was the picture of youth well-being challenges that emerged from the surveys, as well as student teachers' readiness to identify pupils' various support needs and to support and guide them to receive support in various situations threatening pupils' well-being. Based on children's and youth's rights, legal chains could be built that regulate receiving support. Through these legal chains, it was possible to examine whether children's and youth's rights are actually realized and how teacher education could increase student teachers' awareness of these rights and referral to services at school. This adds value to the impact of results and enables societal implementation at multiple levels. Collaboration between legal and educational science researchers produced joint research articles during the project (e.g., Pakarinen et al. 2023, Valtonen et al. 2024), popular articles (e.g., Sorkkila et al. 2022), symposiums and presentations for conferences (e.g., Educational Science Days), and events organized for stakeholders (e.g., Democracy Repair Shop workshop in spring 2023). In the final project year, close collaboration continued in the project's joint School Resilience book, where legal and educational research findings were combined in three chapters. Collaboration on the legal side was also expanded within the PANDEMICS program with researchers from EduRESCUE's sister project JuRe by writing together about what education providers and wellbeing areas must consider when organizing education and student welfare services for children and youth in their area, ensuring equality. A podcast episode on ensuring equality was also implemented in collaboration between the projects, with participation from Equality Ombudsman Kristina Stenman.

An important facilitator of multidisciplinary research was the regularly meeting Early Career Researchers' Pool (ECR Pool). ECR Pool activities promoted interdisciplinary collaboration in line with its objectives and supported collaboration among early-career researchers within the consortium. According to EduRESCUE researchers who participated in the activities, the group provided much-needed peer support with early-career research challenges and increased interdisciplinary understanding in complex issues, promoting the finding of a common language, especially between legal science and educational science.

### 3. Societal interaction

To achieve the equality-related impact objective, collaboration was done with various stakeholders, especially in the Silent Voices study. Collaboration with organizations supporting children's and youth's interests and well-being promoted the preparation, piloting, and dissemination of the survey study. The dialogue started with organizations already in the survey preparation phase created shared understanding between field actors' experiences and researchers. Organizations shared the survey with their target groups, which increased opportunities to reach precisely those "silent voices" that had remained unheard during the pandemic. Additionally, already in the survey preparation phase, we received abundant material and data from partner organizations that they had collected and produced, related to their target groups' well-being during the coronavirus pandemic. The materials included both reports and extensive survey data as well as more informal descriptions of observations made by organization professionals during the coronavirus pandemic. Hearing well-being supporting organizations was also central in developing the Individual Situations and Participation survey, as it enabled the inclusion of diverse well-being-threatening situations in the survey. Organization collaboration also resulted in complementary data collection: interviews with youth on the autism spectrum together with the Autism Association and two anonymous youth Digital Councils with SPR's Youth Shelters in fall 2022. Research findings and their interpretation were discussed together with organizations in regular online meetings.

Our researchers served as experts in various working groups promoting children's and youth's equality (including the Child Strategy measure 16 steering group, Future of Basic School working group, Participants' Finland action program). Our researchers also met decision-makers both in one-on-one discussion meetings (including EU Commissioner Jutta Urpilainen, former Minister of Science and Culture Petri Honkonen, Vice Speaker of Parliament Paula Risikko, Member of Parliament Eeva-Johanna Eloranta) and in larger groups of officials and experts (including presentation of Silent Voices report results to the Finnish National Agency for Education). Additionally, our researchers' expertise has been used in open support materials produced by the Finnish National Agency for Education, ITLA, and YLE News School, intended to support education providers and schools in handling crises, recovering from them, and supporting pupils' well-being.

Together with other Academy of Finland PANDEMICS program projects, an annual joint stakeholder event was organized in the University of Helsinki's public Tiedekulma. Events were attended by EduRESCUE project researchers, stakeholders, decision-makers, and media representatives. The 2023 stakeholder event was organized in collaboration with MTV. The event was streamed to MTV Katsomo and several news articles were made for MTV's news website. The 2024 PANDEMICS closing event also received good media visibility thanks to the final publication "Lessons from the Coronavirus Pandemic: Towards Better Crisis Preparedness and Crisis Management" published at the event. Chapter 3 of the final publication addressed fundamental rights, including from the perspective of school and pupil rights. The final publication was distributed to stakeholders, decision-makers, decision preparers, and other experts both at the closing event and afterward. The PANDEMICS closing event was based on the final publication's chapters. Invited dialogues were organized at the event, to which we invited selected stakeholders and other key actors relevant to the publication. EduRESCUE themes were addressed with researchers and stakeholders in all dialogues, in two of which our researchers participated: Crisis and well-being management and crisis communication, and Citizens' well-being: A city supporting every citizen's well-being – future or utopia? After the invited dialogues, the event featured

two panel discussions, of which the latter (How will the next health crisis be managed in Finland?) particularly addressed EduRESCUE research themes. The discussion included THL Director General Mika Salminen, STM Strategy Director Pasi Pohjola, FNAE Unit Head Laura Francke, Research Director and WELGO project consortium leader Ville-Pekka Sorsa, and EduRESCUE consortium leader Marja-Kristiina Lerkkanen.

The PANDEMICS program's Intermission dialogues organized in 2022, "Democracy in Health Crises" and "How Do We Build a Crisis-Resilient Society?" addressed equality and equity issues as well as children's, youth's, and families' experiences from the corona period together with decision-makers. Together with the ALL-YOUTH project, we organized a public workshop "Youth's Right to (e-)Participation" at the 2023 Democracy Repair Shop, which also addressed equality issues especially from the perspective of children's and youth's rights and participation.

From the project planning phase onward, it was clear that children and youth should be involved in the project otherwise than as research subjects. As a measure supporting societal interaction and hearing children's voices, a Children's Council was implemented, whose composition and location changed annually. In the 2022–2023 academic year, the Children's Council was implemented in a primary school in Jyväskylä, and in 2024 in a primary school in Turku. Our researchers planned multi-lesson units where various functional activities were implemented under researchers' guidance. Methods utilized included various child-participatory and activity-based methods, such as group discussions and drawing and writing tasks. The themes addressed in the Children's Council meetings were as followed:

1) What does children's right to be heard mean? Why is hearing children important, and what issues should children be heard about in their opinion? What thoughts do children have about the coronavirus pandemic and other crises, as well as the resilience needed to face them? What thoughts do children have about school well-being and factors related to it? What do children want adults to know about their thoughts?

2) What factors promote and weaken experiences of participation in peer interaction and relationships? How can different actors in the school community act to ensure that everyone can participate in positive peer interaction and form and maintain meaningful peer relationships?

The Youth Council assembled by the University of Helsinki met three times in fall 2024 to discuss youth and coping with crises. The youth provided valuable and timely perspectives on crises affecting young people and expressed their concerns about youth mental health problems and receiving timely support. Additionally, youth voices were heard, for example, in Youth Digital Councils (organized with SPR youth shelters 9/2022) and in a student panel at the University of Jyväskylä's open Ruusupuisto researches and discusses event (9/2022). Additionally, youth voices were heard in interviews with neurodiverse youth conducted in collaboration with the Autism Association (6/2022).

## Impact Story 2.

### Promoting well-being and resilience of children, youth and parents

#### 1. Societal challenge

The COVID-19 pandemic increased stress and malaise in both children and youth and their parents. Restrictions on schools, hobbies, and social life set to curb the pandemic strongly affected the daily lives of children, youth, and families. In addition to school closures, hobby facilities and youth centers were closed for long periods. The second impact objective of the EduRESCUE project was to promote the well-being and resilience of children, youth, and parents.

Children's and youth's well-being and resilience were examined with the Silent Voices survey and interviews targeting youth and young adults, by interviewing primary school children in 2022 (see impact story 1), and through longitudinal data on 5th, 6th, and 8th graders (2019–2020). Three-quarters of youth and young adults responding to the Silent Voices survey felt that the coronavirus pandemic period weakened their well-being. According to longitudinal data, school well-being decreased in 75% and increased in 25% in primary school; in lower secondary school, the corresponding figures were 85% and 15%. The results are consistent with previous national and international studies, according to which young people's depression and anxiety symptoms and concern about their own mood have increased and health is perceived as weaker than before.

Socioemotional skills were particularly studied in the project as a resilience-strengthening factor. These skills were found to often be strong in pupils who were doing well during the pandemic. Socioemotional skills are an important resilience factor, as they help children and youth adapt to changes and serve as a resource supporting school well-being, strengthening school engagement and protecting against school burnout. Different socioemotional skill profiles were identified from data collected during the corona spring. It is important to remember that even pupils with very different skills can do well at school when they are helped to find their own strengths and get to use them.

Other well-being-protective factors were found to include social resources, i.e., human relationships and support received from other people, as well as opportunities brought by the coronavirus pandemic to focus on one's own well-being and regulate one's own learning and time use.

The EduRESCUE project also studied the construction of children's and parents' vulnerability and resilience in interaction and human relationships, especially from the perspective of emotional support. According to the results, a parent's confidence in their ability to cope with parenting challenges and not being left alone reflected positively on early adolescents' readiness to form and maintain meaningful human relationships. Emotional support flexibly adapted to children's needs strengthened children's perseverance and positivity toward learning.

School closures and quarantines increased parents' responsibility for their children's teaching and learning support alongside their own (remote) work. The project also examined parents' coping, including through the Parents' Silent Voices data and in international comparative research that studied parental burnout before the coronavirus pandemic and during the coronavirus pandemic. The results clearly showed that parental burnout

increased during the corona period: mothers, young parents, and families in poor financial situations were the most exhausted, as were parents of small children, multiple children, or children with special needs. Parents were also more exhausted the longer they had been in isolation during the corona period. Additionally, home-based remote schooling and the attention and support children and youth required for remote learning were related to parental burnout.

A particularly concerning group was parents who were exhausted both as parents and at work, who had more children with special needs than non-exhausted parents and less often had social support. These parents also experienced less resilience than non-exhausted parents. It is important to consider whether resilience-related skills (such as redirecting thoughts or optimism) could be taught to parents at risk of burnout, for example, as part of family support activities. On the other hand, it is at least equally important to offer concrete support measures to exhausted parents (e.g., childcare help or cleaning help), as they seem to be left more often without support and under greater stress factors.

Additionally, the project studied how early childhood education communicated and offered support to parents during the exceptional period. According to the results, the more support a parent received from early childhood education, the less exhausted they were. Especially food aid and knowledge that early childhood education could be contacted if needed protected parents from burnout.

A significant change affecting the education system's operation during the project period was the transfer of student welfare services from municipalities to the responsibility of wellbeing services counties at the beginning of 2023. Some findings on changes in service availability have already been reported (including student welfare professionals' assessment of deterioration in the availability of medical and psychological services; Hietanen-Peltola et al. 2024), but regional differences are large and work to harmonize wellbeing services counties' operations is still ongoing. It will be interesting to follow what long-term effects the change will have on service availability and regional equality in the future.

## **2. Multidisciplinary research and cooperation**

Supporting the well-being and resilience of children, youth, and parents was fundamentally the project's multidisciplinary objective. Research on this theme, understanding problems, and tackling well-being challenges requires dialogue between psychology and educational science. Additionally, teacher education research and development of tools for teachers were an important part of applied multidisciplinary collaboration. EduRESCUE also belonged to the multidisciplinary JYU.WELL network, through which research knowledge and impact measures could spread within the research community to different disciplines (e.g., to social work and family research).

Multidisciplinary collaboration in the project was particularly promoted by thematic 3-University Teams (3U-Teams), where multidisciplinary research collaboration was done around a selected theme across university and work package boundaries, with each team including researchers from all three universities in the EduRESCUE consortium. For example, in the Parents and Families and Silent Voices theme 3U-Teams, particularly active and productive multidisciplinary research collaboration and joint publications were formed. The Parents and Families team organized an international hybrid seminar at the University of Jyväskylä in August 2022, to which researchers from outside the project were also invited, including from the University of

Jyväskylä's developmental psychology field and teacher education researchers, as well as professors of teacher education from Kyoto Bukkyo University in Japan.

Multidisciplinary collaboration in medicine, social policy, and service systems was also supported by the Academy of Finland-funded Right to Belong project led by EduRESCUE researcher Professor Niina Junntila (started 9/2022), which enables the continuation of multidisciplinary research collaboration. The projects were united by themes concerning children's and youth's well-being and loneliness, as well as common stakeholders and networks that supported each other in societal interaction and decision-making. The collaboration was concretely realized also through joint consortium days. The consortia met semi-annually at universities belonging to the consortium for guest lectures, group discussions, and joint planning.

### 3. Societal interaction

Our researchers served as experts in various working groups and forums related to promoting well-being and resilience (see expert work sheet). In 2022, we participated in preparing the Youth Well-being Program coordinated by MIELI ry, which aimed to become part of Prime Minister Orpo's government program. Our researchers participated in government negotiation hearings and provided statements, among other things, on school well-being, school enjoyment and learning, and children's and youth's loneliness.

In the PANDEMICS program's final publication, children's, youth's, and families' well-being was addressed especially in chapter 7 (Educational sector measures and living environment characteristics that secure citizens' well-being).

In collaboration with ITLA, we compiled open support material for strengthening children's and youth's well-being and crisis resilience (<https://itla.fi/tukimateriaalia-lasten-ja-nuorten-hyvinvoinnin-ja-kriisinkestavyyden-vahvistamiseen/>). The support material is aimed especially at early childhood education, basic education, and secondary education teachers and other adults.

A task package compiled in collaboration with YLE News School (<https://yle.fi/a/74-20036270>) addresses social relationships and is aimed at basic schools and secondary education students.

In spring 2022, the research-based Youth Compass online program intended to promote youth well-being was published, with EduRESCUE researchers closely involved in its development.

Our researchers were invited to speak as experts at events of our stakeholders and other key actors relevant to the theme (including interest organizations OAJ and Finnish Principals Association, and associations such as MLL, TEHY, SPR, Family Federation, Developmental Disabilities Association, and AVI). Our researchers presented our research on promoting well-being and resilience also at various research community events as keynote speakers (including Educational Science and Family Research Days) and presentations (including EARLI, ECDP, AERA conferences, Educational Science Days, Teacher Education Days, Pedaforum, and the Academy of Finland's Fair, just and sustainable society conference) and network meetings (including teacher education eTED network, THL's network of developers of services for children, youth and families, and OAJ's webinar series). Our researchers were also discussing well-being and home-school collaboration at so-called general public events and in media, such as the 2022, 2023, and 2024 SuomiAreenas, the Jyväskylä Summer event, and Yle morning TV. Additionally, we organized a discussion program at the 2025 Educa fair together with the



EDUCA flagship on the topic: Resilient School: How is a school community's psychological safety net built? To start the discussion, our researchers gave opening speeches on the psychological safety net from the perspectives of teachers, families, and children and youth. The panel discussion included our partners from the Finnish National Agency for Education, the Finnish Union of Upper Secondary School Students, the Parents' League, and Viikki Teacher Training School.

## Impact Story 3.

### Identifying learning gaps, and tools to bridge learning gaps and reduce risk of study delays

#### 1. Societal challenge

International studies show that distance education during the pandemic weakened already declining learning outcomes and increased malaise among learners, teachers, and parents. Additionally, quarantines and other changes in school practices affected children's and youth's daily lives, social relationships, and school attendance. In the EduRESCUE project, the learning and well-being gap experienced by youth was surveyed with the Silent Voices survey in collaboration with organizations. The results showed that nearly half of the youth and young adults responding to the survey felt that learning seemed more difficult than before during the coronavirus pandemic period.

In the EduRESCUE project, during the first year, examination of the pandemic-caused learning gap was targeted at the development of primary school-aged children's reading skills and mathematics skills, as well as matriculation examination results. Examination of primary school children showed that as a result of the pandemic-caused school closure, the development of reading fluency and comprehension slowed, whereas no difference was found in the development of mathematics skills (Lerkkanen et al. 2022). Reading skill development requires strong daily teacher guidance during the first years of school, for which distance education practices in the rapidly changed situation did not appear to be adequate. Together with teacher education, the EduRESCUE project examined how distance education and the emotional and interaction skills needed in it could be diversified and learning better supported in distance education (see impact objective 4).

Evidence of the pandemic's effects on learning outcomes was obtained based on international assessment studies in the PIRLS 2021 study, whose results were published in May 2023. According to the results, reading skills have weakened most among those belonging to lower socioeconomic groups. Reading skills were also clearly weaker among pupils whose parents felt the coronavirus pandemic had greatly affected their child's learning. Additionally, learning outcomes of pupils who often experienced being bullied were weaker. Among those bullied weekly, there were also more pupils with immigrant backgrounds than before (born elsewhere than in Finland and whose home language is other than the school's teaching language).

In upper secondary schools, distance education periods were of different lengths in different parts of Finland. Research results on matriculation examination data suggest that school closures would not seem to have been related to matriculation examination results. However, attention should be paid in the future to possible

longer-term effects of the pandemic on the learning gap, which we may see only years later in young people's further studies and working life readiness.

Register data on education financing is received for research use with a long delay. We now have the first pandemic-period data available from 2022. We used 2017 as the base year for index change in our analyses. The cost development of state-subsidized basic education shows that during the period 2017–2022, student welfare (41%), internal administration (36%), and property maintenance (28%) costs increased most proportionally. Teaching costs increased significantly less during the same period (about 16%). More detailed analysis of the data continues, but it appears quite clearly that there are regional and municipal differences in cost development.

The Ministry of Education and Culture has distributed state grants to early childhood education and pre-primary and basic education to mitigate the effects of the coronavirus epidemic (COVID-19) on two occasions for the years 2021–2022 (total of 40 million euros/278 grant recipients) and for the years 2022–2024 (total of about 58 million euros/298 grant recipients) in connection with state supplementary budgets. Correspondingly, the Finnish National Agency for Education distributed state grants to upper secondary education providers to mitigate the effects of the coronavirus epidemic for the years 2021–2023, totaling 15 million euros (211 grant recipients), with the grant target being supporting learning and addressing the learning gap as well as supporting well-being and reducing the well-being gap. In 2022, the Finnish National Agency for Education continued to distribute state grants to upper secondary education providers for support measures needed due to the coronavirus epidemic, to 152 projects totaling 17 million euros. More detailed analysis and impact assessment of these grants continues.

## **2. Multidisciplinary research and cooperation**

Regarding the learning gap, research was done not only in educational science, educational psychology, and information technology (primary school) but also in collaboration between educational research and economics (lower secondary school and upper secondary school).

As one significant result of multidisciplinary collaboration, the Academy of Finland awarded flagship funding (started 1/2024) to the Future of Education (EDUCA) flagship application (led by EduRESCUE director Prof. Marja-Kristiina Lerkkanen). EduRESCUE project researchers are involved in the EDUCA flagship. The EDUCA flagship aims to build an education ecosystem that produces understanding of declining learning outcomes, increasing school absences and educational dropout, and use of technology in teaching. Through the multidisciplinary ecosystem, a data infrastructure will be built to combine educational science, psychology, learning analytics, sociology, and economics theoretical and multi-method expertise, as well as a platform for utilizing large longitudinal and register data. Through the flagship, the research basis of educational policy decisions and experiments will be strengthened, understanding of optimal learning situations and engagement in education will be increased, as well as research knowledge about social and individual learning processes, teachers' and educational leaders' competence, and scalable educational technology solutions and learning environments. The consortium parties are the Universities of Jyväskylä, Helsinki, Turku, and Aalto. The funding enables the continuation of multidisciplinary collaboration implemented in EduRESCUE in coming years.

### 3. Societal interaction

Results of the meta-analysis on the learning gap and children's self-assessed learning gap were presented at the 2022 Strategic Research Fair, just and sustainable society conference. Results on learning and well-being gaps were also presented at international EARLI, ECER, and ECDP conferences in 2023 and 2024.

The Finnish National Agency for Education organized a Round Table discussion series in fall 2023, where each time our researchers were involved in discussing from a research perspective the following topics: well-being and learning outcomes (16.8.), digitalization and learning outcomes (11.9.), and diverse learners and learning outcomes (1.11.).

## Impact Story 4.

### Well-being, resilience and competence of teachers and principals and student teachers to act in exceptional situations

#### 1. Societal challenge

During the COVID-19 pandemic, it was evident that principals and teachers need to be better able to prepare for rapid societal changes and operating in exceptional situations in the future. In EduRESCUE, teachers' well-being was studied in close collaboration with the Trade Union of Education (OAJ). Our results showed that teachers' work burnout increased strongly and linearly from spring 2020 to late 2021 while teachers' work engagement clearly decreased. We identified that teachers' work well-being changed during the pandemic through shock and reaction phases to a working phase. However, teachers' resilience functioned as a protective factor: in 2022, especially teachers' work engagement began to recover and to some extent work burnout also decreased. Additionally, support received from colleagues and supervisors functioned as a protective factor.

It is important to recognize both individual immediate and longer-term effects of the pandemic on teachers' work and well-being and the entire school system. For example, teachers' increased malaise in research was related to plans to change careers. Also based on discussions with stakeholders, it was evident that there is reason to be concerned about the profession's attractiveness and retention.

We studied principals through an annual principal barometer in collaboration with the Finnish Principals' Association (SURE). We conducted the fifth annual Principal Barometer survey and physiological data collection using Firstbeat in March-June 2023. In 2023, our primary objective was to analyze developmental trends in principals' well-being and obtain information based on which principals' training, support networks, and intervention programs could be developed for coming years. The results showed that the demands of principals' work have increased after the pandemic, which has partly affected the gradual deterioration of their work well-being, including work engagement and work burnout. The proportion of principals whose work well-being had deteriorated and who were characterized by low engagement and high burnout also grew after the pandemic outbreak. Principals reported receiving further training in well-being management as their primary need. Finally, in 2024, it was observed that recovery in principals' work well-being has begun to occur after the

pandemic, and principals' work burnout has started to decrease while work engagement has increased. Despite this, the well-being level is not yet at the same level as before the coronavirus pandemic.

According to another of our studies examining principals' crisis and distance management, some principals also needed more crisis and change management skills. In collaboration with SURE ry, we are currently planning new crisis and well-being management training for principals. Crisis and well-being management skills will be an important resource reserve, increasing principals' and teachers' resilience.

The project also launched a new concept related to crafting leadership. According to our studies, job and leisure crafting are promising strategies through which principals can support their well-being during difficult times. Job crafting can improve principals' work well-being, self-efficacy, and resilience. Our publications included valuable observations and recommendations for future research, based on which well-being training for principals and the entire school community is being planned. Central is the idea that principals' job crafting also includes the goal of crafting one's own leadership so that it responds to staff's psychological needs. Thus, principals' job crafting can be divided into sub-processes related to their own work and staff's work.

In a pro gradu thesis connected to the project, principals' views and implemented measures related to managing teachers' work well-being were examined through interviews. Principals emphasized the diversity of work well-being management, caring for everyday work well-being, resources, and teachers' differences. Principals reported as most common measures everyday presence, monitoring work well-being, various well-being activities, and caring for the teaching environment. Based on the results, principals were recommended to articulate work well-being promotion measures and invest in workplace atmosphere pleasantness.

The EduRESCUE project also included the objective of promoting student teachers' competence to act and cope in exceptional situations in the future (see impact objective 4). We examined emotional and interaction competence in face-to-face and distance teaching situations from the following perspectives: 1) Individual encounter, so that each pupil is seen, heard, and understood, and receives the support they need, 2) Supporting peer relationships and guiding peer interaction, so that everyone feels they belong to the group and can participate in peer interaction in a personally meaningful way and also promote others' participation, and 3) Collaboration competence, so that a socially sustainable school can be built together, where both the community and its individuals are well. Participation is built in everyday positive encounters both between teacher and pupils, among pupils, and in multifaceted collaboration with colleagues, families, and multi-professional teams. Multi-faceted collaboration to develop participatory practices thus promotes the school community's comprehensive well-being. Investing in emotional and interaction competence is key especially in striving to strengthen future teachers' self-efficacy and personal safety in inclusive school communities.

In the Individual Situations and Participation survey, student teachers rated as especially challenging detecting pupils' anxiety related to threat scenarios and crises, dependencies, mental health problems, performance pressures and school burnout, and difficult family circumstances. Providing support and referring to support were experienced as especially challenging in well-being-threatening situations where pupils have anxiety related to threat scenarios and crises, dependencies, or face challenges related to belonging to minorities. In distance teaching situations, detecting pupils' individual situations, supporting or referring to support, and guiding peer interaction were generally experienced as more challenging than in face-to-face teaching situations. To support both pupils' and future teachers' well-being, more attention must be paid to diverse

well-being-threatening situations in teacher education, especially for those students who feel their readiness is weakest.

According to our studies, adapting support can be challenging also for experienced teachers. Particularly variation in emotional support related to pupils and different teaching sessions raises concern about variation in the quality of support pupils receive. Regarding peer interaction, the research highlighted the significance of roles pupils spontaneously adopt and the emotional atmosphere for the smoothness of collaboration and learning, as well as teachers' skills to act in many different roles to guide peer interaction in the manner required by the situation. Important thus become future teachers' skills to guide peer interaction sensitively and flexibly in different teaching situations and learning environments. This was already supported in collaboration with teaching practice by connecting resilience to processing meaningful teaching and interaction situations (e.g., written reflection, practice portfolios, and video clubs) and by developing new kinds of flexible pedagogical solutions for situations like the coronavirus pandemic where normal teaching practice practices cannot be implemented (e.g., video-based eye movement modeling). At the same time, teacher training school collaboration intensified, which is crucial in teacher education development. Reflection models offer a realistic and practical tool for developing resilience in teaching interaction, as action models are already connected to existing practice guidance practices.

In EduRESCUE, a conceptual framework was built for teaching interaction resilience with the goal of an educational functioning model, which is intended as a practical framework for teachers, student teachers, teacher educators, and researchers to structure resilient teaching interaction. The model started from analysis of core practices of resilient teaching interaction, which was connected as part of school teaching's broader relationship network. Additionally, the model showed how multi-actor collaboration possibilities are connected to teachers' and pupils' everyday school work. The educational functioning model raised the question of pupils' study ability (cf. demand-resource model and study ability) into educational and school discussion and proposed study ability to be the central goal of resilient teaching interaction.

Based on the results, we continue after the project period to support future teachers' and principals' interaction and well-being skills as part of teacher education and continuing education. A central working method continues to be reflection on videos recorded in teaching practice using the VOPA observation tool focusing on different dimensions of interaction. EduRESCUE researchers were also strongly involved in Finnish National Agency for Education-funded continuing education projects concerning school well-being and teachers' competencies (e.g., HYPPY and MEHIS) and in developing the KILO model supporting the building of a support network and network for teachers' work well-being for schools.

## **2. Multidisciplinary research and cooperation**

Not only psychology and educational science collaboration but also research collaboration on teachers' resilience between legal science and educational science was experienced as especially fruitful. Together, legal regulations related to meeting pupils' diverse needs and student teachers' readiness to act according to obligations as initiators of support chains pupils need were examined. We also examined the right to participation as part of forming the experience of participation as part of student teachers' emotional and interaction skills, and trained student teachers together on this topic. Related to this, a workshop was also organized at the JURE conference preceding the EARLI 2023 conference, where participants were facilitated to

examine participation in addition to experience from a legal perspective and get inspiration from this for their own research by integrating legal perspectives. Additionally, we developed the Law and School course on legal perspectives related to school operations, which as part of the University of Turku's multidisciplinary Sote Academy's open studies is open to everyone interested. As an invited speaker, our researcher examined at the Uppsala University school law institute's conference and in the anthology published from it how pupil participation and hearing is regulated by the Basic Education Act. Inadequate regulation requires principals and teachers to have competence to ensure pupils' participation rights in accordance with the Convention on the Rights of the Child and in a manner ensuring the experience of participation.

In principal research, we have done international research collaboration with an Australian group and shared our collected survey data and exchanged information on both countries' latest research results. Collaboration has also been done with Estonia, where partially unified survey data was collected from Estonian principals. A joint opening seminar for Finland and Estonia was held at the University of Helsinki in November 2023.

In the future, we aim to develop and implement targeted intervention programs based on our findings and emphasize especially promoting adaptive job crafting strategies among school principals. Since well-being has a central role in maintaining effective leadership, our goal is to design measures that not only optimize job demands but also provide tools and resources for alleviating stress and improving personal flexibility. Together with the Australian and Estonian groups, we aim to deepen our understanding of global dimensions of school leadership and well-being. Additionally, we intend to expand our research field by including a comprehensive examination of off-job recovery, which is an often forgotten aspect of principals' well-being. The goal is not only to improve principals' well-being but also to bring forth valuable insights that can inform political decisions and best practices in school leadership. To advance these processes, we have harmonized questions in the teachers' work well-being survey and principal barometers so that in the future we get deeper scientific knowledge about how principals' and teachers' work well-being are intertwined.

We have continued the teachers' work well-being survey collected in collaboration with OAJ, which has been collected semi-annually since spring 2020. The latest fall 2024 results show that teachers' work well-being has continued to improve after the coronavirus pandemic, which is visible in decreased work burnout and strengthened work engagement. However, there are still significant differences in work well-being between individuals. We have indeed further deepened collaboration with OAJ by starting a longitudinal study mapping teachers' work well-being in spring 2024. We presented results on teachers' work well-being during the project, among other places, in OAJ's blog, in the RESCUE me! webinar series aimed at teachers, and at OAJ's internal events.

In the 3U-Team on teacher continuing education and basic training (see impact story 2), researchers from all three universities were involved. Multidisciplinary collaboration was also realized through consultations. For example, in developing the educational functioning model, parallel sciences (e.g., educational science, psychology, and health science) were utilized, as well as researchers' and international partners' expertise from different fields in the consortium in the form of consultations. During the project, we had five international expert partners visit our consortium days (Prof. Frosso Motti-Stefanidi, Prof. Tina Hascher, Prof. Ceri Brown, Prof. Ulrich Trautwein, and Prof. Eleftheria Gonida). Our international expert partners' suggestions and feedback were valuable for multidisciplinary research work.

Our commitment to international collaboration was and continues to be strong in the project. Meaningful collaboration with researchers from different countries offered the opportunity to conduct international comparative research. This work has already been started with Greek and Estonian researchers. On the other hand, internationally implemented projects require careful planning to resolve ethical challenges related to, for example, data sharing (e.g., sharing sensitive information).

There were also challenges in multidisciplinary collaboration in different publication practices (e.g., publishing alone versus in groups) or citation practices. We also noticed challenges in research data collection: the longer the time passed since the pandemic began, the more difficult it was to motivate research participants. Finding solutions to these challenges in the future is important, as it is essential to monitor the pandemic's longitudinal effects.

### **3. Societal interaction**

Our close collaboration with OAJ and SURE was extremely successful and important for the project. Our researchers specialized in teachers', principals', and student teachers' resilience were invited as speakers at various events of our stakeholders (including ProRexi event, ProLukio - national upper secondary school seminar, Teacher Education Days, teacher educator network eTED, digital teaching and learning ITK conference, SITRA workshops). Additionally, we organized together with the Finnish Academy of Sciences an open seminar "Traces of COVID-19 Pandemic in Educational Institutions and Families" 3/2022, where our researchers presented our results and stakeholder members participated in the panel. Our researchers served as experts in various working groups and steering groups related to teaching and school leadership (including Teacher Education Forum, Basic School Forum, and FNAE's School Leadership Research Network and FNAE's Round Table discussions, see expert work sheet). In 2023 and 2024, we organized the RESCUE me! webinar aimed at teachers and student teachers in collaboration with OAJ. In the webinar, our researchers spoke based on our research about themes related to teachers' work well-being, including different work well-being profiles and strengthening emotional and interaction competence. In spring 2023, we organized a corresponding webinar aimed at principals in collaboration with SURE ry, where our researchers presented, among other things, results from the 2022 Principal Barometer survey and physiological data, and talked about job crafting as a strengthener of work well-being. Additionally, principal barometer results were presented, among other places, at annual ProRexi days and Educa fairs.

We developed teacher educators' emotional and interaction competence in EduRESCUE's collaboration project (Ministry of Education and Culture-funded TOVE project and OPA project, and OAJ-funded KILO project) by producing materials related to emotional support and dialogicity and presenting them to teacher educators (including eTED network's national meeting, TOVE and eTED blog texts), organizing teacher educators' Virtaa peer meetings, and presenting results on distance teaching situations also from teacher educators' perspectives (PedaForum and Teacher Education Days). Additionally, our researchers were involved in developing both the University of Turku's teacher education programs and practices and the University of Jyväskylä's student teacher practice periods in both Finnish-speaking and international student groups. At the same time, teacher training school collaboration also intensified and developed (see Societal Challenge section). The project's themes were also integrated into thesis work, thus strengthening future teachers' deep research-based competence on perspectives central to school communities' resilience.

The reciprocal interaction work between researchers and stakeholders had several positive consequences. First, multi-professional interaction enabled in-depth discussion of challenges encountered at schools. Dialogue supported examining things from new perspectives, strengthening collaboration and creating new collaboration opportunities. Collaboration with stakeholders also clarified schools' wishes toward research. It is important in research to emphasize supporting and strengthening existing potential instead of developing new interventions to support already existing skills. Principals and teachers are experiential experts who have capacity and practical ideas to solve practical problems and challenges they encounter in their work. It is important that reciprocal understanding of each other's experiences, skills, interests, and needs is strengthened between researchers and stakeholders. The significance of trust is emphasized in a functioning interaction relationship.

During the project, we published a total of three solution cards: 1. Society's crisis resilience requires preparedness and stable societal structures (Together with other PANDEMICS program projects) 2. The education system's resilience is strengthened by renewing principals' and teachers' training 3. A resilient school community is born from professionals who are well.

Additionally, we published together with other PANDEMICS program projects before the 2023 parliamentary elections an election brochure, which was distributed, among other places, to party offices. The PANDEMICS final publication also addressed themes of the fourth impact objective, especially through crisis management and pupils' rights in chapters 3 and 5 (Crisis and well-being management in health and education sectors).