Republic of Korea
Case Study
Situation Analysis on the Effects of and Responses to COVID-19 on the Education Sector in Asia
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Republic of Korea Case Study

Situation Analysis on the Effects of and Responses to COVID-19 on the Education Sector in Asia

October 2021
October 2021

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Foreword

The pandemic caused a major children’s rights crisis: all service sectors being profoundly impacted, with the most disadvantaged being disproportionately affected.

COVID-19 – possibly the largest pandemic the world has ever seen – led to an economic crisis probably more radical and global than ever before; as well as disruption of learning on an unprecedented scale. The pandemic caused a major children’s rights crisis: all service sectors being profoundly impacted, with the most disadvantaged being disproportionately affected.

In response, with support from the Global Partnership for Education, UNICEF and UNESCO joined forces with Mott MacDonald, Cambridge Education to carry out a situation analysis, primarily to generate analyses to inform strategic responses to the crisis going forward. While the extension and duration of the pandemic required to invest more time to produce the final analyses and reports, fortunately information had already been discussed through webinars and national conversations with Ministries of Education and other partners across large parts of the Asia Pacific region.

Furthermore, the reports continue to be of utmost relevance given subsequent waves of COVID-19 sweeping across the world in 2021 and very likely in 2022 as well. The task of learning from the crisis and how to mitigate its effects in education is on-going. More than one academic year has now been lost for many children. To ensure continuity of learning whilst schools are closed, the delivery of education is radically changing today through distance education: digital, blended or hybrid learning have become part of the new learning reality which all Governments, teachers and learners will have to adjust to.

While major efforts are needed to mitigate the learning loss of those children who return to school in the post-COVID-19 recovery phase, we must also remember that many children were not learning before the crisis and several million were not even in schools. The reports therefore also explore opportunities to build back better and to re-imagine education; to shift from fact-based didactic methodologies to competency-based approaches, which are more flexible, better respond to the holistic needs and aspirations of all children, and provide opportunities for lifelong learning as per the Sustainable Development Goals (SDG) 4 agenda.

While the suite of reports provided within the Regional Situation Analysis are particularly relevant to the Asia Pacific region, contexts of course vary considerably across our huge region. At the same time, the reports may also provide insights that are relevant to other regions around the world. Hopefully the findings, including the country case studies, and regional budget needs analysis will help governments resume and accelerate progress towards SDG 4. The way education is conceptualized and delivered is changing fast, and the transformation journey will be steep and full of challenges. Governments, donors, all partners and the private sector will need to work together, not only to get the strategies and levels of investment right, but to build more resilient, effective and inclusive systems, able to deliver on the promise of education as a fundamental human right for all children, whether schools are open or closed.

Shigeru Aoyagi
Director
UNESCO Bangkok

Marcoluigi Corsi
Director a.i.
UNICEF East Asia and Pacific

George Laryea-Adjie
Regional Director
UNICEF South Asia
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# List of acronyms

<table>
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<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>COVID-19</td>
<td>Coronavirus disease</td>
</tr>
<tr>
<td>CSAT</td>
<td>College Scholastic Ability Test</td>
</tr>
<tr>
<td>CWD</td>
<td>Children with disabilities</td>
</tr>
<tr>
<td>EBS</td>
<td>Educational Broadcasting System</td>
</tr>
<tr>
<td>ECE</td>
<td>Early Childhood Education</td>
</tr>
<tr>
<td>EMIS</td>
<td>Education Management Information System</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communications Technology</td>
</tr>
<tr>
<td>KDCA</td>
<td>Korea Disease Control and Prevention Agency</td>
</tr>
<tr>
<td>KEDI</td>
<td>Korean Educational Development Institute</td>
</tr>
<tr>
<td>KERIS</td>
<td>Korea Education and Research Information Service</td>
</tr>
<tr>
<td>KMHW</td>
<td>Korean Ministry of Health and Welfare</td>
</tr>
<tr>
<td>LMS</td>
<td>Learning Management Systems</td>
</tr>
<tr>
<td>MOE</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>PISA</td>
<td>Programme for International Student Assessment</td>
</tr>
<tr>
<td>PPE</td>
<td>Personal Protective Equipment</td>
</tr>
<tr>
<td>PPP</td>
<td>Public Private Partnership</td>
</tr>
<tr>
<td>ROK</td>
<td>Republic of Korea</td>
</tr>
<tr>
<td>SES</td>
<td>Socioeconomic status</td>
</tr>
<tr>
<td>TALIS</td>
<td>Teaching and Learning International Survey</td>
</tr>
<tr>
<td>WASH</td>
<td>Water, sanitation and hygiene</td>
</tr>
</tbody>
</table>
On 20 January 2020, the first case of COVID-19 in the Republic of Korea (RoK) was announced. The number of confirmed cases increased on 20 February by 53, and by 1 March confirmed cases rose to over 1,000, according to the Korea Disease Control and Prevention Agency (KDCA). RoK introduced what was considered one of the largest and best-organized epidemic control programs in the world, using three phases of the epidemic preparedness and response framework: detection, containment, and treatment.

The COVID-19 crisis emerged and worsened just before the beginning of the new school year (2 March), and as part of the containment strategy schools were closed that month, and gradually re-opened in May 2020, with a priority for exam classes in Grades 9 and 12. So as to keep children safe while maintaining continuity of education, distance learning was introduced in April, implementing lessons both online and on television. The success of getting the nation’s students online was mainly down to having a well-established IT infrastructure and a national curriculum; however, it did not preclude inequalities, partly due to family socio-economic differences.

This case study is part of a series of reports across Asia commissioned by UNICEF and UNESCO to share lessons across countries. It outlines the challenges facing RoK’s education sector prior to the pandemic, and exacerbated by it, as well as both the successes and lessons learned from the Ministry of Education’s (MOE) response. This is followed by recommendations in the current context (in January 2021) for ‘building back better’, and focusing on the future.

The emphasis of this case study is on:
- The effects of and response to COVID-19 during the months of school closure; and
- Some recommendations for MOE based on the lessons learned.

The main challenges facing the education sector during the pandemic:
1. Providing a quick response to the pandemic to keep all children safe by closing schools while facilitating remote learning;
2. Teachers’ ability to adapt to preparing and supporting online and distance learning, without enough prior training;
3. Ensuring access and connectivity issues are solved within a short period of time, particularly for the most marginalized and vulnerable groups of students; and
4. Child safety and protection issues such as the increased risks to students’ mental health and online abuse.
RoK’s response to COVID-19 was impressive, as it flattened the epidemic curve quickly without closing businesses, locking down communities, or implementing many of the stricter measures adopted by other countries, although spikes in recent months have again challenged the health system, and forced some schools to close.

RoK has a high performing education system with enrolment, completion, transition and literacy rates for both girls and boys all in the high nineties; however, some education inequality gaps in gender, socio-economic status and disabilities still exist. RoK has increased the digitization of education, including trials of SMART1 schools, yet teachers, generally, have met many challenges when moving lessons online and teaching at a distance.

Effects and responses to the pandemic

The move to online classrooms had an impact on access to and participation in learning for vulnerable students, particularly those from low-income and migrant families, those students with disabilities, and those learners living in remote areas (including islands) due to the initial lack of devices and poor internet connection. Teachers reported widening achievement gaps between those students from families of higher socio-economic status, and those of lower status, and this gap between high and low achievers in their classes was widening as a result of online learning.

Common challenges for teachers include:

- The teachers’ lack of expertise in preparing for online lessons;
- Providing interactive tasks;
- Supporting students at a distance;
- The digital divide between students; and
- The features of the current school system, with its “authoritarian and hierarchical paradigm based on rote memorization of knowledge”2.

SMART learning is still not fully understood by some teachers, in terms of their pedagogy.

Learners were not prepared for online learning, but some had better support at home through their own digital literacy, private tuition, and parental supervision.

Among parents of students in middle and high schools, more than half were dissatisfied with online learning, and nearly half of elementary students’ parents said helping their children with their online classes was a burden.

Kindergartens were closed and were late to re-open, and online learning was not available for the youngest learners, which put more pressure on working parents (mothers particularly) as they had to leave work to look after their young children.

Threats to learners while facing a pandemic and remote learning:

- Disruption to daily routines and learning, fear, and anxiety due to family loss of income or unemployment impacted on the mental health of some students;
- Cyberbullying3 and online abuse, while using the internet, with girls being at greater risk4; and
- Domestic violence and child abuse when families were isolated at home for some time, and in some cases with little income, apart from government assistance5.

MOE attempted to put together a comprehensive online implementation and support package for students from primary to high school, knowing that 99.7 per cent of RoK households had access to the internet, and most teenagers used high-speed internet in their daily lives6.

Responses include:

- A ‘Preparation Task Force for the Upcoming Semester’ was established, in collaboration with local education offices, to support schools to reopen in an online environment;
- The ‘School-On’ website and the ‘Teacher On’ troubleshooting service are strong components of the online interventions, where teachers are encouraged to support and train their peers;
- At the school level, remote class management committees were established to further support teachers and other school staff members to deliver effective online lessons and continue to support students’ learning7;
- A telephone survey of parents and a questionnaire for teachers were implemented by MOE to support the school reopening process8. This focused on their experiences with remote learning, the timing of school re-opening, and who would return to school first;
- The government and private companies provided digital devices to those who needed them, and local authorities provided Wi-Fi access to low-income families, following an initial survey. MOE hired part-time instructors to help 29,000 underprivileged students at elementary schools. Some students with disabilities were provided with targeted support to meet their specific needs;
• Some families were supported by the Emergency Childcare Programme. Emergency cash payments were made to all but the richest families, in a bid to ease the drawn-out economic impact of the COVID-19 outbreak;
• A health survey was designed to be filled out by each school student at the start of each school day, along with temperature-taking and other precautionary measures;
• Legislation is likely to be passed to protect young people against cyberbullying; and
• MOE plan to establish 28 centres within three years for pre-teacher training in distance learning, and to address educational disparities.

Lessons learned

• The initial response to COVID-19 ensured access for most students and some continuity of learning, but the emphasis now will be to ensure equity and quality during consequent waves of the pandemic. Access cannot be equated with quality of learning, as those who are not conversant with digital devices (i.e., are not digitally literate) are likely to have difficulties learning from them, at least during initial stages.

Other lessons learned include:

• Current high-stakes assessment processes are not keeping up with the government’s vision, and the rote learning and ‘cramming’ to get through exams is preventing a real transformation of education in RoK. This provides resistance in teachers, students and parents, for fear of failure;
• A focus on the socio-emotional learning may help to balance the much-stronger emphasis on more traditional and teacher-dominated approaches of content-focused learning;
• Learning loss is likely to affect some learners for some time and without fully engaging students and their families, and teachers will not be able to manage an effective blended learning future;
• Principals and their staff will need to actively engage families to improve the transition from school learning to learning remotely;
• Investment in psychological services is still too low to meet the increasing demands to support the mental health of learners;
• As part of ‘digitising society’, the government has to bring in protective laws and practices to ensure young people are kept safe;

• Kindergartens were the last to open, and teachers were not prepared pedagogically to support children at home, remotely. Little priority was given to pre-primary learning when moving classes online, when kindergartens were closed, yet younger children are key to the future of the nation;
• When disadvantaged children and vulnerable young people are considered ‘after the event’, the effects on their access and participation and ultimately their learning are affected. If vulnerable learners are directly supported from the initial stage, the rest will benefit automatically; and
• Smart technology demands a new pedagogy linked to curriculum and formative assessment. Without further training, teachers are not able to make the best use of the potential for individualized learning, which can reduce present inequalities.

Recommendations

Chapter four explores some of the options that MOE could consider based on lessons learned increasing resilience to future shocks and in preparation for education strategic planning.

Proposed options:

1. Building a more sustainable system of which blended learning is further promoted: Implement a national evaluation of what really happened during the pandemic, with a particular focus on equity and well-being. Create a costed simulation study of sub-sector allocation needs from now until 2030 to project financial needs, while factoring in demographic trends.

2. Teacher training and support: Plan comprehensive training for all teachers and develop new materials to support blended learning as a normal way of working, not just for emergency application, as well as how to develop and run distance learning in times of crisis.

3. School management and parental/community engagement: Support school leaders to be better prepared for a range of scenarios so that they have the skills and the trust of the local community, to manage emergencies.

4. Assessment of learning and curriculum adaptation: Reforms needed in learning assessment, with a focus on student agency, curriculum adaptation, reduced competition, and more emphasis on formative assessment.
5. Data, monitoring and evaluation: Ensure that data is disaggregated to consider different types of disability, and that those learners who may drop out are accounted for and can transition back to school.

6. Coordination and partnerships (including inter-ministerial and public private partnerships): Further develop and formalize Public Private Partnerships (PPP) to support the response, such as sourcing student digital devices, video clips and associated paper-based materials to form comprehensive learning packages.

7. Project day: A consideration could be made for a pilot trial of an innovative four-day week. For four days the normal curriculum is implemented with the students, with the fifth being more open to collaborative problem solving with minimal supervision.

8. Mental health, well-being and protection: Address these issues through:
   » Protection: Laws that protect children and young people while online need to be strengthened.
   » Student agency: Ensure fora are available for children and young people to express themselves and participate in planning for their future.
   » Build community awareness: So that all children and young people get the support for their learning and well-being.

Conclusion

The lesson here is to celebrate the potential gains of remote learning while being reminded that everyone should benefit from this new era of blended learning, and to be aware of potential inequalities during the process. Teachers have had some training in information and communication technology (ICT), but before this crisis, some have not gained a true belief that this is the future for formal learning. MOE can continue to use the teachers who are true believers and influencers, to train their peers, based on their practical experience and innovations (within local and national communities of practice). While children and young people increase their time accessing the internet, laws that protect them while online need to be strengthened and vigorously enforced. The very youngest children need to learn digital literacy, so that they can control and protect themselves while learning online. If remote learning can build on past successes and improve, resulting in a more ‘level playing field’ for all learners, then RoK will have learned much from this emergency and left it more resilient to counter future shocks. Budgets and legal frameworks need to be revised in light of the need for increased investments now, to reap the benefits of a digitised education transformation, and become a world leader in the near future.

“In online learning, there is more room for educational inequality to worsen, but at the same time, there exists opportunities to enhance personalized learning.”
The table below provides a snapshot of the pandemic, education sector response and background information for the Republic of Korea.

<table>
<thead>
<tr>
<th>DIMENSION</th>
<th>INDICATOR/QUESTION</th>
<th>INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epidemiology</td>
<td>Date of first confirmed case</td>
<td>20 January 2020</td>
</tr>
<tr>
<td></td>
<td>Date of first confirmed death</td>
<td>21 February 2020</td>
</tr>
<tr>
<td></td>
<td>COVID-19 cases and deaths over time</td>
<td>Total cases 79,762 with 1,448 deaths and 451 new cases. Spike in Daegu considerably increased death toll.</td>
</tr>
<tr>
<td></td>
<td>Details about the pandemic and</td>
<td>RoK was heavily impacted during the initial stages of the pandemic, becoming one of the most affected countries. The experience from the 2015 MERS outbreak allowed RoK to apply lessons learned in the health sector to this new pandemic. The country was successful in controlling the virus through a comprehensive track and trace system, without shutting down the economy. However, RoK has suffered a third spike in the number of cases of COVID-19 (1,000 new daily cases towards the end of 2020). A coordinated government response was headed by the Central Disaster and Safety Countermeasures Headquarters, which emphasized transparency and open communication. MOE decided to delay the physical opening of schools from March to May while implementing a distance learning plan, starting in April 2020 (start of new academic year).</td>
</tr>
<tr>
<td></td>
<td>government responses and supports</td>
<td></td>
</tr>
<tr>
<td>School Closure</td>
<td>Were schools closed, partially or fully?</td>
<td>Closed for 11 weeks</td>
</tr>
<tr>
<td></td>
<td>Date of school closures</td>
<td>2 March 2020</td>
</tr>
<tr>
<td></td>
<td>Date of school reopening</td>
<td>From 20 May 2020, in stages</td>
</tr>
<tr>
<td></td>
<td>Have schools reopened fully or partially?</td>
<td>Nationally open with some limitations (depending on local situation with regards to number of COVID-19 cases) e.g., local spikes causing closures in Daegu and Seoul.</td>
</tr>
<tr>
<td>Key Vulnerable Groups</td>
<td>Key vulnerable groups affected by the</td>
<td>Students from low-income families, learners with disabilities, children of migrant and multicultural families, North Korean refugees, out-of-school students.</td>
</tr>
<tr>
<td></td>
<td>impact of COVID-19 on the education sector</td>
<td></td>
</tr>
<tr>
<td>Education System</td>
<td>Brief description of the structure of the</td>
<td>There are six years of primary school, three years of lower secondary school and three years of upper secondary school, which is either academic or vocational. RoK offers free half-day public pre-schools (kindergartens) for three- to five-year olds, and reaches 90% enrolment of three-year olds. Governance of the education system is shared between central and local authorities. MOE has set centralized mechanisms to respond to emergencies, but local autonomy includes managing school openings and closures due to local case numbers.</td>
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<td>Structure</td>
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<thead>
<tr>
<th>Pre-COVID-19 Progress Towards SDG4 Indicators**</th>
<th>female</th>
<th>male</th>
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<tbody>
<tr>
<td>2018 data:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Out of school (primary)</td>
<td>12,519</td>
<td>12,706</td>
</tr>
<tr>
<td>Out of school (secondary)</td>
<td>18,571</td>
<td>19,732</td>
</tr>
<tr>
<td>NER (pre-primary)</td>
<td>93.7%</td>
<td>93.3%</td>
</tr>
<tr>
<td>NER (primary)</td>
<td>98.8%</td>
<td>98.9%</td>
</tr>
<tr>
<td>NER (secondary)</td>
<td>95.6%</td>
<td>96.0%</td>
</tr>
<tr>
<td>2017 data:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survival to the last grade of primary</td>
<td>99.2%</td>
<td>99.3%</td>
</tr>
<tr>
<td>Effective transition rate from primary to lower secondary general education</td>
<td>99.4%</td>
<td>99.6%</td>
</tr>
<tr>
<td>Other data:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literacy rate (15-24 years) (2008)</td>
<td>100%</td>
<td>99.9%</td>
</tr>
<tr>
<td>Government expenditure on education as % of GDP</td>
<td>4.33%</td>
<td>(2016)</td>
</tr>
</tbody>
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01
Introduction
1.1 Background

The global nature of the COVID-19 pandemic makes it different, affecting the whole world with the twin shocks of a health emergency and an economic recession. This will lead to long-term costs on human capital accumulation, development prospects and welfare. Containment measures to the pandemic have disproportionally affected the most vulnerable and marginalized members of society.

Some of the most susceptible children felt the side-effects of COVID-19 from the moment nationwide lockdowns were put in place to control its spread. Markets, workshops, farms and factories closed, leaving children and families stranded. For many, the fear and uncertainty continue. Some minorities find themselves stigmatized and accused of causing or spreading the virus, while deep-rooted inequalities in societies are being exposed.

With its huge population and overcrowded cities, Asia is potentially very vulnerable to COVID-19, which spreads through close contact with infected people. The contexts within which people of South Asia, South East Asia and East Asia are having to cope with the virus are vastly different, with a disparity in living conditions and varying degrees of access to, and quality of, essential services such as health and education. Across the continent there is vast inequality between rich and poor, and therefore different levels of resilience to the shocks that this disease has brought, putting the deprived at long-term risks far beyond contracting the virus. This region regularly suffers from calamities, which lead to localized learning interruptions. For example, during the pandemic, Bangladesh and India were in the path of a cyclone, and recent floods have threatened communities.

This Situation Analysis has been undertaken as part of the broader examination initiated by UNICEF and UNESCO, to provide a snapshot of the educational responses and effects of COVID-19 across Asia. It considers the direct effects of school closures and reopening, and identifies the initial impact that this may have on learners, their families, and the overall education system. In doing so, it aims to develop insight based on the variety of responses to the pandemic, with a view to assessing their efficacy in Asia. It seeks understanding on the contextual factors that may have supported or hindered learning, with particular attention on the most disadvantaged groups (who will be most affected by the pandemic). For this, the analysis has the following objectives:

- To assess and estimate the various impacts of the COVID-19 epidemic on the education sector and stakeholders in Asia;
- To examine policy and financial implications on progress towards achieving SDG4-Education 2030; and
- To identify examples of promising responses and strategies in education and associated social sectors, which can be shared with other countries.

The Situation Analysis identifies examples of effective country approaches that could be replicated or adapted for use in other countries. Following the development of the case studies (including this RoK situation analysis), the overall study will include an overview of the situation in each of the three Asian sub-regions: South, East and Southeast Asia, and finally the region as a whole.
1.2 Methodology

The study includes an overview of the situation in each of these three sub-regions, with case studies providing a more in-depth look at specific areas in 14 countries. The case studies have been supported by the UNICEF and UNESCO offices in each country. They have provided relevant information and assisted the researchers to contact relevant officials to collect country-specific documents, grey literature and data that will help us tell the story of the COVID-19 impact across Asia and the responses of each education system.

In addition to a literature review, each case study has also involved interviews with key stakeholders (listed in Annex A), which include government policy makers and implementers, UNICEF and UNESCO teams, and Education Sector stakeholders. This has provided an opportunity to learn more about the challenges faced and the responses developed, and provided a space for discussion and debate on lessons learned and what still needs to be done.

A cross-cutting focus on the most vulnerable members of society, particularly highlighting girls and learners with disabilities, has been used across the case studies. The aim of this is to identify interventions, which have been able to successfully reach the most marginalized communities, and how their different needs were addressed to increase accessibility and participation for all.

1.3 Structure of the case study

The case studies are structured in five sections. Chapter 2 discusses the effects of COVID-19 on the education system against four dimensions (see Figure 2); challenges are identified and then the responses are set out against the three phases of school re-opening, depending on the specific context of each case study country. Chapter 3 provides a deep dive into a particular theme, which was identified in each case study country by the UNICEF and UNESCO country teams. Chapter 4 provides an overview of the lessons learned providing specific recommendations for the case study country, as well as for other countries on ‘building back better’, and increasing the resilience of the education system to future shocks.
02

Effects of and responses to COVID-19 on the education sector in the republic of Korea
This chapter will outline the effects and responses on the education sector in RoK in relation to some key dimensions, such as access and participation in learning, safe operations, health and well-being, and finance.

2.1 Introduction

RoK’s response to COVID-19 was impressive, as it flattened the epidemic curve quickly without closing businesses, locking down communities, or implementing many of the stricter measures adopted by other countries. A combination of extensive testing, location tracking, and contact tracing helped the country get control of the virus, even after massive surges in cases (February, August and December 2020). The government information campaign communicated two main components: risk factors and useful protection measures. Daily press briefings, websites, and automated text messages helped to answer questions related to COVID-19. Although the track-and-trace system was a successful component of the fight against virus transmission, the government’s approach to track and trace data collection and use raised ethical concerns in terms of social stigma and data protection issues.

RoK has a high performing education system with enrolment, completion, transition and literacy rates for both girls and boys all in the high nineties (see Country Fact Sheet). Some education inequality gaps in gender, socio-economic status and disabilities still exist, and at a 2018 forum on the Sustainable Development Goals, it was agreed that it is necessary to develop systematic national indicators for inclusive and equitable quality education and lifelong learning for all. Using five national plans, RoK has increased the digitization of education, including trials of SMART schools; yet teachers, generally, have met many challenges when moving lessons online and teaching at a distance.

2.2 Effects of COVID-19 against four dimensions

Access to and participation in learning

The COVID-19 pandemic had an immediate impact on access to and participation in learning in RoK, with the start of the school year postponed. So in order to keep children safe while maintaining continuity of education, remote learning was introduced, mainly online, with some TV content for early primary learners. Across RoK, 4 per cent of students did not have access to digital devices within their household. With the move to online classrooms, this created a barrier for vulnerable students in their continued access to education.

Common challenges for teachers, seen during a rapid introduction of online learning, include the teachers’ lack of expertise in preparing for online lessons, providing interactive tasks, supporting students at a distance, and the digital divide between students. Teachers reported widening achievement gaps between those students from families of higher socio-economic status, and those of lower. Challenges also existed for students:

“Reduced interaction with teachers, digital distractions and technical difficulties are widening the education achievement gap among students in RoK, leaving those less well off at even more of a disadvantage.”

All learners were not prepared for online learning, but some had better support at home through their digital literacy, private tuition and parental supervision. Added to these, there is evidence that learners’ personal factors come into play, such as motivation, practice in learning independently, and presence or lack of digital skills.
Kindergartens were closed and were late to re-open, and online learning was not available for the youngest learners, which put more pressure on working parents (mothers particularly), as they had to leave work to look after their young children. This protracted period of disruption for the youngest learners would have an impact as no online stimulation was available. Although emergency childcare was on offer by the government, for children of essential workers, some parents were cautious to send their children for childcare, where available, in case they caught the virus. There was some difference in closing dates for day-care centres administered by the Ministry of Health and Welfare (up to five-years of age), and Ministry of Education administered Kindergartens (three to five-years of age).

As in many other countries, teachers in RoK faced additional burdens and responsibilities during COVID-19. Initially, during school closures and the subsequent move to online classrooms, teachers were required to acquire new skills to research and deliver lessons using online learning platforms, which many had not experienced previously. Teachers expressed concerns about the quality of content and instruction because of the short period of preparation and limitations in the means of instruction.

“Teachers couldn’t be prepared enough because we were told to provide online learning classes in only one week 24.”

Other evidence for the lack of preparedness of teachers for online learning comes from Teaching and Learning International Survey (TALIS) and the Programme for International Student Assessment (PISA) surveys (Figure 3). Results from the 2018 TALIS prior to the crisis, illustrates, on the one hand, some good preparation where 71 per cent of RoK teachers felt that they could support student online learning, yet more than 20 per cent of teachers needed professional development in ICT skills for their teaching.

Safe operations

Safe operations of schools were hindered during the pandemic due to the risk of virus transmission within the school environment, until such protection as disinfection, arrangement of furniture in classrooms to support social distancing, and other such measures were put in place. Protection screens were used in some classrooms, and dining halls to keep students at a safe distance. In some cases, students only attended part of the week, to reduce daily numbers on site at any one time.
**Health, well-being and protection**

The resulting school closures, due to the pandemic, and move to online learning, while protecting their physical self, impacted on the mental health and well-being of students. This was due to the disruption to daily routines and learning, as well as additional fear and anxiety due to family loss of income or unemployment, as well as online threats.

Student mental health has been under pressure for some time due to the increased competition within the education system, with RoK being in the position of having a high number of youth suicides.

“Experts point out that suicide among young women was up an alarming 17.9 per cent in April, the month when the pandemic was raging through RoK society. Schools and universities were shut down, companies were attempting to arrange for employees to work from home, firms were going under, and opportunities to go out with friends or family for meals or drinks simply vanished due to the virus.”

Increased worry and anxiety during this pandemic will have increased the number of stressors acting on young people, such as family loss of income and loss of preparation time for exams. Evidence exists from Viet Nam of three-year-olds experiencing anxiety during the time of the pandemic. This was due to the long period of school closure, limited access to playful activities and age-appropriate materials, limited opportunities to connect with friends and with their teacher, as well as family stress due to interruption of employment and reduced income.

There are understandably wide variations in how students react to school closure and online learning, given their home circumstances. Learners needed interaction with their peers and teachers, yet this was not always possible, due to social distancing, leading to social isolation. A recent study stated:

“COVID-19-related mental health issues are deeply related to social isolation, loss of social support, or stigmatization.”

While the government’s track-and-trace system was effective, the open communication about an individual’s location and state of health, led some people to be stigmatized and even shunned within their community.

Domestic violence and child abuse were also commonly reported in the news when families were isolated at home, for some time, and in some cases with little income, apart from government assistance.

Although there is no accurate data as yet, there are researchers looking into the effects of staying at home for long periods of time and working from screens for several hours at a time. This more sedentary practice (note closure of gyms, parks and swimming pools) reduces the opportunity for physical exercise, and due to social distancing, less shopping may be done for fresh produce – giving way to using food delivery services, which are well developed in RoK. According to food delivery apps (Baemin and Yogiyo), the number of deliveries in 2020, compared with 6 January to 21 January, increased by 11 per cent between 1 February and 16 February, when the virus had spread across the country. Delivered food options tended to be fast-food with high glycaemic loads and excessive salt and sugar, with less fresh fruit and vegetables. Poor exercise and eating habits may lead to longer term patterns with a negative effect on health. Those children who benefited from school meals would have been denied these during school closure.

**Online protection**

There is some evidence that while using the internet, cyberbullying and online abuse was experienced, with girls being at greater risk. According to a report from Light, a company that detects and filters abusive and toxic content online, hate speech among children and adolescents increased by 70 per cent since the students started classes online. There is now a push to legislate against cyberbullying, as it has become so prevalent.

With more young people accessing the internet, the incidence of criminal activity against young people, particularly girls, has also increased. Research suggests such crimes may be widespread. According to a survey by Tactee Naeil, 12 per cent of middle school students and 4 per cent of elementary school students have experienced a sexual approach online. A representative from Mental Health Korea stated victims remain afraid that if they report crimes to the police, their parents will find out. According to police, more than 2,500 people were detained last year for digital sex crimes in RoK. However, inadequate laws, weak sentencing, and poor policing mean that such crimes are rarely treated seriously by the justice system and as a result, victims feel discouraged from coming forward. Some countries have laws punishing online sexual grooming, but RoK does not yet have such a law. One attorney stated that judges tended to have little understanding of digital sex crimes and often did not comprehend the scale and impact of the crimes on victims. That meant perpetrators were given a lighter sentence. As this is now being recognized as a serious problem and an inevitable part of ‘digitising society’, the government must bring in protective laws and practices to ensure young people are kept safe.
Finance

According to a report from Statistics Korea, average household income for the bottom 10 per cent shrink by 3.6 per cent during the first quarter of the year. The economic shock of COVID-19 took a bigger toll on low-income families, as the number of low-paying temporary jobs sharply declined.38

"Even though the government funnelled cash into low-income families through various relief measures, heavy job losses for low-wage workers led to a notable reduction in their earned income in the first quarter39."

"Even after the COVID-19 outbreak slows down sometime in the near future, declining output in the service industry will continue to worsen the unemployment issues, as well as the income gap between the rich and poor40."

"The county's overall industrial output in the service sector plunged 4.4 per cent in March from a month earlier, mainly due to reduced private consumption, as well as sluggish exports41."

The public health budget and flexible fiscal management systems allowed the RoK Government to provide adequate resources. The government and national health insurance programme shouldered the full cost of COVID-19 testing, quarantine, and treatment for Korean citizens and non-citizens. Furthermore, on 17 March, 2020, the South Korean Legislature passed the supplementary budget of 11.7 trillion won ($10.5 billion) in 12 days. The Korean Ministry of Health and Welfare’s (KMHW) supplementary budget passed in March 2020 was 3.7 trillion won ($3.3 billion), which enabled KMHW to increase COVID-19 prevention and treatment facilities, and to support medical institutions and workers42.

As a result of COVID-19 there was increased pressure on the education system for financial investment and resources. The additional responses required additional funding, as did the measures to make schools COVID-19 secure. As a result, there is a planned reduction in funds for several government institutions of up to 10 per cent, due to a ‘re-balancing’ of the education budget, leading to a reduced education system provision, just when it is most needed43.

2.3 Education sector response to COVID-19 to support continuity of learning

The initial challenge was preparing for online/distance learning in a short time and secondly, managing online/distance learning so that all students, including the most disadvantaged, vulnerable children and adolescents, can access, participate and learn effectively.

MOE attempted to put together a comprehensive online implementation and support package for students from primary to high school, knowing that 99.7 per cent of RoK households had access to the internet, and most teenagers used high-speed internet in their daily lives44. Although internet penetration of 96 per cent (Figure 4) looks like a very positive number, it also means that 4 per cent do not have access to the internet. An initial survey was undertaken to determine national need for digital devices and internet access, based on the results of MOE-provided funds to local authorities to provide Wi-Fi access to low-income families.
Education system

To support access to and participation in online learning in RoK, MOE recognized the need to temporarily restructure their organization to provide the resources needed for these new functions. They created the ‘Distance Education Support Division’ to support schools and teachers in the move to online classrooms (Figure 5). This new division supported the operational aspect of the online system and platform, ensuring teachers were equipped with the necessary information and preparatory activities.

The RoK education system responded to school closures through a multi-sectoral approach, seeking support and expert advice from other government departments such as KDCA and the Central Disaster and Safety Countermeasures Headquarters. For example, under the leadership of the Vice Minister of Education, a ‘Preparation Task Force for the Upcoming Semester’ was established to support schools for the reopening of schools in an online environment. This taskforce was supplementary to pre-existing education administrative services and supported schools alongside the Metropolitan and Provincial Offices of Education.

At the school level, remote class management committees were established to further support teachers and other school staff members to deliver effective online lessons and continue to support students’ learning. The committees were comprised of members of staff from different faculties, working on curriculum development, guidelines and developing communication systems for teachers. This displays the autonomous response, which allowed schools to respond to the pandemic in relation to their local context and needs.

Phase 1: Prior to reopening

The school year in RoK was set to commence on 2 March 2020, so was initially not affected by COVID-19-related closures, as schools were already closed for the holidays. However, as the start of the school year drew closer, the educational system was impacted, and physical school closures were announced.

The start of the school year in RoK, in terms of school opening, was postponed several times, reflecting the epidemiological uncertainty of the COVID-19 pandemic. Table 1, from MOE, displays the school closures and the postponement of reopening.

### Table 1 | Postponement of School Reopening

<table>
<thead>
<tr>
<th>1ST</th>
<th>2ND</th>
<th>3RD</th>
<th>4TH</th>
<th>Phased Online Opening</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-6 March</td>
<td>9-20 March</td>
<td>23 March-3 April</td>
<td>6-8 April</td>
<td>9 April</td>
</tr>
<tr>
<td>5 days</td>
<td>10 days</td>
<td>10 days</td>
<td>3 days</td>
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FIGURE 5 | ORGANIZATIONAL RESTRUCTURING AT THE MINISTRY OF EDUCATION

New Semester Preparation Committee  
(Vice Minister of Education)

Provincial Preparation Support Team  
(Deputy School Superintendent)

Quarantine Management Division

Student Learning Support Division

Distance Education Preparation Division

General Support Team

Commodity Support Team

Status Inspection Team

Learning Support Team

Emergency Care Support Team

Academy Management Team

Distance Education Preparation Division

Academy Management Team
Following the delayed commencement of the school semester, a phased online opening of the school year and semester started on 9 April, 2020. Initially, only higher-grade students at middle and high schools started online on 9 April, reflecting the priority given to final-year examinations at both types of schools respectively. The remainder of the grades across middle and elementary settings started online lessons by 16-17 April, 2020. From 13 May, exam classes were allowed to return to face-to-face classes, in preparation for the delayed college entrance exams (now postponed from November to December 2020). There were no online sessions for kindergarten children.

Access to and participation in learning

Much of the focus of the educational response in RoK to COVID-19 was on the area of access to, and participation in learning, while protecting students’ health. With the wide internet coverage in the country, the shift to online learning was inevitable. The move to online classrooms had an impact on access to and participation in learning for vulnerable students, particularly those from low-income and migrant families, those students with disabilities, and those learners living in remote areas (including islands) due to the initial lack of devices and poor internet connection.

In addition to the funds provided to increase Wi-Fi access to low-income families mentioned earlier, remote areas received alternative support depending on their context. Students on remote islands in RoK struggled with the high bandwidth required to access remote learning materials, which were mostly high-quality videos, as the remote islands rely on a microwave wireless network that could not transmit this high-quality data. Some local offices of education responded to this by ensuring alternative communication methods were available as a back-up, such as social networking services (for example, Kakoa Talk and Band), and using mobile devices. Others ensured students were sent physical materials to their home, to supplement online materials where they could access the internet.

To solve the issue of access to devices for online learning, the government and private companies provided digital devices to those who needed them. Offices of Education used student data on home background and families receiving state benefits to prepare the list of beneficiaries for digital devices. In fact, this is one strength of the RoK Government, in that data is available for at-risk students, thus facilitating targeted support.

To further support disadvantaged students who did not have access to digital devices, from 6 April, first and second-grade students could access a limited number of educational programmes that were broadcast on both terrestrial and cable TV channels on the Educational Broadcasting System (EBS). This also helped to reduce the need for expertise in computer use and to avoid competition for digital devices at home. This was based on a new curriculum for first and second-grade students developed by MOE. The subjects included Korean and mathematics, as well as integrated content covering several subjects.
TV broadcasts also encouraged support from parents as a shared activity. A study package consisting of home-study materials was also sent to each home, and teachers have been checking on students’ attendance and progress using text messaging with their parents. The broadcasts even continued when schools reopened, offering a supplementary educational product. This approach can inform the development of a more blended system of education in the future.

Schools could monitor students’ attendance either in real-time or at the end of an online class. Teachers could use Learning Management Systems (LMS) and supporting documents such as parent confirmation and learning reports, to check initial student engagement, although this would not give enough information on the amount of learning achieved during the period. Student feedback to their teachers (voluntary and via SMS) could provide such valuable information.

A survey by the Korea Education and Research Information Service (KERIS) stated that eight out of 10 teachers believe that the gap between high and low achievers in their classes was widening as a result of online learning. Many (64.9 per cent) attributed the gap to differences in student self-motivation and independent learning skills. Of course, if teachers do not encourage independent learning at school, students will be less prepared for engaging and learning at home.

Teachers

An encouraging aspect of online learning was the importance paid to teachers, learning from their peers through online platforms that were established:

- MOE’s website ‘Comprehensive Support Portal for School Records’ includes teacher training videos explaining the guidelines and operation examples of distance learning;
- MOE formed the ‘10,000 community’, made up of mainly experienced teachers who were ready to support other teachers as they venture into remote learning; and
- Helplines were established to give feedback to teachers, parents, and students to address any technical difficulties they experience with online classes.

Despite school closures, teachers across RoK received training and support to transition to online learning. One such example of this was the Ministry of Education delivering training to teachers through their own TV channel. The videos covered the new guidelines as part of the online classrooms and provided advice on how to effectively support students and deliver distance learning. The videos were then made available to all teachers through MOE’s ‘Comprehensive Support’ website, and could be referred to as and when needed.

One important change for teachers is their shifting role from transmitters of knowledge to mediators in learning; without enough real practice and learning from peers, this attitudinal change will take time to achieve.

Head teachers have encountered daily problems as they have to continually adjust the curriculum to align with sudden school closures, even though they may have just opened, as in Seoul on 11 September (closed on 20 September). This is where an effective blended learning model with smoother transitions will help in this and other emergencies.

“Students will not spend much time at school as they do now. They might have to come to school only for morning classes or even every other day, stated the president of the Korean Educational Development Institute, a research group that develops educational goals, methods and policy solutions for MOE.”

While schools were closed, school counselling was not accessible to students, just when they needed it. Studies have shown that school-based mental health services positively affect students’ mental health. School counselling services are primary interventions, but they also act as a gateway to external and professional counselling.

Parents

Both students and parents had to make considerable adjustments to the ‘new normal’ of learning at home. During one survey, parents complained about a lack of communication between teachers and students during online classes. In the last semester, 45.1 per cent of teachers relied on ‘one-way’ delivery while only 14.8 per cent focused on interaction. Among parents of students in middle and high schools, more than half were dissatisfied with online learning, and nearly half of elementary students’ parents said helping their children with their online classes was a burden. Parents were also concerned about balancing work and childcare when schools were closed, although the government provided support with the Emergency Childcare Programme.
Due to the gendered division of care and housework in RoK, mothers tend to be highly involved in their children’s education. Monitoring children’s online education was particularly difficult, not only for employed mothers, but also for migrant mothers whose first language is not Korean.59

Families with restricted resources experienced more difficulties providing an adequate learning environment for their children during online schooling. The lack of resources relates not only to physical and material support but also knowledge of the educational system, or subject matter, and Korean language proficiency for multi-cultural families.60

There is anecdotal evidence of some distrust between teachers and parents, which could be reduced by more frequent communication between schools and families.

Health and well-being

In a collaborative effort with schools, the Metropolitan and Provincial Offices of Education, the Korean National Police Agency, and the Ministry of Education implemented safeguarding measures to ensure the well-being of vulnerable students was maintained during school closures. Any extended periods of unexplained absence, which were tracked through LMS attendance records with online learning, were investigated, where there was a particular concern around a student’s absence.

Seoul Metropolitan Office of Education created and distributed a ‘Stress Management and Mental Health Promotion Online Education Programme’ to student groups. This included age-appropriate mental health checklists, including physical activity programmes.63

Finance

RoK made emergency cash payments to all but the richest families in a bid to ease the drawn-out economic impact of the COVID-19 outbreak. This ‘emergency disaster relief payment’ of up to 1 million won ($898) was made to all households (21.71 million), except the top 30 per cent by income, totalling some 14.3 trillion won ($12.8 billion). Some 2.8 million households that belong to vulnerable groups, such as beneficiaries of national basic livelihood security and disability pensions, started receiving funds first.

Under social assistance measures the government also responded by providing:

- Cash transfers: To low-income households getting unemployed benefits and to those under COVID-19 treatment/quarantine;
- Childcare support: The government will support childcare with 2.4 trillion won ($2.15 billion) to low-income households as they shift from child day-care to homecare;
- Food vouchers: 2.8 trillion won ($2.51 billion) are provided via four-month-worth purchase vouchers to households receiving child and social assistance; and
- Unemployment benefits: Income support to those who are not eligible for employment insurance—self-employers, freelancers in lieu of employment retention/unemployment benefits (but only those in a low-wage bracket).
In response to COVID-19, under the directive of the Ministry of Education, an additional 287.2 billion won ($258 million), which is about 0.4 per cent of the annual education budget, was assigned to the RoK education budget on 17 March, 2020, to support school closures, safe re-opening and online learning, and other subsequent actions during the emergency. These funds were distributed to the 17 regional education offices, to purchase equipment such as digital cameras, install Wi-Fi in more classrooms, measure body temperature on entry to school, and provide personal protective equipment (PPE) for staff and students. Finally, additional human resources were also required, e.g., extra staff to support safe arrival and conduct in schools.

**Safeguarding**

Online class operational standards were provided on the safe use of digital devices and platforms, e.g., avoid replying to unsolicited emails, which is taken from the ‘10 rules for successful online classes’. This was developed by MOE in cooperation with the Ministry of Science and ICT. Other advice includes using password-secured video conferencing, using only secure video conferencing apps, installing a security patch before use, and anti-virus software. In addition, rules around sharing photographs of teachers and students were clearly stated. As mentioned earlier, cyberbullying increased and now legislation is likely to be passed to protect young people against this.

**Equity**

A key equity challenge was to ensure that all students, despite location, economic situation, gender or disability, had the same opportunity to access the online materials that were being created and produced. There is not enough disaggregated data to understand whether there were any gender or disability differences in the participation during learning online, but there is initial evidence indicating that female students are disadvantaged during online courses. Further research, with data disaggregated by gender, geography and disability, and equity-focused analysis of reach and effectiveness of remote learning, is recommended.

Some students with disabilities were provided with targeted support to meet their specific needs. As well as relevant materials (some online), some students also received home visits. Some materials were provided in braille, and some videos have subtitles and sign language. MOE, in collaboration with the Ministry of Science and ICT, and the three major telecom companies in RoK, ensured that designated education websites could be accessed free of charge. MOE had also announced a distance learning programme at primary level, to support students with severe physical disabilities/health issues, to continue their education, remotely. Table 2 outlines the support provided to children with disabilities, which were normally only available to them in the school environment.

**TABLE 2 | CUSTOMIZED SUPPORT FOR STUDENTS WITH DIFFERENT TYPES OF DISABILITIES**

<table>
<thead>
<tr>
<th>TYPE OF DISABILITY</th>
<th>CUSTOMIZED SUPPORT</th>
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<tbody>
<tr>
<td>Visual Impairment</td>
<td>EBS online content is provided in braille, with learning materials customized and developed in larger fonts and braille.</td>
</tr>
<tr>
<td>Hearing Impairment</td>
<td>Newly developed EBS lectures include subtitles, and the educational content on the Eduable website includes sign language and subtitles, with regional support centres providing sign language and stenography services.</td>
</tr>
<tr>
<td>Physical Impairment</td>
<td>Learning devices and assistive technology devices are provided.</td>
</tr>
<tr>
<td>Developmental Impairment</td>
<td>Various forms of distance learning are provided, including a combination of home visits and online learning, as well as content-oriented and task-oriented online classes.</td>
</tr>
</tbody>
</table>

The Ministry of Gender Equality and Family initiated support to vulnerable families (such as multicultural families, single-parent/grandparent-grandchild families, migrant families) who were having difficulties with learning online. For example, students from multicultural families were supported by a system which interpreted and translated materials into various languages and circulated these where needed. Added to this, teachers also volunteered to translate for language minority students and posted translations on YouTube.

To address the widening gap in learning between students with higher and lower learning outcomes, identified by about 80 per cent of the 51,021 teachers surveyed by the government, MOE hired part-time instructors to help 29,000 underprivileged students at elementary schools. Some teachers have been assigned to work one-on-one temporarily with about 2,300 high school students, who were identified by their schools as ‘struggling’.
To support parents, the Ministry of Health and Welfare, the Ministry of Gender, Equality and Family and MOE expanded at-home childcare services, under the government’s efforts to help parents assist their children’s participation in online classes. Emergency childcare was offered to families where parents are out working, as well as families in which primary caregivers are grandparents. Schools were normally the sites of these emergency childcare centres, and parents could drop their children there without pre-booking and when needed. For more remote villages a shuttle service was used to take children to school and childcare. However, when schools re-opened, partially, emergency childcare hit some difficulties:

“Children go to school once a week and continue online schooling for the rest of the days, so if there are no emergency care services, working parents have to quit their jobs. Emergency care services need to continue even after school reopening.”

Phase 2: Part of the reopening process

MOE consulted with KDCA and the Central Disaster and Safety Countermeasures Headquarters to monitor the progress and adjust the reopening of schools. The following factors were considered for re-opening:

- The trend of daily cases by province;
- Control over epidemic in schools under the current medical system;
- If the general public agrees with the reopening of schools; and
- The readiness of schools, including the quarantine manual and emergency response measures.

During the planning process for reopening schools, certain grades were prioritized in their need to return to the physical learning environment. Final year students in high school returned first on 13 May, 2020, with a staggered return for all other year groups, allowing a week’s interval between the returning grades. Primary students resumed school in stages between 20 May and 1 June, with full reopening occurring by mid-June. However, local lockdowns and restrictions have been put in place when localised COVID-19 outbreaks occurred (e.g., Daegu in May and Seoul in September). Prior to reopening, MOE conducted a survey with teachers and parents on their experiences with remote learning and their opinions on when the best time would be to reopen the school. A consultation was also held with the Boards of Education of each province.

MOE consulted with medical experts and designed a health survey to be filled out by each school student at the start of each school day. The survey covered body temperature, COVID-19 symptoms, travel history of the student and the family, and whether another household member was under home quarantine. After reviewing the survey, the school instructs each student on whether they can enter the facility on that day.

Safe operations

Following national guidance for the safe operation of schools, schools put in place:

- Measures for individuals to follow, including temperature checking, hand washing and hand sanitization, wearing of masks and advice on coughing into their arms;
- Sanitation processes such as disinfecting classrooms, toilet areas and cafeterias, and ensuring school buildings were well ventilated; and
- Physical distancing measures including protection screens partitions in the cafeteria and some classrooms, desks and chairs in classrooms and cafeterias rearranged to keep maximum distance between students, and starting classes at different times.

Initially schools reduced the number of students attending class on any one day to ensure safe social distancing. In some cases, school students only attended one day a week, while other classes were split between morning and afternoon sessions, which meant increasing teachers’ workloads. Some schools adopted a hybrid in-class and online approach to lessons.

Much of the decision making about the details for school re-opening was made by the Municipal and Local Education Office, following national advice. MOE’s ‘Distance Education Support Division’ held regular meetings to check the response and preparation of the local education offices and schools, including their academic support and quarantine management. There was flexibility in the local interpretation of the rules for opening schools, depending on enrolment numbers or local increases of COVID-19 cases (community transmission daily rate of less than 50, i.e., one case per million).

Provincial and school level factors, perceptions of parents and individual student-level information determined which schools could open or needed to re-close, and which students could attend school and where necessary, on which days. A telephone survey of parents and a questionnaire for teachers was also implemented by MOE to support the reopening process. Many parents were
in a dilemma as they wanted to get their children back to school, but were fearful of their children catching the virus. Where a school has a confirmed COVID-19 case, the whole school may be shut down after consultation with regional education and health authorities.

Table 3 details the number of schools with the above-mentioned facilities to improve control and prevention of COVID-19. As can be seen from the data, compliance levels were extremely high and almost all schools had sufficient space to create a temporary monitoring room, as well as sufficient funds to purchase thermal imaging cameras, measures that less well-resourced countries in the region could not even plan for, as they struggled to ensure schools have basic water, sanitation and hygiene (WASH) facilities and thermometers. Local education authorities, in conjunction with school leaders, monitored safety protocols.

TABLE 3 | COVID-19 SAFETY MEASURES IN SCHOOLS

<table>
<thead>
<tr>
<th>SAFETY MEASURE</th>
<th>% OF SCHOOLS COMPLYING</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of schools which have installed a temporary</td>
<td>99.6%</td>
</tr>
<tr>
<td>monitoring room</td>
<td></td>
</tr>
<tr>
<td>% of schools cleaned and disinfected by</td>
<td>99.8%</td>
</tr>
<tr>
<td>specialist companies</td>
<td></td>
</tr>
<tr>
<td>% of schools which have rearranged desks to</td>
<td>99.8%</td>
</tr>
<tr>
<td>maintain social distancing</td>
<td></td>
</tr>
<tr>
<td>% of schools which have one or more</td>
<td>97.3%</td>
</tr>
<tr>
<td>thermometers in each class</td>
<td></td>
</tr>
<tr>
<td>% of schools which encourage parents to</td>
<td>99.9%</td>
</tr>
<tr>
<td>check student’s health at home</td>
<td></td>
</tr>
<tr>
<td>Number of schools which have installed a thermal</td>
<td>6,964 (35%*)</td>
</tr>
<tr>
<td>imaging camera</td>
<td></td>
</tr>
<tr>
<td>Number of thermal imaging cameras</td>
<td>7,362 (37%*)</td>
</tr>
</tbody>
</table>

* Percentage calculated based on total numbers of kindergarten, elementary, middle, high and special schools

Phase 3: With schools reopened

Schools in Republic of Korea re-opened to the country’s 10 million students in September 2020 with some limitations and safety procedures in place. However there were some local closures, e.g., in response to the third spike in November/December 2020.

Access to and participation in learning

Once schools re-opened, the principals worked with their teachers to review student progress from on-line learning and adjusted the implementation of the curriculum for the face-to-face classes, accordingly. This was decentralized to school level and required principals to be adaptable as some schools closed and re-opened again, due to changes in the number of COVID-19 cases, locally.

New skills were also required to be developed by teachers for online classroom management, creating student records and completing evaluations. The Online Class Guideline provides guidance on keeping student records (including student attendance and evaluation of student performance).

Safe operations

As mentioned earlier, as part of schools remaining open, both students and teachers were required to complete an online questionnaire on their health before attending school. The questionnaire was accessed through a hyperlink and could be completed on any digital device. If a student’s or teacher’s response to the questionnaire indicates they could have COVID-19 symptoms, they are not permitted to attend school and their attendance is logged through an automatic system. Figure 6 shows a sample of the self-diagnosis questions.
In addition to the above requirement, if any student develops a fever or cough, in line with COVID-19 symptoms, they are directed to their closest test centre to receive a test. While the student is awaiting their result, the rest of the school and class will continue as normal. In the event of a positive COVID-19 test result, the school will instruct all students and staff to return home. The relevant local health authorities will be informed of the positive test result, will track contacts, and provide guidance to parents on compliance and carry out the necessary epidemiological investigations.

During the school day, masks are compulsory for both students and staff at all times in the school building, except for lunch time (which is staggered). MOE provided a total of 14.86 million masks for students, with 18.29 million masks kept in reserve. A further measure for safe operations in schools was for all windows to remain open during school hours, and air purification systems to be turned off. These measures are to ensure sufficient natural ventilation through the buildings and limit the air-borne transmission of the virus, within enclosed spaces. These measures add to the other basic health and safety measures mentioned earlier of handwashing, disinfecting classrooms and social distancing.

Additional resources have been assigned to schools to support COVID-19 control and prevention measures in the form of utilising retired teachers and volunteers. These non-teaching volunteers are primarily responsible for supporting schools by ensuring that teachers follow the new requirements for temperature checks, and ensuring safe distances are implemented—especially in communal areas, such as cafeterias (which have staggered times to cater for classroom ‘bubbles’). Anecdotal reports suggest that it is particularly difficult for adolescents to maintain strict social distancing:

"... during the break, students walk arm-in-arm, chat without wearing masks, and fool around with each other, and teachers gave up on discipline." 

**Health, well-being and protection**

To support students with their mental health and well-being, following the disruption caused by school closures and distance learning, psychological counselling was offered in schools by the WEE Centre (WE+Education and Emotion)\(^8\), and the Mental Health Promotion Centre\(^9\). This support is primarily focussing on students who are affected by anxiety and depression as a result of the extended distance learning, and disruption caused by COVID-19. The Korean Society for Traumatic Stress Studies (KSTSS) provided guidelines on psychosocial care in infectious disease management for all educators\(^10\).

**Education system**

Education in RoK is centralized, which can help in an emergency such as the pandemic; however, decision making about the exact dates for the return to physical classroom-based learning is delegated to the provincial and school levels\(^1\), allowing autonomous decision making in how they operate with and in response to COVID-19. This also applies to how schools manage limiting congestion within school buildings, e.g., where students have one week on and one week off in the classroom. This structure allows schools and provinces to respond to the epidemiological COVID-19 situation in their local area. MOE also publishes a daily report on the Education Sector response to COVID-19 on their website. It reports information on how many schools are open, where and how many schools are closed and have returned to distance learning. It also reports on the number of students and teachers who have been diagnosed with COVID-19\(^2\).
03

Thematic deep dive
The rationale for this chapter is to highlight some of the responses and challenges mentioned in the previous chapter around remote learning, and analyse these in more detail.

### 3.1 Background to distance and online learning in the Republic of Korea

Nearly twenty years and five Master Plans have helped RoK make significant advances in respect to both ICT policy formation and e-Learning. This point is made for other countries to understand the vision, determination and patience a government needs, to achieve the level of development of ICT demanded for resilient and sustainable education systems.

The national vision stated that, as part of the First Master Plan of ICT Education (MP1), created in 1996, was “to establish an open education society, a lifelong learning society, and an updated education and welfare society based on ICT, where anyone can access education, with no limitation on time and space”.

The processes from policy planning to implementation could only be achieved by coordinating activities across ministries and institutions; in the case of RoK, MOE, KERIS, and 17 Metropolitan Provincial Offices of Education. The well-developed national ICT infrastructure aims to bridge the digital divide. Initiatives, such as the development of digital textbooks, will help to achieve this bridging through individualised learning. Individualized instruction is a method of teaching in which content, instructional technology, and pace of learning are based upon the abilities and interest of each student, and can be applied to learners wherever they may be, so it could equally be applied to students with disabilities, as well as those out of school, for any reason. This is still part of the vision in RoK, but still have some way to go if they’re to ensure equity in provision.

Although significant teacher training has been implemented, unexpected setbacks have shown the weaknesses in teacher preparation during this pandemic. Teachers may feel confident in using ICT in the classroom (developing and using PowerPoint presentations, for example), yet when it comes to creating distance learning packages, many teachers required additional support. Smart learning is still not fully understood by some teachers, in terms of their pedagogy, as they upload their traditional lessons on to YouTube:

**Smart learning is a pedagogical transformation. It does not simply replace traditional books and pencils with technology; it embraces a new pedagogical approach and understanding.**

Pedagogical transformation demands considerable ‘mind shifts’ by teachers, which takes time, as we can see, as SMART schools were introduced as far back as 2012 (prototype school in the city of Sejong), but have not yet taken root.

The initial response to the pandemic ensured access for most students, and some continuity of learning, but the emphasis now will be to ensure equity during consequent waves of the pandemic. Access cannot be equated with quality of learning, i.e., those who are not conversant with digital devices (i.e., are not digitally literate), are likely to have difficulties learning from them, at least during initial stages. Providing devices to students who are not used to using them immediately puts them at a disadvantage, compared to students who are in daily contact with such devices, which adds a socio-economic dimension to the digital divide.

A response by schools to get the youngest and most vulnerable students back in school, as long as health safeguarding is in place, would be a better priority than the focus on older students (exam classes), who may have better online skills. There is epidemiological evidence that younger children are at a lower risk of catching and transmitting the virus, so opening kindergartens and primary schools early may be a better option in the future.
However, further research is necessary, based on data from the present emergency.

Present high stakes assessment processes are not keeping up with the government’s vision. In fact rote learning, and ‘cramming’ to get through exams\(^9\), is preventing a real transformation of education in RoK, and provides resistance in teachers, students and parents, for fear of failure. If from their early years, students were assessed on their ability to understand a problem and work with others to try and solve it, creatively, RoK would be on a transformational trajectory.

It is necessary to explore the possibility to maintain some high stakes exams along with the development of 21st century skills. Denmark\(^9\), for example, is piloting a high school exit exam (Danes call it a ‘leaving exam’), where students will be able to be fully online while taking the exam. Any online resource will be at the student’s disposal during this high-stakes assessment.

At the same time, a more modular curriculum, with assessments made at the end of each module (ideally a more problem based cross-curricular module) can reduce the stress of a one-time exam, and be more in tune with the country’s vision of a more equitable, yet creative, education system. A modular curriculum could also help to link with TVET and business skill demands.

Over the last 20 years, Master Plans have included a focus on ICT, with a vision for education as the provider of new skills. This would improve the competitiveness of the national industrial sector:

“One of the most important reasons for adopting e-Learning is the idea that the educational and industrial sectors should coordinate their efforts, so that e-learning could lead to a more educated society and thus lay the foundation for national competitiveness\(^1\).”

Thus, a huge motivation for e-learning is to continue digitising society, based on commercial factors.

With the advent of COVID-19, this position seems to be shifting, with ICT being regarded more as a set of innovative tools that can expand education, and open up opportunities for unprecedented dimensions of school education. MOE has drawn together its learning from the pandemic and associated school closures\(^2\) and identified its challenge toward the future of education:

“The nationwide introduction of online classes to respond to COVID-19 is a huge challenge, and a path that we have never taken before.”

It has recognised that their online education response was only possible due to:

“... public consensus [and] a shared notion underpinned by the deep understanding and collaborative efforts of teachers, parents, students, and the general public. MOE will continue to improve our education system to brace for any future outbreak of a similar crisis by devising new education methods, and establishing disease control and prevention systems in our schools.”

This next section explores some of the challenges MOE will face as it prepares itself for the next decade of education innovation.

## Readiness for distance and online learning

In RoK, not all schools and teachers were prepared for distance learning (Table 4).

### TABLE 4 | PREPARATION LEVELS OF SCHOOLS FOR ONLINE LEARNING

<table>
<thead>
<tr>
<th>HOW PREPARED WERE SCHOOLS FOR ONLINE LEARNING?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Principals reporting the shortage or inadequacy of digital technology for instruction hinders the school’s capacity to provide quality instruction (TALIS)</td>
<td>24%</td>
</tr>
<tr>
<td>Principals reporting that insufficient internet access hinders the school’s capacity to provide quality instruction (TALIS)</td>
<td>15%</td>
</tr>
<tr>
<td>Students in schools whose principal agreed that an effective online learning support platform is available (PISA)</td>
<td>56%</td>
</tr>
<tr>
<td>Students in schools whose principal agreed that effective professional resources for teachers to learn how to use digital devices are available (PISA)</td>
<td>52%</td>
</tr>
<tr>
<td>Students in schools whose principal agreed the teachers have sufficient time to prepare lessons integrating digital devices (PISA)</td>
<td>53%</td>
</tr>
</tbody>
</table>

2018 Teaching and Learning International Survey (TALIS)  
2018 Programme for International Student Assessment (PISA)

In some ways a few of these could be relatively positive results, but if we take point 5, this means 47 per cent of the principals do not think teachers have sufficient time to prepare lessons integrating digital devices.
Reflecting on this partial ‘readiness’ for online learning, MOE responded to the four main demands of online learning\textsuperscript{103} (Table 5).

During the period in which schools were closed in RoK, KERIS developed the new website ‘School-On’, and launched it on 10 March, 2020\textsuperscript{104}. ‘School-On’ was a platform to prepare students in advance of their learning within an online learning environment, something which was a new experience for most students. There is a big difference between texting friends and solving a physics problem via a video and online task, so digital literacy will have different criteria by which to judge its effectiveness. Some students will only have a small screen on a mobile phone, while others may have access to a laptop or PC. The website allowed teachers to open online classrooms, to communicate with students and share guidance materials ready for the move to online lessons from 9 April 2020. The ‘School-On’ initiative supports both teachers and students to limit the impact of a new learning online environment. This initiative goes someway to support the unique challenge of RoK’s student and teacher population, where there is almost universal internet coverage, but a lack of skills and understanding of the software being used, which hinder education delivered through online platforms\textsuperscript{106}. Hopeful signs for the future are the initiatives to engage pre-service institutions, as MOE plans to establish 28 centres within three years for pre-teacher training in distance learning, and to address educational disparities\textsuperscript{106}.

What is missing is the recognition of the importance of early learning. It is understood that it will be difficult to discourage playing together in a kindergarten (three to five-year-olds), yet not to offer any educational stimulation through edutainment programmes at home (e.g., ‘Sesame Street’), or small local ‘bubbles’ for interactive play, is a lost opportunity. As it’s an important stage in brain development, as well as socio-emotional development, every initiative should be trialled to lay the best foundations for future learning. The lack of school readiness will have an impact on early primary learning. Even ECE teachers will not have received appropriate training to prepare them for remote teaching. Coding is already being introduced at primary level, so it is necessary for all young children to have a technological and cognitive framework to be able to encompass such new learning. In Lao PDR, electronic tablets are being used for very young children to develop pre-literate skills, while also ensuring teachers develop their skills through e-training\textsuperscript{107}.

\begin{table}[h]
\centering
\caption{Ministry of Education Response to Online Learning Readiness}
\begin{tabular}{|l|l|}
\hline
\textbf{Strategies} & \textbf{Response} \\
\hline
Technological readiness & \textbullet Online class, partial school opening  \\
 & \textbullet Lack of devices for some – PPP to provide rental devices  \\
 & \textbullet Free online access to designated websites during the pandemic  \\
 & \textbullet Students with disabilities – some videos in sign-language, some home visits  \\
 & \textbullet Peer teaching and teacher support mechanisms (note the ‘Community of 10,000 Representative Teachers and Teacher on’)  \\
\hline
Content readiness & \textbullet Adjusted curriculum  \\
 & \textbullet Curated videos  \\
 & \textbullet Developed some new learning packages  \\
 & \textbullet Managed copyright issues  \\
\hline
Pedagogical and home-based learning support readiness & \textbullet Emergency Childcare Programme - for working parents  \\
 & \textbullet Delay school opening (staggered)  \\
 & \textbullet Some online teacher training and associated, communities of practice  \\
\hline
Monitoring and evaluation readiness & \textbullet Prepare student assessment  \\
 & \textbullet Evaluate through surveys of teachers, parents and students (April and July 2020)  \\
\hline
\end{tabular}
\end{table}
Challenges facing students around distance and online learning

Students who do not have regular access to or are not used to using digital devices at home, or who lack the immediate learning support within the family naturally, find themselves disadvantaged when learning goes online. According to a member of parliament’s education committee:

“Educational polarization has become severe.”

**Socio-economic factors**: A student-learning assessment was conducted in June 2020 (mock College Scholastic Ability Test, or CSAT) for Grade 12 students, and the results indicated that those in the top (wealthiest) quintiles scored better than expected, while those in lower quintiles scored below expectations, showing that the home environment (and possible private tuition, which has also gone online) were the unique features that could not be controlled by MOE.

Many families who could afford it continued to hire tutors to support and supervise students while learning online, increasing inequity. This negative aspect of private tutoring (shadow education), which apart from putting considerable stress on many children and young people (some parents start recruiting tutors for their children at three years of age), increases inequalities during this time. The socio-economic divide often equates to a digital divide, where some parents are able to afford tutors who will guide their children through online learning, while poorer families are unlikely to be able to afford extra lessons—and may even have to leave their children unsupervised, while parents are out working. Those families with suddenly reduced employment and income, due to COVID-19, would not be able to afford private tuition to support online learning. The government is trying hard to reduce the practice of private tutoring, while also attempting to challenge the power of elitist universities that help to maintain the fierce competition in the system.

**Well-being**: Students in RoK are normally under considerable pressure by family and society, to achieve and reach the best university. This is understood to be the main way to get a “good” job. Needless to say, with the uncertainty of school attendance, reduced family income, unemployment, and the added possibility of online abuse, stresses on student mental health and well-being are key factors impacting on student learning and achievement. The effect on mental health has been noticed by local education authorities. Some, like Daegu Office of Education, introduced a manual for the psychological support of students, their families and teachers, to help deal with increased stress and anxiety. Investment in mental health support services is still low compared to the
level of the problem, as 28.2 per cent of middle and high school students were diagnosed with depression in 2019\footnote{113}, and the range of potential stressors have increased due to COVID-19 in 2020.

**Access issues:** At the beginning of school closures, students from low-income families may not have been able to access the new online classrooms due to an immediate lack of access to digital devices (approximately 4 per cent), while students with disabilities did not have access to assistive equipment in their home, which would have allowed them to actively participate in lessons.

If children were looked after by grandparents, while the parents were at work, it is less likely that they would receive the knowledgeable support necessary to set up computers and support/supervise the children while online\footnote{114}.

Early on, some students failed to access online education sites due to high traffic volumes. According to KERIS:

> "Users in each province have different connection routes to the e-Learning site, but some users in a number of regions appear to have access problems\footnote{115}."

**Support to teachers for distance and online learning**

MOE has provided guidelines for local authorities to interpret and implement. For example, the Seoul Metropolitan Office of Education used YouTube as the medium to provide training to teachers in areas such as online classroom management, production of educational videos, and introducing student evaluations using remote learning\footnote{116}.

Prior to starting online education, MOE designated pilot schools to model online learning and share best practices amongst teachers\footnote{117}. The ‘School-On’ website and the ‘Teacher On’ troubleshooting service are strong components of online intervention, where teachers are encouraged to support and train their peers. The ‘School-On’ website was created by MOE to provide teachers with information on how to use online learning platforms and tools, and to encourage sharing of online class management practice. ‘Teacher On’ is run by a teachers’ volunteer group that supports peer teachers, who may encounter any difficulties in online teaching. It provides a troubleshooting service using the Remote Call+Mobile Solution (Figure 7). This is a model that could be strengthened for a future of blended learning.

Four different types of online classes were available for teachers to choose from (Table 6)\footnote{118}. A MOE teacher survey (April 2020) showed that the most frequently used online class type was content-oriented (40.9 per cent), and a combination of two types (43.3 per cent). The most common combination was task-oriented and content-oriented, with only 7.1 per cent of classes using a combination including real-time interactive classes, which points to teachers being more comfortable with structured lessons that do not include the unpredictability of real-time exchanges. This suggests that teachers have not developed a more future-oriented mindset, and are still relying on their more traditional practices.

The same Teacher Survey also reviewed the most frequently used online learning content (Figure 8). As can be seen, the majority of teachers either developed their own content or researched and used private content such as YouTube.

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**FIGURE 7 | ‘TEACHER ON’ SUPPORT FOR TEACHER CAPACITY IN DISTANCE AND ONLINE LEARNING**

1. Access to Teacher-On Website
2. Request for Remote Support
3. 1:1 Consulting (Via Chat Room)
4. Remote Access to Devices (PC, Mobile Devices)

1. Remote Support via voice call

*Remote Call+Mobile Solution: It is a support solution service that remotely connects to the PCs and/or mobile devices of the users to resolve any technical difficulties.*
Copyright issues (necessary when teachers are trying to gather material from different sources) were addressed in the very first national plan in 2001. In this plan, legal and policy issues were reviewed and revised for Smart education to be initiated. Even though the most important issue was to remove the copyright barrier for school teachers, this was still causing problems in 2020, which will have caused delays in preparation and some frustration, leading to disaffection of teachers in the process of going online. Smart education technology calls for a new pedagogy, and the new pedagogy should not just deal with letters and numbers, but also address sounds and images, so a copyright-free environment is essential.

What was also promised was a cloud platform, giving access to a resource-enriched learning environment where both teachers and students can freely and safely upload and download open educational resources and content together. This is something that needs to be addressed.

The variation in quality of online learning is partly due to the diversity of skills and the adaptability of teachers, some of whom feel more confident delivering pre-made video clips, and others who hold live online and interactive classes with follow-up communication with students and their families. This has two important implications:

1. Teachers are motivated to engage with online classes and are making the attempt to develop and source relevant materials. This was shown during the 2018 OECD Teaching and Learning International Survey (TALIS), which showed that 90.6 per cent of RoK teachers participated in online lectures and seminars, compared to the OECD average of 35.7 per cent; and

2. If quality is to be improved, developing teachers’ skills to create engaging content and feel comfortable with real-time interactive classes is critical. As opposed to investing in the production of standardized content that was used in a small number of classes, which would generate better quality and produce more engaging lessons.
This demonstrates how a high-performing workforce can form part of an adaptable and resilient system, and respond to an emergency situation. With more skills, RoK’s teachers, if well prepared and supported, will become more resilient to changes to teaching delivery methods, and their quality will be visible more consistently.

The support system is not just about infrastructure, but needs to include human support from administrators, technicians and teacher colleagues. When teachers feel they can get necessary technical, emotional, and environmental support while they are implementing Smart learning, they are more likely to adapt and use new technology.

The biggest achievement for MOE has been the acceptance by teachers that online learning is not only possible, but is necessary for the future of education in RoK. During the last decade, MOE has been engaging the teaching force in training for more online schooling, without a great deal of success. Thus the present experience may provide the push to ‘build back better’, and convince more teachers to get upskilled, which is where MOE needs to make the investment.

Implications of distance and online learning on early childhood education

Kindergartens were the last to open and teachers were not prepared pedagogically to support children at home, remotely. The longer delay before re-opening kindergartens may have looked a safe option, but in the long-term, early learning must take centre stage as that investment provides the biggest return to society.

Young children need comprehensive nurturing care, which includes good health, adequate nutrition, early learning opportunities, responsive caregiving, and safety and security. Severe, lifelong impacts can result from deprivations during the early years if children do not have these critical inputs to ensure optimal child development.

The government has developed a comprehensive Early Childhood Education (ECE) and Care provision over the last decade, increasing enrolment as well as quality. However little priority was given to pre-primary learning when moving classes online, when kindergartens were closed.

During a pandemic, it is important that all safety measures are put in place in early learning centres, when opened, knowing that young children will want to play together and that they need stimulation such as toys and other learning aids. Contact between children has been minimized in other countries through the use of small ‘bubbles’ of children, or forming smaller groups who attend class on rotation. Children with disabilities particularly need extra support and interaction with others, which are lost when ECD centres and kindergartens are closed. Reducing the spread of infection through play can be done through the use of cleaning days to sanitise toys, or through toy-loan systems, where more disadvantaged families who are caring for young children are supported by communities with toys (toy library) to use at home for extended periods. More interactive TV programmes appropriate for three to five-year-olds are also useful at developing skills through songs and stories and art projects.

As a result of missing out on months of kindergarten and without online activities, some early learners may well be less ready for starting primary school compared to other learners.

3.2 Analysing the response

During school closures

At a national level the Government of RoK has achieved significant successes in managing the health and education systems during the pandemic, and has received international accolades for doing so. However, further research, particularly in terms of achievement and possible learning loss—— and with a focus on the most vulnerable students—— is required.

As in other countries, three groups suffered when schools were closed during the pandemic: students, teachers and parents, particularly those in low-income families, at all levels, including ECE. All three groups needed adequate preparation and training, not only for emergencies, but as part of a comprehensive package for developing a more resilient and equitable education system, and lifelong learning for all.

Addressing marginalization

Significant efforts were made to match the needs of some of the disadvantaged learners during school closure, but were often delayed (such as identification of those needing digital devices, or providing alternatives to online learning). When disadvantaged children and vulnerable young people are considered ‘after the event’, as is often
the case with more ‘traditional budgeting’, the effects on their access and participation and ultimately their learning are affected more than advantaged children. If planning and budgeting to include ‘learning for all’ are built around the most disadvantaged and vulnerable learners from the initial stage, the rest will benefit automatically (Figure 9), and shortfalls in budgets will not affect the most marginalized children.

A ‘re-imagined’ budget puts the initial priority on those out of school (to get them to enter or transition back to school), children with disabilities (CWD), disadvantaged learners—often from low socio-economic status (SES) families—and the youngest learners. This to ensure that these children have adequate support and learning resources to meet their needs. The unit cost of reaching the most marginalized children is higher than the cost of educating children already in school, attending regularly and learning, but the gains in future earnings and productivity to the nation more than compensate for this.

As the nation digitalizes society and education, a windfall tax could be levied from private internet/e-commerce providers, as they will benefit from the increased business in a more digitized society. Other models of education budget prioritising can be used, but the focus is on re-imaging education within society and devising new ways of thinking and doing.

**Improving interactions**

Those students with strong IT literacies will find the transition to online learning quite smooth, while others will be challenged and not get the best out of the online environment.

Increasing interaction with other students (perhaps with some small group sessions in protective community bubbles) and better relationships with their family, could also be protective factors. The initiatives taken by municipalities such as Daegu and Seoul and the Ministry of Gender Equality and Family in terms of psychological support should be evaluated, and then scaled up. The Seoul Metropolitan Office of Education created and distributed a ‘Stress Management and Mental Health Promotion Online Education Programme’ to student groups, but this would need to be evaluated, perhaps by the young people themselves. Even at early childhood level, children can be asked about their experiences at school or when learning at home. These types of child and young people’s surveys could provide much-needed insights about the diversity of learners and their learning environments.

Many teachers, even if they had received some ICT training, were not prepared for developing online lessons that could engage students in active learning. Some students, both primary and secondary, may have become too dependent on their teachers and will need
to learn self-reliance for their own learning by being given more opportunities during ‘non-emergency’ times to develop such learner independence. A focus on the socio-emotional learning may help to balance the much stronger emphasis on more traditional and teacher dominated approaches of content-focused learning.

Parents rely on schools to take charge of their children’s learning and will need to engage with teachers so there is a smoother transition between home and school, particularly for a future of blended learning. Where parents or guardians are not ‘digitally literate’, a system needs to be in place to provide local support groups for these. Guidance for municipalities would help to institutionalise such support groups by identifying the need and the importance of such groups. Principals and their staff may need to go the extra mile to actively engage families to improve the transition from school learning, and learning remotely.

School reopening

As online learning is not the perfect solution during school closure, a smoothing of the separation between online and face-to-face learning can support school re-opening and reduce the learning losses, which are inevitable. If schools assume that all students will have lost learning time, and some will have benefitted from online learning (including extra/private tuition) more than others, schools can then reduce curriculum content, put in place more formative assessments, and plan for remedial catch-up sessions within school time. Teachers need to understand the various e-learning experiences students have had and differentiate their lessons accordingly, which will need further training in itself. Peer-to-peer learning (using the Teacher On community, for example) is preferable to top-down training, and is more cost effective and needs-based.
04 Lessons learned
Despite considerable efforts from MOE, teachers in RoK are not yet prepared for online teaching or blended approaches to learning. They have received training for introducing more ICT into their classrooms, but have less experience and skills for creating and implementing online lessons with its associated support for learners.

One thing is certain, lessons need to be learned from this pandemic and used to create responses that are effective for all students, wherever they may live.

Despite considerable efforts from MOE, teachers in RoK are not yet prepared for online teaching or blended approaches to learning. They have received training for introducing more ICT into their classrooms, but have less experience and skills for creating and implementing online lessons with its associated support for learners.

In general, students are not prepared for online learning as some of them lack the self-resilience and motivation, as well as the support to engage with remote learning, positively. During non-emergency times, students should build more independence in their learning, and more practice in problem-solving on their own and with their peers.

Families and communities are also not yet prepared to support long periods of learning at home. During ‘non-emergencies’, students and their families could be given opportunities to practice effective online and TV learning, using a variety of digital devices, and provide direct feedback to schools and local authorities.

Disadvantaged students and their families (e.g., those receiving state benefits, children with disabilities, out-of-school students, children of migrant families) need to be identified and supported from the outset. For example, many of the interventions are for students who are in school, with less immediate concern for those out of school (before COVID-19), and more so, post COVID-19.

There is a danger that inequalities can be pronounced while embarking on increased online learning, as noted by the superintendent of Seoul Metropolitan Office of Education:128

“In online learning, there is more room for educational inequality to worsen, but at the same time, there exist opportunities to enhance personalized learning.”

The superintendent also mentioned the problems within the education system, and how plans are in place to make improvements: he explained the features of the current school system, noting its authoritarian and hierarchical paradigm based on ‘rote memorization of knowledge’. He stated that the goal is to reform the current system introducing a democratic system based on creativity, education equality, and only one education (each student is different and should be evaluated according to different criteria). He also mentioned that collaboration with parents was important129.

At present, without further training, teachers are not able to make the best use of the potential for individualised learning, which online learning can provide. To engage all learners and ‘upgrade’ the teachers, a number of elements need to be put in place, such as:

- Use of effective teaching techniques;
- Harvest and learn to use appropriate student data to tailor learning opportunities and monitor progress; and
- Knowing that all learners, particularly those with learning disabilities, can all make progress in their learning, could be a huge incentive to improve online and remote learning.
The present pandemic has again illuminated the continued inequalities in education for all, and these need to be addressed, as a matter of urgency.

A conclusive statement in the recent IDB book (Chapter 3):

“Schools have not yet ‘owned’ the shift toward education with technology. For example, the concept of digital textbooks emerged in Master Plan 3 (MP3), was piloted in schools as part of SMART education under MP4, and was widely promoted under MP5. At the beginning of MP6, however, digital books had still not been fully accepted by the school community, or fully incorporated into elementary schools. Infrastructure provided 20 years ago has become obsolete and cannot support the new module of individual learning. And even with the update of the curriculum, the assessment method remains largely unchanged, thereby perpetuating the practices of rote memorization by students. Introduction of coding education in the curriculum has led to mushrooming of coding classes in the private sector, which burdens households and widens the learning gap between students from different backgrounds.”

Other countries can learn from RoK’s experience, that even after 20 years of planning and implementation, a fully integrated education ICT programme, leading to individualized learning and removing inequalities, can take decades. However, it is possible to ‘leapfrog’ stages by taking effective strategies from countries such as Uruguay, Estonia and Finland. COVID-19 presents countries with this opportunity to re-imagine education in the medium-term, and build back better.

4.1 Plans to build back better

“We prepared for remote learning because of the COVID-19 crisis, but now it will be a permanent part of the educational process,” stated a representative from RoK Education Ministry Division for Teacher Education.

MOE has earmarked more than $110 million for developing online textbooks and remodelling old schools to make them more digital friendly over the next five years. The government plans to install Wi-Fi in 80 per cent of schools that don’t have internet access, replace 200,000 old computers, and provide 240,000 tablet PCs to schools shifting to online textbooks, starting in 2020. Improved infrastructure will be necessary but teacher training for the ‘new normal’ will be the biggest, and most essential investment.

The Superintendent of Seoul Metropolitan Office of Education, in a recent interview, stated:

“Despite the many drawbacks of online learning, some positive changes are also noticeable. Some students who have been shy in physical classrooms become more active, online. Teachers can give each student different feedback customized for their needs.”

It is good that he referred to formative assessment as an important process. Individualised learning will certainly be the big advantage of online learning. The superintendent also stated:

“So, the future of education is blended learning. Remote learning, which was triggered by COVID-19, will accelerate a transition from in-person, classes-focused education to blended learning-focused education."
25 per cent felt the need for a platform for creating and sharing materials that teachers can reconstruct;
24 per cent felt the need for providing content suitable for teaching and learning materials (content should include appropriate tasks for online learning – not the same as face-to-face);
15 per cent felt the need for improving the copyright system for content production and use of materials;
79 per cent of teachers recognized that the learning gap between students was widening;
65 per cent felt that the gap occurred due to the difference in student’s self-directed learning ability (learners need to practice during class time where teachers facilitate rather than dictate); and
37 per cent felt that to help close the learning gap, offline supplementary guidance/materials for remote learning should be provided.

It was found that there is an urgent need to support customized learning, the holy grail in education, where technology addresses all inequalities by providing appropriate and customized learning opportunities for all -- those out of school, those with disabilities, those living below the poverty line, those with a different mother tongue, and those living in remote locations.

There has been a shift in the amount of positive feedback about online learning, partly due to the initial difficulties encountered while reopening schools and implementing a safe environment for face-to-face education. A recent survey showed that approximately 55 per cent of students who experienced face-to-face schooling after online schooling expressed a preference for online schooling (which was a different response by students when first starting online learning in April 2020).

Although I ask questions, students don’t answer that much. Since we’re all wearing masks, students sitting far from the teacher can’t hear the teacher’s voice well, and the teachers are affected because they have to speak loudly. I’m not sure whether face-to-face classes are offering higher-quality learning experiences to students than online classes. (An interview with an elementary school teacher in a newspaper article; Kim, 2020)

This shows that pre-COVID-19, education was focused on competition between students; post-COVID-19, it should ensure active participation in learning by all learners. This could be addressed by turning the learning process into a more cooperative one, with groups of students engaging more on joint problem solving (online and face-to-face) using real cross-curricular problems. A four-day week with the fifth being more open to collaborative problem solving with minimal supervision, could free up some staff for regular training on a rotational basis, particularly in secondary schools, while testing out online learning in a controlled environment.

This may prove a turning point for the approach taken to learning. It may well be that a blended learning method and one that is more focused on 21st-century skills and building resilience is inevitable and would need to be agreed to by the whole population. Within this, concerns about quality and increasing inequalities will need to be addressed.
It would be wise to engage students while planning the next stage of education reformation, as they will be the ones who can provide the ‘inside story’ of what the system needs from the demand side. Online surveys using SMS could be used, or student representatives from local student ‘bubbles’ could also provide feedback. At present, students may be too dependent on their teachers for direction of their own learning. Using 21st-century skill development, students can learn to be more creative and collaborative problem solvers. Learning loss is likely to affect some learners for some time, and without fully engaging students and their families, teachers will not be able to manage an effective blended learning future.

RoK has gone a long way to ensure all the structural and systemic elements are in place, e.g., digital devices for all, internet infrastructure improved, websites constructed, teacher ICT training increased, curriculum adjusted and psychological services in place. Yet these alone do not ensure effective learning.

What is challenging for teachers is providing stimulating remote tasks for students, to engage them fully and provide the 21st-century skill development that is necessary. It is good that decentralization has provided the environment for local authorities to make decisions, based on the local context, but what is necessary is a national evidence-based framework and a comprehensive online platform that ensures the quality of remote learning, and the possibility for small local safe ‘bubbles’ for students to work together, as isolation has provided a new stressor on students’ mental health.

Younger children have not had the attention they deserve in the rush to provide remote learning, yet they are the key to the future of the nation. For this reason, kindergartens and other early learning centres are particularly important as centres of learning and should receive the same attention as exam-grade classes for immediate and safe opening. The individual and societal benefits of investing in ECE are significant. It can prevent the achievement gap, improve health outcomes and boost earnings (and at the same time increase tax revenues). The rate of return for investments in quality early childhood development for disadvantaged children is 7 per cent to 10 per cent per annum, through better outcomes in education, health, sociability and economic productivity. The substantial long-lasting effects of early-years education on economic and social outcomes are particularly high for children from disadvantaged backgrounds, whose home environments may not provide them with the foundation skills necessary to prosper at later educational stages. Therefore, investing as early as possible in high-quality education for all, and supporting students from disadvantaged backgrounds, is a cost-beneficial strategy— it pays off. Loss of learning estimates will be higher for younger children than secondary students, as their foundational learning has already been achieved.

‘Building back better’ will need to take on a more child-centred and life cycle approach. Transitions should aim to be seamless (e.g., between ECE and Primary). Preparation for work and active citizenship, as well as the ultimate goal of lifelong learning, can be moved up the priority list when building back equal and better. Effective and disaggregated data collection and analysis can provide the necessary targeted support to those who need it, as well as providing the analysis for future policy development and legal frameworks.

RoK has already shown the world it can put in place the necessary legal framework and government strategies to start to implement the vision of an information-based nation powered by creativity and innovation. However, the competitive nature of education in RoK limits the opportunities for students to engage in creative and collaborative problem solving. A change in attitudes and practice will demand intense teacher education and a broadening of student agency within education.

### 4.2 Recommendations for increasing resilience to future shocks

Remote learning, during the present pandemic, has provided the opportunities for exploring what might be possible when learners cannot get to school, but it has also shown the weaknesses leading to increased inequalities and concern about student well-being. Just as in RoK industry, the hardware of ICT is in place, but now what is needed is the software development, which may be more challenging.

#### Recommendation 1: Building a more sustainable system of which blended learning is further promoted

“The full-scale implementation of the online classes is an important step forward to the future of education as it presents an unprecedented form of school education, and opens up opportunities for unprecedented forms of school education.”
1. National evaluation. In six months’ time when most data on attendance, learning achievement and student health and well-being have been collected, implement a national evaluation of what really happened during the pandemic, with a particular focus on equity and well-being. This assessment, with the follow-up debate and dialogue, both nationally and locally, should help to construct a five-year plan to build a more resilient and equitable education system, and eventually, society. Based on the results of the evaluation, it should be possible to make blended learning a more natural approach in education the ‘new normal’, but without exclusionary dependence on online access (i.e., similar content and tasks on TV, and paper-based media, available to all). This evaluation should also try to assess what other skills acquisition mechanisms were disrupted, and not compensated for using distance learning (e.g., socio-emotional learning). Which skills are acquired through face-to-face schooling, which are difficult to impact through online learning? What other school-run programmes, like sex education, creative extra-curricular activities, art and music and sports will students miss out on?

2. Following the evaluation, a more consolidated plan would include:

   » Planning and Budgeting. Equity needs to be planned and budgeted for from the beginning, and not only access, but also about all the support that needs to go around learning, which will be more for disadvantaged and vulnerable groups that is also gender-sensitive and responsive. Consider all areas of the country (including islands) and all abilities and socio-economic groups as needing the same learning opportunities as more advantaged learners, and make funding strategies responsive to student needs, in the knowledge that support for students living with disadvantage may incur higher costs.

   » It is recommended to design a costed simulation study of sub-sector allocation needs from now until 2030, to project financial needs while factoring in demographic trends. Some questions may include: what would be the yearly allocation needed to attain 100 per cent enrolment in quality provision, one year before start of primary? What would be the quality-focused investments necessary to raise the standards in pre-primary? How to ensure a smooth transition from pre-primary to primary?

   » Devise a comprehensive plan for opening kindergartens and other early childhood centres quickly during emergencies, as these are critical years and ones where online learning may be less effective (unless learning together with other children in a protective community 'bubble'). Interaction and stimulation are essential for early learning. Health and safety messaging can be particularly helpful here as the messaging can support families as well. Monitoring costs may need to be increased to ensure all ECE opportunities are of good quality.
Recommendation 2: Teacher training and support

Plan comprehensive training for all teachers and develop new materials to support blended learning as a normal way of working, not just for emergency application, as well as how to develop and run distance learning in times of crisis. This will apply to pre-service as well as in-service teacher education (see example from Busan as a practical approach to blended learning in a low-income area143).

Strengthen the existing national mentoring system for schools to ensure that teachers benefit from learning from their colleagues. The Teacher On ‘10,000 community’ is a good starting point, as this already covers all 10,000 schools. A mentoring system will benefit both the mentors as well as mentees. Mentoring with a focus on ICT skills, online preparation and socio-emotional learning could be their focus for the first year, at least.

Recommendation 3: School management and parental/community engagement

Support school leaders to be better prepared for a range of scenarios so that they have the skills and the trust of the local community, to manage emergencies. Much pressure is put on school leaders during emergencies such as the present pandemic, so principals’ own ICT skills may need to be upgraded, not only to support teachers’ learning, but to put in place school systems that will provide early identification of student failure or learning loss/delay. They will also be putting in place safeguarding systems while students are working online, in relation to protection against online abuse and cyberbullying, which can help lead to improved mental health. Parent and community engagement and communication will also be high on the training agenda.

Recommendation 4: Assessment of learning and curriculum adaptation

There is a need to plan for convergence of remote learning with the adjusted formal curriculum and assessment process. Master plans have provided a framework for e-learning144, so now is the time to redefine how this can be applied given the constraints brought to light through this emergency. To transform the education system to be truly future-ready, it will be necessary to promote reforms in learning assessment, with a focus on student agency, curriculum adaptation, reduced competition, with more emphasis on formative assessment. Reduction of percentage of total marks allocated for a final exam can start this reform process.

Recommendation 5: Data, monitoring and evaluation

Targeted support for learners at risk demands disaggregated and comprehensive data if it is to be cost effective, so improved monitoring, with a focus on learning and learning loss, will pay dividends.

Recommendation 6: Coordination and partnerships (including inter-ministerial and public private partnerships)

Further develop and formalise PPP to support the response, such as sourcing student digital devices, video clips and associated paper-based materials to form comprehensive learning packages (tested by students). Take remote learning as a comprehensive package, not singling out certain parts such as internet access, to focus more on the quality of learning and reduction of learning loss, not just access. Ensure good coordination between Ministry of Health and Welfare (for day-care centres for kids up to five years of age), and MOE (for kindergartens for kids between three and five years of age), so as to have fully joined-up, holistic and child-centred policies and budgets for all children up to five years of age. Parents need clear and consistent messages about health, safety and education. Parents also need to know they can work while their children are learning and being cared for adequately.
Recommendation 7: Project day

At present, teachers may not know what students can do in a collaborative group on their own, and there is never enough time for local staff professional development. A consideration could be made for a pilot trial of an innovative four-day week. For four days the normal curriculum is implemented with the students, with the fifth being more open to collaborative problem-solving with minimal supervision. This is done in school, so that evaluation can be done on the spot with instant formative feedback. This fifth collaborative problem-solving project day could free-up some staff for regular training on a rotational basis. Project Based Learning aims to develop 21st-century skills, in particular critical thinking, problem solving, and collaboration. The International Baccalaureate programme, for example, encourages students to be inquirers, thinkers, communicators, open-minded, risk-takers and reflective as they implement real life projects that can fully engage students, while at the same time being assessed.

Recommendation 8: Address mental health, well-being and protection issues

1. **Protection.** Gain the agreement from internet providers to rigorously increase student awareness of the dangers of online communication (e.g., use child-to-child health techniques). Ensure that children’s and young people’s helplines are sufficiently funded to reach all. Increase the reach of awareness of the helplines using social media, TV and radio. Teachers well-being and online protection would need to be addressed, while designing a more resilient education system. Laws that protect children and young people while online need to be strengthened.

2. **Student agency.** Improve active engagement of students in planning and implementing blended learning at school, and in the community. Ensure fora are available for children and young people to express themselves and participate in planning for their future. Having more control and responsibility can offset some of the risks of online learning while improving mental health.

3. **Community.** Build community awareness so that all children and young people get the support for their learning and well-being. Single-parent families may be particularly vulnerable where children need to be supervised and supported at home, as will children with disabilities. Whole community involvement in planning and support is a more flexible approach and more resilient as the ownership by the community ensures all students, in or out of school, will be accommodated. Mental health issues, where normally kept ‘hidden’, will need to be expressed more openly and supported with more investment in support services, particularly for adolescents.

4.3 Conclusion

The vision for the digitization of education in RoK is impressive, as is the infrastructure that is being built across the country. What is missing is ensuring that all education staff, particularly teachers, learners and their families, all believe in that vision, and have the resources and support to make it a reality, at the local level. Pedagogy and assessment processes still, in many ways, have their strong foothold in the past (notice the priority given to exam Grades 9 and 12). Digital literacy and knowledge of ‘new’ approaches to teaching and learning have to be developed at the level of the community and family, as more emphasis will be necessary on ways to support learners when learning remotely. EMIS (Educational Management Information System) and other data-gathering systems are highly developed in RoK, and responses based on nuanced analysis of this data could be better channelled to ensure all learners can benefit from the new model of learning.

In response to the pandemic, government acted quickly, and the success of getting the nation’s students online was mainly down to having a well-established IT infrastructure and a national curriculum. However, it did not preclude inequalities, partly due to geography and family socio-economic differences.

- Initial move to online learning benefitted many by continuation of education, but left some learners without the hardware and support to learn remotely;
- Teachers were not prepared, practically, for the reality of online teaching, even though they may have received training on using ICT in the classroom;
- Parents, given the stress of reduced income and in some cases unemployment, were not prepared or knowledgeable about the support necessary for learning at home;
- School managers and local education officers had to be flexible in their planning due to the rapidly changing number of local COVID-19 cases under their jurisdiction;
- Increased stress on learners, parents and teachers will have an unknown long-term impact on mental health; and
• Lack of interaction (learner/teacher, parent/teacher, learner/learner) increased isolation and reduced the power of online learning, while increasing stress. Cyberbullying and forms of online sexual abuse increased.

Government could use this present emergency to build a more comprehensive model of remote learning, where all learners can equally benefit, by understanding what really happened during the pandemic, with a particular focus on learner equity and well-being.

• More comprehensive multi-media learning packages would be ideal: hard copy/TV/audio with links to online resources. Online materials need to be easily viewed on a mobile phone, for those learners unable to access a computer/tablet at home;

• Ensuring all learners can continue learning, while schools remain closed, takes much creative planning based on disaggregated data. Learners who are often denied quality education include children from low-income families, children with disabilities, children of migrant, refugee and multicultural families, island dwellers and those already out of school, as well as some very young children.

• Learners can develop their own self-regulated learning skills and motivation if developed and practiced at school. A focus on the socio-emotional learning may help to balance the much stronger emphasis on more traditional and teacher-dominated approaches of content-focused learning. Teachers and head teachers need training, building on the peer-to-peer training already established, and increasing mentoring support.

• Budgeting may have to be increased and targeted at the more marginalized and vulnerable learners, as well as equity and quality of ECE.

• Build community awareness so that all children and young people get the contextualized support for their learning and well-being. The engagement of communities and families in local decision making could provide better support for learners, while learning remotely. This support is particularly important for younger learners, learners living with disabilities and other marginalized and vulnerable learners.

• Systemic reform of the assessment system, which links with curriculum and pedagogical reform, will improve the resilience of the system. Present high-stakes assessment processes are not keeping up with the government’s vision, and the rote learning and ‘cramming’ to get through exams is preventing a real transformation of education in RoK, and provides resistance in teachers, students and parents for fear of failure.

The lesson here is to celebrate the potential gains of remote learning while being reminded that everyone should benefit from this new era of blended learning, and to be aware of potential inequalities during the process. Teachers have had some training in ICT, but before this crisis, some have not gained a true belief that this is the future for formal learning.

MOE can continue to leverage the teachers who are true believers and influencers, to train their peers, based on their practical experience and innovations (within local and national communities of practice). While children and young people increase their time accessing the internet, laws that protect them while online need to be strengthened and vigorously enforced. The very youngest children need to learn digital literacy, so that they can control and protect themselves while learning online.

If remote learning can build on past successes and improve, resulting in a more ‘level playing field’ for all learners, then RoK will have learned much from this emergency, and left it more resilient to counter future shocks. Budgets and legal frameworks need to be revised in light of the need for increased investments now, to reap the benefits of a digitized education transformation, and become a world leader in the near future.

“In online learning, there is more room for educational inequality to worsen, but at the same time, there exists opportunities to enhance personalised learning.”
Annex: List of stakeholders interviewed and questions

Government Stakeholders

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<th>NAME</th>
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<tbody>
<tr>
<td>Ms. Kyeongsuk Chang</td>
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<tr>
<td>Ms. Maria Chang</td>
<td>Korean Educational Development Institute (KEDI)</td>
<td>Office of Education Indicators Research</td>
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Questions asked:

* What measures were implemented to assess which students are accessing different types of remote learning (online, TV, printed etc.)?
* What feedback mechanisms are in place in the monitoring systems to support students’ access to remote learning, if they are not already doing so?
* How was the effectiveness of remote learning assessed during school closures?
* What measures were in place during school closures to identify how teachers were coping with school closures and remote learning?
* Is there monitoring in place that enables schools and the Ministry of Education to target children at particular disadvantage and/or risk during school closures?
* What were the main trends of the data from the questionnaire for teachers and telephone survey of parents on school reopening, and how was this used for policy decisions on school reopening?
* What measures are being put in place in anticipation for any new outbreak of COVID-19?
Endnotes


13. Ibid.


23. Ibid.


142 Quoted in Responding to COVID-19—On-line classes in Korea, MOE, June 2020.


145 PBLWorks, ‘PBL Brings Authenticity to International Baccalaureate’. https://my.pblisharesประเภทfigure/blog/pbl_brings_authenticity_to_international_baccalaureate


Republic of Korea
Case Study

Situation Analysis on the Effects of and Responses to COVID-19 on the Education Sector in Asia

This report reviews the impacts of and responses to COVID-19 on education in the Republic of Korea, provides reflections on lessons learned so far in the Republic of Korea’s COVID-19 response, and analyzes capacity gaps for recovery. It explores successful elements of the Government response, issues and challenges faced, and strategies adopted to continue students’ learning during school closure. It looks to the future, in building back better and increasing the resilience of the education system to future shocks.

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