International Journal of Education & Literacy Studies
ISSN: 2202-9478
www.ijels.aiac.org.au

"Flexibility, Compassion, and Support" – A Study on Multilayer Mitigation Effects on Pedagogy and Resilience in Thai Classroom, June-September 2022

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ARTICLE INFO

Article history
Received: October 11, 2022
Accepted: November 28, 2022
Published: January 31, 2023
Volume: 11 Issue: 1

Conflicts of interest: None
Funding: None

ABSTRACT

This qualitative study analyzed pedagogical effects of multilayer mitigation in a Thai classroom. The triangulated data set were confidential, comprising teachers' voluntary anonymous information, pedagogical views and opinions, respectively. First, pupils' low absence rates enabled pedagogical focus on learning losses, which were mainly skills. The second effect was related to assessment. None of the teachers mentioned test results as learning loss indicators but regarded learning and qualified assessment as dynamic processes. An interesting dilemma was the learning loss measurements by non-pedagogical experts. Mostly those were presented as test scores, working hour counts, or annual formalities. However, optimized learning strategies' research had existed for decades, being responded better by these pupils. The third effect was the improved resilience of pupils and caretakers. Initially worried parents turned relieved. Resilience fostered the intrinsic motivation of all. When compared to some countries, firmer resilience made the difference in learning loss endurance for this group. "All-inclusive" mitigation had given families meaningful support. They shared visions of community roles, mediated by teachers and school management. The latter were backed by epidemiologists and medical experts. Further studies should discuss schools in a longer timeframe. External, quantified test scores without in-depth pedagogical analyses seem outdated by the early fourth pandemic year.

Key words: Pedagogy, Assessment, Resilience, Onsite Classroom, Covid-19, Multilayer Mitigation

INTRODUCTION

Purpose and Research Question

While Covid-19 had had multiple global effects in schooling during 2020-22, various countries started to loosen their non-pharmaceutical interventions (NPIs) 2021-22 along with the growing vaccination rates (Jackowicz & Salin, 2021; ECDC, 2022). Nonetheless, many Asian countries selected to proceed with combined community protection using multiple measurements, which have been known as an applied "Swiss Cheese" (Cohen et al., 2022; Reason, 2000; cf. Goad, n.d.).

The *purpose* of this examination was to share qualitative classroom pedagogical practices and analyze "learning loss" resilience during pandemic era. Subsequently, the presentation had three further objectives. First, to discuss the effects of multilayer protection on pupils and teachers, who applied Swiss cheese at school. Second, to survey the pedagogical solutions caused by consequent pupils' presences and/or absences. Followingly, the third goal was to offer professional teachers' perspectives into on-going polylogue on learning losses and assessment to any schools and classes – in order to promote pedagogical and child protection solutions (cf. Bilen 2021; Darling-Hammond et al., 2020; Grewenig et al., 2021; Jackowicz & Salin, 2021; Prime et al., 2020; Tomasik et al., 2021; Whitley et al., 2021). The *research question* was:

What were the effects of (Swiss Cheese) multilayer protection on pedagogical solutions, assessment, and learning losses?

The Data, Method and Results

> *"Research that can be approached particularly well using qualitative methods include assessing complex multi-component interventions or systems (of change), addressing questions […] towards what works for whom when, how and why."* (Busetto et al., 2020, p. 2)

The qualitative *data* were collected from a voluntary, unofficial group of basic education teachers after a 12-week schooling period in an anonymous Thailand teacher training school. Altogether 11 subject teachers had taught the same class of 37 pupils during those weeks. They were asked to comment a simple, open-end questionnaire on their pedagogical solutions, learning loss and assessment (Appendix 1). Eight accomplished questionnaires were received in given

Published by Australian International Academic Centre PTY.LTD.

http://dx.doi.org/10.7575/aiac.ijels.v.11n.1p.2

timeframe. Moreover, some teachers presented further remarks and anonymous statistics, as well as pedagogical views and opinions based on arguments. Finally, additional questions were addressed via the local data mediator to clarify the previous information, when needed (Anon, 2022).

In brief, the research *method* was interactive case study (Busetto et al., 2020; Fossey et al., 2002), in which additional explanations gave more space for triangulation. The class had also three teacher students in the timeframe. They were not asked to participate, since reflections reached earlier experiences and assessment from distance teaching and learning terms. In regard with the readers' active engagement, references were constructed for further triangulation cycles. They presented supporting, additional, but also contradictory (cf.) academic views and notifications.

Following the selected qualitative data triangulation, the results – as findings – were presented during the triangulated discussion with references.

The Importance, Ethics, and Limitations

The *importance* of this survey rose from education professionals' in-depth actions and pedagogical solutions inside an online/onsite classroom. A single, targeted study did not reveal straight nationwide development but challenged and questioned both pedagogical and other professional solutions and conclusions made outside a classroom. In addition, it also revealed something from a regional trend due to traditional institutional competition (Almeida & Carneiro, 2021; Crawford, 2020; Chernozhukov et al., 2021; Darling-Hammond et al., 2020; cf. Tomasik et al., 2021; Vlachos et al., 2021; Whitley et al., 2021).

Research ethics kept the study design and data set fully anonymous and unpublished to protect any indirect personal expression, absence and presence rates, as well as learning and assessment estimations and analyses (Almeida & Carneiro, 2021; Anon, 2022; Busetto et al., 2020). Consequently, no institution, affiliation, gender, email, single questionnaire answer, neither geographical location was identifiable. The teachers, pupils and their class remained anonymous and unknown for the author, as well. Apart from knowing the professionals, this survey focused on analyzing, discussing and reflecting their professionalism.

Limitations of this study may occur in the compact timeframe of analysis. However, pedagogical views, hands-on practices, and assessment development were asked directly from the professionals *inside* the classroom, maintaining an achieved intensive confidentiality. Finally, looking for "general practices" would not have bought epistemic – here testimonial – justice for precise professional pedagogy, which aimed to serve different learners in altering pandemic circumstances (Medina, 2022; Whitley et al., 2021). Instead of generally quantifying "what works?", this study tried to qualify "what works for whom, why, and how?". Qualifying more individually, in turn, made it also possible to search for different learners' styles from the data set (Busetto et al., 2020; Fossey et al., 2002; Whitley et al., 2021; cf. Tomasik et al., 2021).

Terms and Related Literature

Learning loss meant here the (dis)continua of previously shown pupil's individual, or group, skills on problem solving. Apart from this, learning loss was not based on computer modelling, working hours count, or annually repeated national test of a subject matter. Rather, it was a combination of 21st century skills, which underlined the abilities – or the occurred lack of them – for self-corrective performance by an individual, or a group of pupils. in problem-solving occasions (Darling-Hammond, 2010; Gardner, 2010; Pearlman, 2010; Larson & Northern Miller, 2011; Voogt & Pareja Roblin, 2012; cf. Birkelund & Karlsson, 2021; Grewenig et al., 2021; Maldonado & De Witte, 2022; Prime et al., 2020; Tomasik et al., 2021; Whitley et al., 2021). In brief, the learning loss assessment was an interactive, dynamic process performed by pupils' closest education and pedagogy professionals. Moreover, it was based on a long, well-known scholarly tradition and research (Bloom et al., 1956; Maslow, 1958).

Online teaching meant distant teaching using suitable uncategorized tools, while *onsite* teaching and learning were located into a certain classroom and teachers' pedagogical solutions there (cf. Almeida & Carneiro, 2021; Darling-Hammond et al., 2020). *Swiss cheese* was explained in the beginning, thus requiring no quotations later.

Related literature comprised pre-pandemic and Covid-19 pandemic era educational and pedagogical studies (Almeida & Carneiro, 2021; Bilen, 2021; Brown et al., 2020; Crawford, 2020; Darling-Hammond, 2010; 2020; 2022; Gardner, 2010; Larson & Northern Miller, 2011; Pearlman, 2010; Voogt & Pareja Roblin, 2012). The other main group of research literature presented covid-related pharmaceutical, medical or economic studies (Chernozhukov et al., 2021; Cohen et al., 2022, Diederichs et al., 2022; Grewenig et al., 2021; Kuitunen & Renko, 2021; Prime et al., 2020; Tomasik et al., 2021; Vlachos et al., 2021; Whitley et al., 2021). A striking comprehension and interpretation difference between these science groups was the measurement – and content-related understanding – of a learning loss, as well as its' research background, needs and forecasted continua (Bloom et al., 1956; Darling-Hammond, 2010; 2022; Gardner, 2010; Maslow, 1958; Prime et al., 2020; Voogt & Pareja Roblin, 2012; cf. Birkelund & Karlsson, 2021; Grewenig et al., 2021; Maldonado & De Witte, 2022; Tomasik et al., 2021; Whitley et al., 2021). Further discussion on these differences was triangulated with the data.

FINDINGS AND DISCUSSION

Multilayer Approach to NPIs Added Vaccines and Tests

The Swiss cheese model used in the attending school had more layers than the one shown in Figure 1. First, the pharmaceutical layer of Covid-19 vaccines (1-3 doses) were given to all the group before the school year started, completing the doses gradually. Second pharmaceutical layer were the rapid antigen tests (RATs), which were taken every Sunday evening from everyone. In addition, RATs were taken also on Wednesdays during mid-August weeks, as the framework

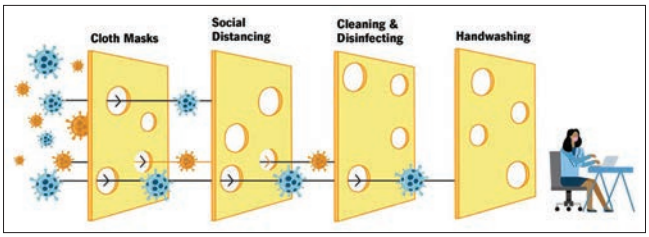

Figure 1. An example of Swiss cheese NPIs, adapted from Reason (2000), modified by Cleveland Clinic (2020).

data from the supervising teacher told (Anon, 2022). The other, NPI-originated Swiss cheese layers were masks on all (surgical/N95), HEPA filtered air purifiers in the classroom, opened windows for ventilation, and daily hand hygiene. A body temperature screening camera at the school entrance was used all the pandemic time, as well. Lunch hours were located into a school restaurant with running HEPA-filtered air purifiers, opened windows and added physical distancing (Anon, 2022). Masks were changed after the lunch, but also in need. Teachers supervised pupils' daily breaks. Conclusively, the Swiss cheese model for safe learning environments were updated, changed and adjusted, following regularly the country's academic medical experts' recommendations and advice (Anon, 2022; cf. Darling-Hammond & Darling-Hammond, 2022; Reason, 2000; Diederichs et al., 2022; Vlachos et al., 2021).

Regarding the described multilayer protection, none of the teachers resisted that. While some teachers prioritized vaccine protection or preferred so-called hybrid immunity, they remarked that other layers and NPIs were a usefully added protection for pupils' healthy participation to onsite schooling. Moreover, multilayer protection was seen to encourage physical presence of all pupils from different family backgrounds and to support their motivation to stay active. Simultaneously, multilayer model enabled interaction and skills related to group behavior (Anon, 2022; Darling-Hammond & Darling-Hammond, 2022; Loima & Vibulphol, 2014; Prime et al., 2020; Whitley et al., 2021).

The Effects:Low Absence Rates Enhanced Onsite Pedagogy, Assessment and Resilience

Pupils' absences didn't peak in any given week during the period from the average one-two students per a school day. Out of the total 80 daily individual absences (17.6.-16.9.2022) only four (4) were caused by Covid infection. The data revealed that August was the month of most absences, having 28 pupils absent during 18 school days. Subsequently, Wednesday RATs were added for a few weeks in that time for health activities, but no additional Covid positives were found. Similarly affecting, mitigating mandatory testing findings had occurred in Germany, as well (Anon, 2022; Diederichs et al., 2022; cf. Grewenig et al., 2021).

In general, the applied Swiss cheese model seemed to make classroom safety for this group of 37 pupils. On the other hand, five out of 11 teachers got infected, and had weekly substitutes during the given timeframe. Concluding from the total – and daily – absences, teachers likely got infected elsewhere than during their lessons with this group. Most of them got sick in early August (Anon, 2022; cf. Diederichs et al., 2022; Vlachos et al., 2021). Conclusively, low – regularly tested but practically non-existing – pupil infection rates were different from e.g., Swedish unmasked, irregularly tested, basic education pupil's infection numbers. Swiss cheese model tended to mitigate the classroom spreads, adding the safety of pupils, as well as of their families. Although the teachers' infection rates were relatively high, they seemed not to exposure, neither infect pupils (Anon, 2022; Diederichs et al., 2022; cf. Vlachos et al., 2021; Vogel, 2021; Kuitunen & Renko, 2021). Apart from these main trends, a single teacher student got positive RAT result, getting isolated (Anon, 2022).

Pedagogically, the class was taught applying onsite teaching and learning methods in June-September 2022. Absent pupils used existing virtual online learning platform only in a single subject, having options to get devices from the school. The Arts teacher seemed to have supported manual and digital Art skills practices, albeit the extra time for both outside and the scheduled lessons. As a result of this main trend, absent pupils were not connected into a hybrid teaching in any subject. During the observation period, the definite pedagogical mainstream was close contact (classroom) teaching, into which the accustomed online experiences from previous terms also had their enhancing effects (Anon, 2022; Chenowith, 2014; Gardner, 2010; Darling-Hammond et al., 2020; cf. Bilen, 2021; Brown et al., 2020; Jiao et al., 2020; Loima & Vibulphol, 2014; Pearlman, 2010; Whitney et al., 2021). Lessons had been learned, and practical pedagogical classroom approach was adjusted accordingly.

Social skills, as well as subject-related skills, were regarded to be important by several commenting teachers. Half of them compared the situation to the previous online teaching, remarking positive effects on the skills development in classroom presence even during a 12-week period (Anon, 2022; Bilen, 2021; Brown et al., 2020; Chenowith 2014; Darling-Hammond et al., 2020; Darling-Hammond & Darling-Hammond, 2022; Diederichs et al., 2022; Larson & Northern Miller, 2011; Whitley et al., 2021; cf. Tomasik et al., 2021). Specifically, in the light of international research, these teachers seemed to be experimentally aware of potential short-term learning losses, as well as online social skill development loopholes (Anon, 2022; Brown et al., 2020; Diederichs et al., 2022, Jiao et al., 2020; cf. Elias & Haynes, 2008; Maldonado & De Witte, 2022; Medina, 2022; Tomasik et al., 2021; Whitley et al., 2021). However, a single teacher preferred online teaching, estimating it beneficial for those individual pupils, who easily socially withdrew from active onsite group participation (Anon, 2022; Darling-Hammond, 2010; Darling-Hammond & Darling-Hammond, 2022; Jiao et al., 2020; cf. Medina, 2022; Voogt & Pareja Roblin, 2012). These nuances were the epistemic evidence of individualized pedagogical approaches that teachers applied, shedding light to the qualitative "whom, why, and how" data approach. Pupils' needs were recognized specifically and responded accordingly. In this teacher's report,

there was a weak signal of more socially vulnerable individuals in the group.

Regarding the previous trend, the school itself had already for years been popular among parents from active social classes. Consequently, most of the pupils in the class had home support and technology. Several even may have had a private, part-time tutor from university students to coach them (Anon, 2022; Elias & Haynes, 2008; cf. Brown et al., 2020; Jiao et al., 2020; Prime et al., 2021; Whitley et al., 2021). However, a recently presented solemn expression of learning "online management" should not be generalized into this flexibly changed online-onsite class environment. Neither should unassessed working hour sheets be trusted as learning (loss) indicators, since all the pupils and their learning styles were individually known by their teachers, who collaborated (Anon, 2022; Busetto et al., 2020; Darling-Hammond et al., 2020; Gardner, 2010; cf. Grewenig et al., 2021; Kaban, 2021). Instead of management, or official institutionalized instructions, the experiences that these teachers had already analyzed during previous online periods were taken seriously into practical pedagogical dynamics to minimize even the shorter pitfalls – with the help of previously mentioned parental support (Medina, 2022; Voogt & Pareja Roblin, 2012; cf. Birkelund & Karlson, 2021; Grewenig et al., 2021; Loima & Vibulphol, 2014).

In terms of *assessment*, teachers didn't see pedagogical – here mostly practical – reasons to enhance their curricular onsite assessment practices. Pupils were mostly present and, if needed, given extra supporting lessons after their arrival back to the class (Anon, 2022; cf. Gardner, 2010; Larson & Northern Miller, 2011). All the pupils had various onsite opportunities to show their skills, and related knowledge in a shorter, and long-term assessment (Anon, 2022; Chenowith, 20214; Crawford, 2020; Darling-Hammond et al., 2020; cf. Whitley et al., 2021). In other subjects than previously mentioned Arts, pupils were similarly addressed supportive, extra lessons in nine remaining subjects, once they returned to school. These extra lessons took place even in Computer Sciences, regardless of an obvious opportunity to use the existing, familiar online environment. English teacher described, how masks prevented pupils from seeing the lip-and-mouth movements during pronunciation drills in the language lessons. Consequently, they were taken away for that time, adding outdoor air flow into the classroom (Anon, 2022; Brown et al., 2020; Darling-Hammond et al., 2020; Whitley & al., 2021). Adjustments took place, when they served the pedagogical purposes.

Mother tongue (Thai) and English teachers had also observed, and found, temporary learning losses in reading and handwriting skills during the previous online terms. Consequently, special emphasis was paid for those in the classroom pedagogy. Teachers of Physical Education (PE) and Crafts reported observed losses in motoric skills, and task-related or sport-specific physical performance originating from previous years' online periods. PE teacher wrote that skills ought to be shown, constantly practiced and assessed at present. Apart from recent research findings of socially vulnerable children's increased risks for (long-lasting) learning losses, these skill observations included the entire group (Anon, 2022; Gardner, 2010; Grewenig et al., 2021; Tomasik et al., 2021; cf. Brown et al., 2020; Jiao et al., 2020; Darling-Hammond et al., 2020; Elias & Haynes, 2008; Pearlman, 2010; Whitley et al., 2021). Conclusively, lack of motoric exercises had affected all the pupils.

Furthermore, teachers clearly preferred onsite teaching assessment, in which they experienced less learning difficulties and more useful interaction with students. They had learned to utilize enhanced opportunities for continuous observation and encouraging, even passionate feedback (Anon, 2022; Darling-Hammond et al., 2020). Compared to the online terms 2020-21, some of them also estimated no further occurring learning losses on skills. Low absence rates caused by Swiss cheese model utilization had affected teaching pedagogy, strategies and practices, enabling social skills and competencies to be adjusted, monitored, and further developed by teaching professionals. Interesting enough, protection multilayers enabled and accelerated onsite pedagogy more than a theoretical in-service training day would have done, as a single teacher reflected. At the same time, the teachers saw the holistic 21st century learning process – of skills, attitudes, emotions, cognitions – and adjusted early corrective activities to observed learning losses (Anon, 2022; Voogt & Pareja Roblin, 2012; Whitley et al., 2022; cf. Bloom et al., 1956; Maslow, 1958).

As some teachers reported, the multilayer protection enhanced the resilience of pupils, but also improved the mental sustainability – resilience – of parents. According to their comments, parents had been scary, worried or restless due to the urban Covid exposures in the beginning of the term. The intensively developed multilayer protection returned their confidence on the class, school and educational sector. Compared to Western comprehension of a nuclear family (mostly parents and siblings), it was often an extended family of three generations to be concerned about (Anon, 2022). Prime et al. (2020) contributed, how variably Covid-risky families could utilize beliefs in their complex interaction and stressful situations. As such, encouraging beliefs could fortify the resilience and togetherness among family members in challenging circumstances (Anon, 2022; Medina, 2022; Whitley et al., 2022; cf. Prime et al., 2020). This was, what happened among the pupils, their caretakers, and teachers of this group.

The classroom arrangements, as well as the school, supported parental and pupils' resilience during pandemics. Meanwhile, the beforehand decided, absolute onsite pedagogy in Sweden, Finland and e.g., Canada had faced epistemic, but also practical, difficulties due to the pupils' increased, irregular absences with no multilayer protection taken into educational settings. The weakest pupils had faced most of the learning losses, or epistemic inequities, in the latter countries. On the other hand, gifted pupils with their specific, motivational and health-related needs have not been so far considered carefully enough in international contributions (Anon, 2022; Bloom et al., 1956; Gardner, 2010; Loima, 2021; Medina, 2022; Pearlman, 2010; Tomasik et al., 2021; Vlachos et al., 2021; cf. Brown et al., 2020;

Chenowith, 2014; Darling-Hammond & Darling-Hammond, 2022; Diederichs et al., 2021; Prime et al., 2020; Whitley et al., 2021).

Finally, all except one of the teachers regarded classroom multilayer protection useful due to its' previously mentioned enabling factors: onsite pedagogy and assessment, immediate extra support, emphasized social skills development in a peer group, as well as supported individual and collaborative learning. The single teacher had left no comment. As was stated previously, enhanced skills' development that used teacher-centered classroom instructions with simultaneous interactive learning methods were seen important after a few semesters of online instruction and assessment (Anon, 2022; Brown et al., 2020; Jiao et al., 2020; Chenowith, 2014; cf. Whitley et al., 2021). Some teachers seemed also to have enjoyed more from the return of onsite pedagogy, paying particular attention to interactive skill development in their subjects. In brief, surveyed pedagogical timeframe was experienced as teaching and learning with "flexibility, compassion and support", as an informant summed (Anon, 2022; Medina, 2022; cf. Whitley et al., 2022).

Last, but not least, none of the teachers mentioned any test scores, or results as learning loss indicators, but analyzed the continua of social, learning, and subject-related onsite skills. Teachers regarded these skills essential in their pedagogy to be able to reach for the further levels of applied skill-emotion-attitude-cognition combinations (Anon, 2022). First, pupils needed to feel safe and cared ("compassion, flexibility") in order to accomplish those ("support"). While pedagogical professionals of this group had comprehended the dynamics of learning, the medical and economic specialists referred here tended to somehow over-simplify the quality assessment of wider learning processes into a measurable quantity (Birkelund & Karlson, 2021; Grewenig et al., 2021; Maldonado & De Witte, 2022; Tomasik et al., 2021). Nonetheless, it had been shown since 1960s that human needs have been constructed on hierarchic order (Maslow, 1958). If the basic needs – like safety, caring and love - were not properly fulfilled at school settings, motivated learning may not take place; not to mention any optimal cognitive performance enhancement (Maslow, 1956; Bloom et al., 1956). When above-discussed general theories by Maslow (1958) and Bloom et al. (1956), as well as general, quantified learning loss studies were located into this classroom of 37 learners, the first ones had a better response among pupils, parents, and teachers. Finally, none of these pupils were thought to be particularly vulnerable in social, economic, or educational sense by two, or more, teachers. Rather, they were mentioned as equal members of the group (Bloom et al., 1956; Chenowith, 2014; Gardner, 2010; Darling-Hammond et al., 2020; Maslow, 1958; Prime et al., 2020; Voogt & Pareja Roblin, 2012; Whitley et al., 2021; cf. Birkelund & Karlson, 2021; Grewenig et al., 2021; Maldonado & De Witte, 2022; Tomasik et al., 2021).

CONCLUSIONS AND SUGGESTIONS

Swiss Cheese multilayer protection – vaccines, RATs, masks, thermo-scanners, hygiene, HEPA-purifiers and ventilation – had mitigated pupils' infections effectively. Additionally, it had other, less expectable effects. First, pupils' low absence rates enhanced pedagogical opportunities in the classroom to proceed in learning. Pedagogical focus was on learning losses, which were found during the previous online terms. Most of the pupils' learning setbacks had occurred in skills: reading, writing, (psycho)motoric skills and coordination, as well as social activities. These were noted, as well as taken under enhanced pedagogical attention in all subjects.

Second effect of the multilayer Swiss cheese was the assessment. Having performed online assessment for even several terms, teachers willingly emphasized onsite continuous assessment. None of them mentioned any test results as learning loss indicators but assessed pupils' learning processes as dynamic entities of skills, emotions, readiness, attitudes and, eventually, knowledge. While 21st century learning was dynamic by nature, the qualified assessment had same characteristics. Teachers realized, and implemented, those into the classroom.

Previous notwithstanding, an assessment dilemma in this data discussion were the learning loss measurements completed by non-pedagogical experts. Most of the referred economic and medical research took learning losses as *ad hoc* test scores, working hour count, or annually repeated formal knowledge output. Yet, they forecasted – from outside the learners' space – long-lasting continua for learning difficulties mainly based on annual test result calculus of a subject matter. However, self-corrective optimal learning strategies had existed already for 65 years, occurring as well in curricula, and were responded better in this group of pupils and teachers. These optimized human behavioral learning structures had somehow remained obscure for these pandemic, medical, or economic experts.

Furthermore, the multilayer protection had meaningful socio-educational and cultural effects in improving the resilience of pupils, but also of caretakers and families. When parents realized that home test kits and regular masking served the purposes of children's and families' health, they felt relieved and collaborated. Extended families could have had several generations to be taken care of. Maybe this effect was less intentional, but improved family resilience enhanced the intrinsic motivation of pupils, teachers, and families to perform and strive.

When compared with the lack of mitigating efforts at schools in some Western countries, the increased resilience of parents and pupils made the difference in pandemic learning – or learning loss endurance in this group. Pandemic mitigation targeted for every child mattered the most for their parents, and *vice versa*. Finally, entire families had meaningful reasons to be taken cared. The data revealed that they also had a shared vision of their community roles, mediated by teachers and school management. The latter, in turn, were backed up by epidemiologists and medical experts. When/if regional schools did similarly, it already formulated the national framework. They probably did, since Asian schools traditionally strive for pupils, students, and learning improvements.

For further, it would be meaningful to survey Asian multilayer protection schools' learning performances with unprotected institutions for a longer interval. A qualified follow-up may reveal new perspectives to 20th century comprehension of human needs in the 21st century learning – in particular, when pupils' presence still is a must. Externalized test score comparisons without in-depth pedagogical analysis tend to become outdated already by the beginning of fourth pandemic year. Quality more likely improves the quantity than *vice versa*.

ACKNOWLEDGEMENTS

The author expressed deep gratitude for sustainable, generous assistance and qualified professionalism to the distinguished group of Asian colleagues.

REFERENCES

Almeida, F., & Carneiro, P. (2021). Challenges of privacy in e-learning in the context of COVID-19. In S. Jackowicz & I. Sahin (Eds.), *Online Education during the COVID-19 Pandemic: Issues, Benefits, Challenges, and Strategies* (pp. 19-38). ISTES Organization.

Anon (2022). *Confidential remarks and anonymous answers to a research questionnaire/inquiry* [the Data set], unpublished.

Bilen, O. (2021). Ubiquitous learning in the COVID-19 pandemic. In S. Jackowicz & I. Sahin (Eds.), *Online Education during the COVID-19 Pandemic: Issues, Benefits, Challenges, and Strategies* (pp. 39-58). ISTES Organization.

Birkelund, J. F., & Karlson, K. B. (2021, November 8). No Evidence of a Major Learning Slide 14 Months into the COVID-19 Pandemic in Denmark. https://doi.org/10.31235/osf.io/md5zn

Bloom, B., Englehart, M., Furst, E., Hill, W., & Krathwohl, D. (1956). *Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive domain.* Longmans, Green.

Brown, N., Te Riele, K., Shelley, B., & Woodroffe, J. (2020). Learning at home during COVID-19: Effects on vulnerable young Australians. Independent Rapid Response Report. Hobart, Australia: Peter Underwood Centre for Educational Attainment, University of Tasmania. https://apo.org.au

Busetto, L., Wick, W., & Gumbinger, C. (2020). How to use and assess qualitative research methods. *Neurological Research and Practice, 2*(14). https://doi.org/10.1186/s42466-020-00059-z

Chenowith, N.H. (2014). Culturally Responsive Pedagogy and Cultural Scaffolding in Literacy Education. *The Ohio Reading Teacher, 44*(35).

Chernozhukov, V., Kasahara, H., & Schrimpf, P. (2021). The association of opening K–12 schools with the spread of COVID-19 in the United States: County-level panel data analysis. *Proceedings of the National Academy of Sciences, 118*(42). https://doi.org/10.1073/pnas.2103420118

Cleveland Clinic (2020, November 20). Layers of safety: Reason's Swiss Cheese Model. https://consultqd.clevelandclinic.org/how-to-talk-to-your-patients-about-covid-19-precautions

Cohen, S., Chakravarthy, S., Bharathi, S., Badri, N., & Park, C.-Y. (2022). Potential economic impact of covid-19 related school closures. *ABD economics working paper series, No. 657*(2-8). http://dx.doi.org/10.22617/WPS220197-2

Crawford, N. (2020). Supporting student wellbeing during COVID-19: Tips from regional and remote Australia. National Centre for Student Equity in Higher Education. https://www.ncsehe.edu.au/student-wellbeing-COVID-19-regional-remote-australia

Darling-Hammond, K., & Darling-Hammond, L. (2022). *The civil rights road to deeper learning: Five essentials for equity*. Teachers College Press.

Darling-Hammond, L., Edgerton, A.K., Truong, N., & Cookson Jnr, P.W. (2020). Restarting and reinventing school: Learning in the time of COVID and beyond. Learning Policy Institute. https://learningpolicyinstitute.org/sites/default/files/product-files/Restart_Reinvent_Schools_COVID_Priority2_Distance_Learning.pdf

Darling-Hammond, L. (2010). New policies for 21st century demands. (Interviewed by J. Bellanca). In J. Bellanca, & R. Brandt (Eds.), *21st Century Skills: Rethinking How Students Learn* (pp. 33-50). Solution Tree Press.

Diederichs, M., Ewijk, van R., Isphording, I. E., & Pestel, N. (2022). Schools under mandatory testing can mitigate the spread of SARS-CoV-2. *Proceedings of the National Academy of Sciences*, *119*(26). https://doi.org/10.1073/pnas.2201724119

ECDC (August 25, 2022). Covid and other respiratory viruses: mitigating their spread when children return to school. https://www.ecdc.europa.eu/en/news-events/covid-19-and-other-respiratory-viruses-mitigating-their-spread-children-return-school

Elias, M. J., & Haynes, N. M. (2008). Social competence, social support, and academic achievement in minority, low-income, urban elementary school children. *School Psychology Quarterly, 23*(4), 474–495. https://doi.org/10.1037/1045-3830.23.4.474

Fossey, E., Harvey, C., McDermott, F., & Davidson, L. (2002). Understanding and evaluating qualitative research. *Australian and New Zealand Journal of Psychiatry, 36 (*6), 717–732. https://doi.org/10.1046/j.1440-1614.2002.01100.x

Gardner, H. (2010). Five Minds for the Future. In J. Bellanca, & R. Brandt (Eds.), *21st Century Skills: Rethinking How Students Learn* (pp.9-32). Solution Tree Press.

Goad, J. (n.d.). COVID preventation: A Swiss cheese model. https://www.chapman.edu/research/ask-the-experts-townhall/jgoad_ate_presentation.pdf (September 20, 2022)

Grewenig, E., Lergetporer, P., Werner, K., Woessmann, L., and Zierow, L. (2021). COVID-19 and educational inequality: How school closures affect low-and high-achieving -students. European Economic Review, 140, 103920.

https://www.iza.org/publications/dp/13820/covid-19-and-educational-inequality-how-school-closures-affect-low-and-high-achieving-students

Jackowicz, S., & Sahin, I. (Eds.). (2021). *Online Education during the COVID-19 Pandemic: Issues, Benefits, Challenges, and Strategies*. ISTES Organization. (PDF). https://www.istes.org/books/c439edb6b376b-840ce0300ad44b6a9c1.pdf

Jiao, W. Y., Lin N. W., Juan L., Shuan F. F., Fu Y. J., Pettoello-Mantovani, M., & Somekh, E. (2020). Behavioral and Emotional Disorders in Children during the COVID-19 Epidemic. *The Journal of Pediatrics. 221*(1), 264-266. https://doi.org/10.1016/j.jpeds.2020.03.013

Kaban, A. (2021). Use of learning management systems in the COVID-19 pandemic. In S. Jackowicz & I. Sahin (Eds.), *Online Education during the COVID-19 Pandemic: Issues, Benefits, Challenges, and Strategies* (pp. 81-98). ISTES Organization.

Kuitunen, I., & Renko, M. (2021). Lessons to learn from the current pandemic for future non-pharmaceutical interventions against the respiratory syncytial virus – nationwide register-study in Finland. *Infectious diseases*. *53*(6) 476-478. https://doi.org/10.1080/23744235.2021.1894351

Larson, L. C., & Northern Miller, T. (2011). 21st Century Skills: Prepare Students for the Future. *Kappa Delta Pi Record*, *47(*3), 121-123, DOI: 10.1080/00228958.2011.10516575

Loima, J. (2021). Equity vs. Ethic Literacy – Socio-Educational Dilemma in the Case of Pandemic Finland, Autumn 2020. *International Journal of Education and Literacy Studies, 9*(2), 2-14. http://dx.doi.org/10.7575/aiac.ijels.v.9n.2p.2

Loima, J., & Vibulphol, J. (2014). Internal interest of external performing? A Qualitative study on motivation and learning of 9th graders in Thailand basic education. *Journal of Education and Learning, 3*(3), 194-203. http://dx.doi.org/10.5539/jel.v3n3p194

Maldonado, J. E., & De Witte, K. (2022). The effect of school closures on standardised student test outcomes. *British Educational Research Journal, 48,* 49-94. https://doi.org/10.1002/berj.3754

Maslow, A. H. (1958). A Dynamic Theory of Human Motivation. In C. L. Stacey & M. DeMartino (Eds.), *Understanding human motivation* (pp. 26–47). Howard Allen Publishers. https://doi.org/10.1037/11305-004

Medina, J. (2022). Group agential epistemic injustice: Epistemic disempowerment and critical defanging of group epistemic agency. *Philosophical Issues*, 32, 320–334. https://doi.org/10.1111/phis.12221

Pearlman, B. (2010). Designing New Learning Environments to Support 21st Century Skills. In J. Bellanca, & R. Brandt (Eds.), *21st Century Skills: Rethinking How Students Learn* (pp. 117-138). Solution Tree Press.

Prime, H., Wade, M., & Browne, D. T. (2020). Risk and resilience in family well-being during the COVID-19 pandemic. *American Psychologist, 75*(5), 631–643. https://doi.org/10.1037/amp0000660

Reason, J. (2000). Human error: models and management. *BMJ (Clinical research ed.)*, *320*(7237), 768–770. https://doi.org/10.1136/bmj.320.7237.768

Tomasik, M. J., Helbling, L. A., & Moser, U. (2021). Educational gains of in-person vs. distance learning in primary and secondary schools: A natural experiment during the COVID-19 pandemic school closures in Switzerland. *International Journal of Psychology, 56*(4), 566-576. https://doi.org/10.1002/ijop.12728

Vlachos, J., Hertegård, E., & Svaleryd, H. B. (2021). The effects of school closures on SARS-CoV-2 among parents and teacher. *Proceedings of the National Academy of Sciences*, *118*(9). https://doi.org/10.1073/pnas.2020834118

Vogel, G. (2021, February 15). Keeping schools open without masks or quarantines doubled Swedish teachers' COVID-19 risk. https://www.sciencemag.org/news/2021/02/keeping-schools-open-without-masks-or-quarantines-doubled-swedish-teachers-COVID-19

Voogt, J., & Pareja Roblin, N. (2012). A comparative analysis of international frameworks for 21st century competences: Implications for national curriculum policies. *Journal of Curriculum Studies, 44(*3), 299-321. https://doi.org/10.1080/00220272.2012.668938

Whitley, J., Beauchamp M. H., & Brown, C. (2021). The impact of COVID-19 on the learning and achievement of vulnerable Canadian children and youth. *FACETS*. *6***,** 1693-1713. https://doi.org/10.1139/facets-2021-0096

APPENDIX 1.

Anonymous Questionnaire for teachers/Case study on learning, pedagogy and NPIs.

1. Did (possibly) isolated children get taught the same way as those in the classroom? Or, did the teachers use hybrid teaching classes?
2. If hybrid was used, did the pupils work with the same timetable? Did they use their own devices?
3. Did students have "learning losses" according to the teachers' (or their own) assessment?
4. What are teachers' professional opinions on non-pharmaceutical interventions (NPIs) you have had?