

Chapter 4

Regional Overview of Lessons from the Asia–Pacific Regions



Indrajit Pal , Anushree Pal, Kullanan Sukwanchai, and Takashi Oda

Abstract COVID-19 pandemic has affected higher education to a great extent. Educational institutes have either closed for few months or changed their session time worldwide due to the outbreak of COVID-19. The chapter explores different instructional strategies adapted in the education institutes in Asia–Pacific region. When traditional and interactive teaching and learning in physical classrooms has been hindered and restricted, it becomes a big change of both teachers and students to adapt and sustain their eagerness of learning, passion of teaching, prolonged social relationship, and confidence of unseen future. So, as long as education is still a hope for better world, maintaining its continuity through new teaching and learning methodologies adaptation is a must for developing countries. As education faced a major transformation from physical classroom teaching to virtual online learning platforms, it brought with it various challenges for both the students and teachers. Adapting to this entirely new mode of learning requires time, training, and adequate digital support. With the outbreak of COVID-19, this educational transformation had to take place very quickly. This study will explore the different methods/strategies that the educational institute followed for the quick adaptation to this new era of digital education. The study will focus on the teaching and learning methods adapted by the various educational institutions through online and hybrid systems. The study formulated different notions for online education in Asia–pacific regions.

Keywords Covid 19 · Education sector · Impact · Resilience · Student mobility

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4.1 Introduction: Impact of COVID-19 and Its Containment Measures on Education Sectors in Asia–Pacific Regions

On 31 December 2019, the World Health Organization (WHO) was informed of cases of pneumonia in the city Wuhan in China. It was later identified that the novel coronavirus (later named COVID-19) was the cause. Owing to the high transmission rate of infection of the virus outbreak, strict restriction measures and closure of different sectors including educational institutions was imposed by the Government of China, to control the outbreak. 13 January 2020, the first case of COVID-19 was report in Thailand. This was the first case of COVID-19 outside China (WHO 2020). By the end of January 2020, the strain of virus had been reported in 18 countries outside China. Between 31 December 2019 and 14 February 2020, COVID-19 cases were reported from 25 countries outside China (PAHO 2020). Owing to the alarming levels of spread and severity, WHO made the assessment that COVID-19 be characterized as a pandemic (WHO 2020).

The COVID-19 pandemic has adversely impacted all sectors of life with economic and education sectors being hit harder. In this chapter, we will be focusing on the unprecedented crisis caused by this pandemic in the education sectors. To mitigate the impact of the pandemic and control the spread of the virus, suspension of all face-to-face teaching learning activities in educational institutes at all levels was the only way out. More than 190 countries had ordered for such closures to cope up with the COVID crisis period. The United Nations Educational, Scientific, and Cultural Organization (UNESCO) data shows that, by mid-May 2020, more than 1.2 billion students worldwide from all levels of education had stopped having face-to-face classes (ECLAC-UNESCO 2020).

The Fig. 4.1 shows the impact of COVID-19 on different areas of education.

4.1.1 Closures of Academic Institutions

Education disruption by COVID-19 came into sharp focus when millions of students were compelled to pursue studies online, with closure of campuses and institutions at all levels. As of 8 April 2020, in 175 countries globally, higher education institutions remain closed. Significant disruption of studies due to COVID-19 was observed in over 220 million post-secondary students which are almost 13% of the total number of students affected globally (ADB Report 2021). This closures of institute campuses had a snowball effect in the case of higher education institutions, jeopardizing foreign student intake in the new academic session, research, and field study being postponed, adequate research funding and jobs. International students were affected adversely, with many compelled to return to their home countries, having no clarity on when the academic year will resume. In the present scenario, the enrollment of new students into universities may pose a critical challenge. Recent reports of UNESCO highlights

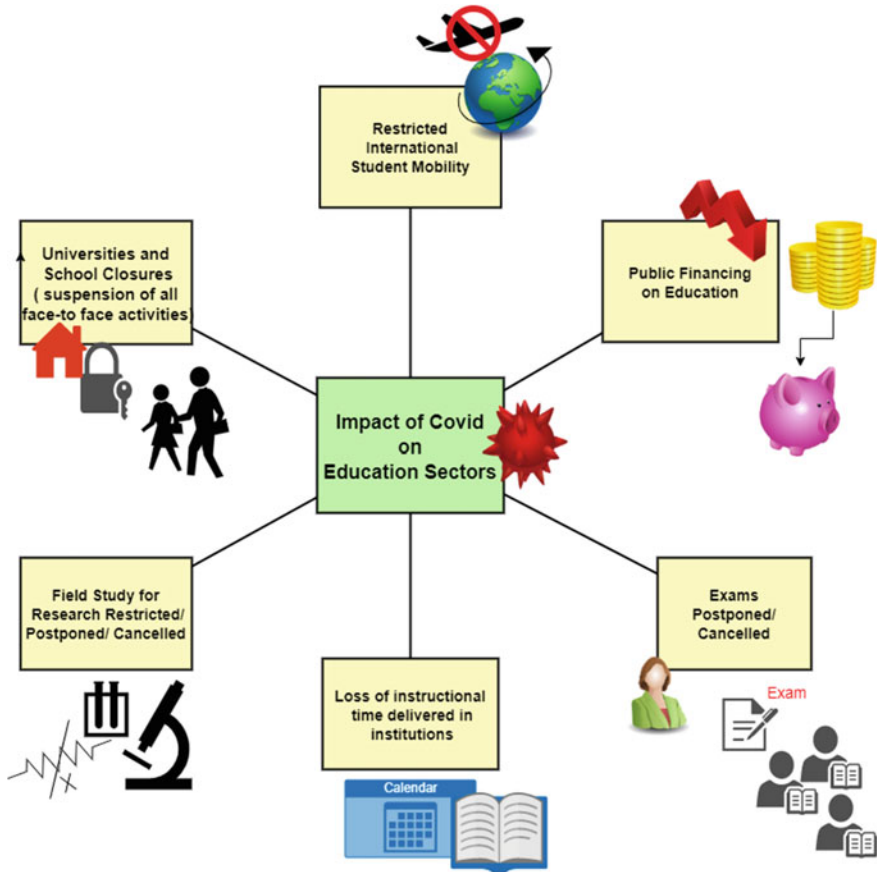


Fig. 4.1 Impact of COVID-19 on Education (authors)

that COVID-19 may adversely affect the student enrollment in the higher education (ADB Report 2021).

The responsibility to create workforce required for the economic activities and strengthening potential competitiveness of countries lies on the shoulder of the HEIs. Efficient tertiary graduates help to boost the knowledge-based economic growth and innovation. Tertiary education also prepares teachers and trainers to supports school education and TVET. Human resources for businesses sectors also rely on graduates produced by higher education. Therefore, disruption in higher education may pose serious threats to the economic growth of a country. Thus, effective strategies to sustain and strengthen higher education should be included in recovery efforts from COVID-19.

4.1.2 Student Mobility

The pandemic has also caused hindrance in student mobility and disrupted international cooperation programs. HEIs in developed countries rely on foreign student inflows significantly and are now facing crisis as these students have returned or are returning home due to COVID-19, with weak sentiments for overseas education in the coming years (ADB Report 2021).

The Institute of International Education conducted a survey and anticipated that, about 90% of US colleges and universities may see a decrease in international student enrollment, in the academic year 2020/21 (Martel 2020). A recent study conducted in April 2020 by the British Council shows that about 39% of Chinese students, as the largest source of international students in the UK, may cancel their study plans (Durnin 2020). Similarly, the Australian HEIs may see a decrease of around 150,000 Chinese students' enrollments in the coming school year (Mercado 2020).

Significant decrease in the international student mobility may take place during the COVID-19 pandemic, as students and families prioritize health and safety. Moreover the present travel restrictions and campus closures also add on to the drop in international student mobility rate. Compared to the traditional pull–push factors for international student mobility, the COVID-19 pandemic has re-ordered the factors that students consider when studying abroad. As health and safety being the primary concerns during the pandemic, the students from Mainland China and Hong Kong are considering East Asian countries and regions like Japan, Taiwan, and Hong Kong (for Mainland students) as their first choice of study destination due to the better management of the pandemic and post-pandemic crisis (Xiong et al. 2020).

4.1.3 Public Financing on Education

The COVID-19 pandemic crisis may have a long-term impact on the public spending on education as funds may be diverted to health sectors (OECD 2020) or downturns in the economic sectors may lead to readjust budgets to deal with the global economic crisis. A recent World Bank report has shown that a decline in the education budget was observed after the onset of the COVID-19 pandemic, in 65% of low- and lower middle-income countries as compared to only 33% high- and upper middle-income countries (GEMR/World Bank 2021).

The World Bank data shows that the planned hikes in 2020 investments in the education sectors are expected to be suspended in low- and middle-income countries, during the pandemic. The forecasts of the estimated public education budget allocation made prior to the pandemic situation showed, a growth in real terms in all regions and income groups (Table 4.1). However, baseline forecasts that take into account the likely impact of the pandemic estimate that spending will increase more slowly than in the pre-COVID-19 forecasts for low- and middle-income countries. If governments reprioritize their budgets and reduce the share allocated to education,

Table 4.1 Slowdown in Public Education Spending. Reprinted from World Bank Group Education; The Impact of the COVID-19 Pandemic on Education Financing; May 2020 Real growth in education spending per capita (%)

	2020 pre-COVID	2020 baseline	2020 downside	2021
High-income countries	1.3	5.4	−5.1	−2.6
Upper middle-income countries	1.9	1.8	−8.3	0.4
Lower middle-income countries	2.5	1.8	−8.4	0.8
Low-income countries	14.0	11.1	0.0	2.5
East Asia and Pacific	1.8	5.0	−5.5	0.3
Europe and Central Asia	2.0	4.3	−6.1	−1.7
LACAB	3.6	3.1	−7.2	1.2
MENA	1.9	3.8	−6.6	−2.4
South Asia	7.2	4.0	−6.4	5.3
Sub-Saharan Africa	7.7	6.5	−4.2	0.0
All countries	3.6	4.8	−5.7	−0.5

there is likely to be a downside scenario in which per capita education spending declines in almost all country income groups and regions. For example, per capita education spending in East Asia and Pacific would fall by 5.5% (World Bank Group Education 2020).

4.1.4 Impact on Student Exam

The UNESCO working document, published on 11 April 2020 on Education Sector, shows that majority of the countries worldwide decided to cancel or postpone exams. However, some countries choose to maintain the end-of-year exams, with certain measures to ensure the safety and health of students and teachers in place. Figure 4.2 shows a comprehensive summary of the Asia–Pacific Countries’ stake on examination during the COVID-19 crisis period.

4.1.5 Impact on Research and Field Study

The pandemic has posed an undermining effect on the research field of higher education system, and it is anticipated that this effect will bring unprecedented and long-term implications on the research community. The research excellence of higher education institutions stands on the multidimensional and interacting pillars like (1) skilled workforce and networks, (2) necessary resources including research funding and infrastructure, and (3) multidisciplinary research culture and collaborations. Each

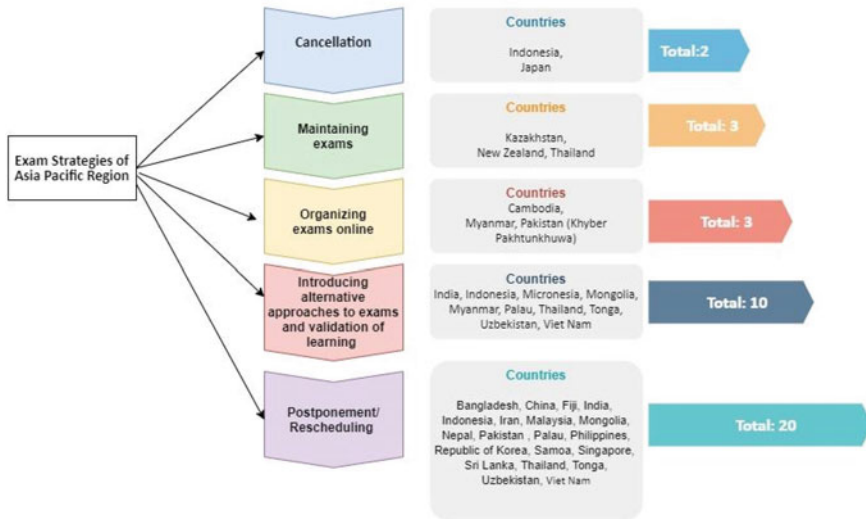


Fig. 4.2 Exam strategies of Asia–Pacific region (Modified from UNESCO working document, published on 11 April 2020 on Education Sector [Chang et al. 2020; UNESCO])

of these pillars is facing threats from the impacts of the ongoing pandemic. The research workforce is contending with finding alternative online learning resources for teaching, decreased access to laboratory space and procuring research equipment, recruiting research participants, and pausing/permanently canceled research trials/clinical trials (The Lancet 2020). Research funding is also imperiled by the economic downturns faced by the countries worldwide. Therefore, it seems that the education and training of the next generation scientists are now hanging in a balance where Universities are grappling to provide quality online education prioritizing health safety and social distancing (Fig. 4.3).

Much of scientific research work involves wet laboratory work, making it quite challenging to continue the research remotely. In comparison, dry laboratory-based computational research can be easily performed remotely in the work from home mode (Rohrig et al. 2009; Omary and Hassan 2020). A survey conducted in April 2020 by J.O. Korbelt and O. Stegle showed that, 25% of life scientists had reported lost work as there was no access to laboratory due to the closure of research institutions and universities, with majority of these researches being based on wet lab (73%) as opposed to dry lab (31%) researchers. Additionally, only 10% of wet lab researchers have reported “80% productivity,” in comparison with 29% of dry lab researchers (Korbelt and Stegle 2020). Another survey conducted by Research Australia in May 2020, highlighted that 50% of the participants have reported inability to perform remote research. This was a major issue during the pandemic. It was also highlighted that research outcomes among basic science researchers were more likely to be affected after the year 2020, in comparison with clinical researchers (Peeters et al. 2020).

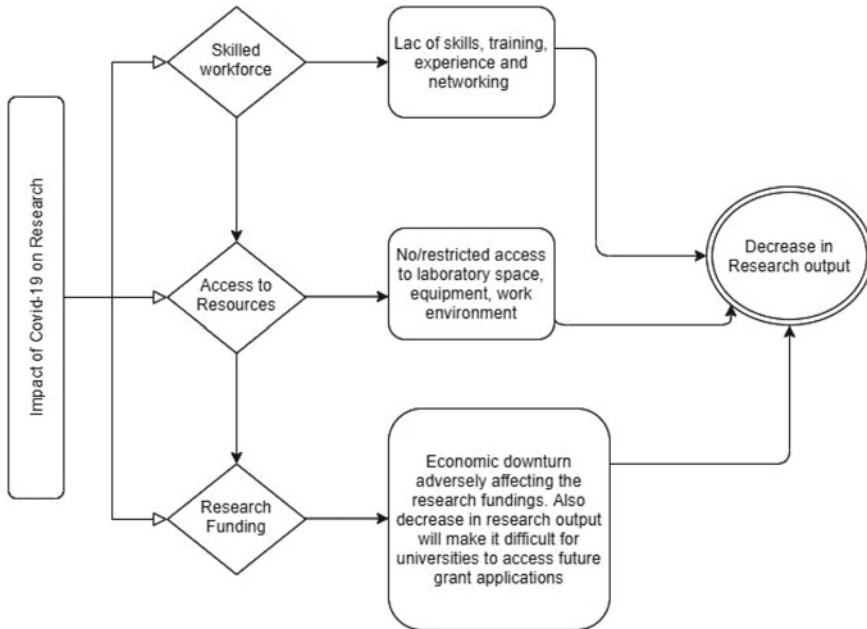


Fig. 4.3 Impact of COVID on HEIs research works

The COVID-19 crisis has also impacted scientific research that involves laboratory animals. Concern has been raised on shortage of laboratory staff due to sickness and quarantine, disruptions of the supply chain of food, veterinary drugs and the care of laboratory animals (Grimm 2020). Over a thousand mice and/or rats were similarly culled at The Max Delbrück Center for Molecular Medicine in Germany, and hundreds of transgenic fruit flies were discarded at Tsinghua University in China (Johri 2020, 24; Madhusoodanan 2020).

4.2 New Teaching and Learning Methodologies Adapted by Different Countries at the Recovery Stage of Education Disruption

As a measure to control the spread of COVID-19, educational institutions at all levels including HEIs were instructed by the government to suspend all face-to-face activities. This compelled the institutions to undergo a large-scale transition from the traditional in-person learning mode to online/digital/ distant learning mode. Some of the new teaching and learning methodologies that were introduced by the Higher Education Institutions to continue the learning process during this institute closure period were: (1) introducing massive open online courses (MOOCs) that offered free

courseware to students anytime, anywhere. (2) Foundational courses in the tertiary levels made accessible to students in the form of public good. (3) Usage of online resources by the University portals for mainstream subjects, etc. This shift of higher education system to a complete online platform of instructions brought many challenges; but it also paved the ways to innovative initiatives and strategies that are laying the foundation of the “new normal” education system.

Taylor’s University of Malaysia provided virtual sites for each of its courses to allow online students’ engagement such as assessments, assignments, peer support, and communication channels with peers and lecturers. Progress-tracking bars and earning digital badges kept students engaged in learning. A variety of lecture recordings and other learning materials were made available for students by a Lecture Capture System (ReWIND). Live streaming and Light Board Video Technology to record lectures were used for large-scale courses (The Star: News 2020).

Some of the universities in China effectively moved a large number of courses to the online platform within a very short lead time, for example, Zhejiang University (ZJU) has moved more than 5,000 courses to the online platform within two weeks. Creating a smart campus helped the university to readily transform from classroom-based teaching to online platform. The Zhejiang University initiated a project named “ZJU Online” since 2017 to focus aggressively on transforming administrative services, education, academic resources, information bulletins, and personal profiles online. Build smart classrooms, equipped with audio recognition and interpreting technologies enabled Zhejiang University lecturers to record video courses or live stream their classes during COVID-19 (World Education Forum 2020).

In Armenia, the national government instructed education institutions to ensure continuity of studies through remote delivery of education during the COVID-19 crisis. A new educational TV channel called Hybrid Edu had been introduced combining online, remote, distance, and digital learning modes through. The Hybrid Edu channel uses Zoom, Moodle, Blackboard, Google Hangouts, and WhatsApp, including integrating materials from massive open online courses via Coursera (Gharibyan 2020).

4.3 A Comparative Study of Traditional and New Teaching and Learning Methodologies: Advantages and Disadvantages

COVID-19 has opened ways of various alternative teaching and learning methodologies to cope up with the crisis in the education sector. Assessing the advantages and disadvantages of these methodologies critically and comparing it with the traditional in-person teaching learning method will help us understand the future pathway of education system (Table 4.2).

Table 4.2 A Comparative overview of traditional and new teaching and learning methodologies

	In-person teaching learning method	Online teaching learning method
Instruction/lecture	Real-time face-to-face teaching and learning in Universities	Virtual teaching and learning through various online platforms like Google Meet, Zoom, Pre-recorded videos uploaded in the university portals
Lab-based education	All wet lab and dry lab-based research work can be conducted with ease and effectively	Dry lab-based research can be carried out online. Wet lab-based researches were postponed, canceled due to decrease in access to laboratory space and equipment. A decrease in research outcomes was noticed during the pandemic
Examination	Both Summative and Formative examinations conducted	New alternatives were opted for examinations. Online examination platforms were introduced by some HEIs. Reducing number of examinations or considering project assignments to evaluate students were other alternatives
Duration of teaching learning period	Normal/traditional timetable formats were followed with time bound instructions and learning activities	Teaching-learning time period was compromised owing to other influencing factors like availability of internet and digital devices
Infrastructure and facilities and learning environment	University facilities and infrastructures provided an ideal environment for teaching and learning	University infrastructure and facilities could not be accessed due to institute closures. Students and teachers had to depend on online resources, dry lab, virtual labs for teaching and learning. However, wet lab-based studies and researches faced extreme challenges to continue in the online mode

(continued)

Table 4.2 (continued)

	In-person teaching learning method	Online teaching learning method
Networking and student exposure	Workshops, conferences, and symposium (local as well as international) organized by universities, various student exchange programs, internship programs gave the students a good exposure and experience on the job markets	Virtual Workshops, conferences, and symposium (local as well as international) organized by universities on the online platforms. This helped in building networking, however, travel restrictions suspended student motilities (student exchange program/internship program)

4.4 Future Trends of Teaching and Learning Methodologies: A More Resilient Education Sector

A number of international agencies, including UNESCO, United Nations Children’s Fund (UNICEF), Organization for Economic Co-operation and Development (OECD), International Labor Organization (ILO), and World Bank, have analyzed the impact of COVID-19 and suggested necessary policy responses, with a strong focus on new approaches to teaching and learning during institute closure (ADB, January 2021).

As governments and other stakeholders adopt measures to fight the pandemic and ensure continuity of teaching and learning during institute closure, the emergence of a “new normal” seems to dominate discussions. This stems primarily from the premise that even after COVID-19, education systems will need to maintain measures that will be introduced and become part of the new operating procedures, and that these alternative mechanisms could potentially help to address specific needs of students.

The Asian Development Bank, Manila, has discussed the following key principles in their report “Covid-19 and Education in Asia and Pacific: Guidance Note” published in January 2021, that would contribute in shaping up a more resilient education sectors in future:

4.4.1 *Transformational Potential of Education Technology*

The transformation from traditional methods of teaching to digital platforms of instructions was the key to respond to education disruptions caused by the COVID-19 crisis. There is no doubt that digital platforms and associated solutions having great potentials on education continuity during the crisis irrespective of COVID-19 pandemic. Technological solutions for education having three promising areas: (i) encourage personalized and adaptive learning as potential student learning outcomes,

(ii) improvement of teachers' capacity to support and monitor student learning, and (iii) improving accountability of education systems by linking education delivery with learning data. The digital solutions can be implemented across various levels of education, e.g., K-12 school education, higher education, and vocational education. It is important to focus five interrelated areas: (i) identifying critical policy reforms; (ii) improving access to internet connectivity for education and training institutions, and households through additional investments; (iii) restructuring the professional development program for teachers and students to improve the technological and digital skills; (iv) develop mechanism to support parents and students to continue learning in the institutions and at home; and (v) explore the options for public–private partnerships to encourage more investments to mainstream digital education widely.

4.4.2 Linking Short-Term Measures with Long-Term Reforms

It is important to take immediate measures to ensure learning continuity through the development of long-term framework to improve learning quality. Poor learning quality was also evident prior to the COVID-19; therefore, there is a need to mitigate learning obstacles to raise the quality of learning. Digital platform could play an important role to bridge the teaching and learning through the online and distance learning strategies introduced during COVID-19. It is necessary to look into the long-term planning to facilitate hybrid learning (face-to-face and virtual) and strengthen teacher for efficient management of student learning.

4.4.3 Placing Education Technology Solutions in a Holistic Framework

Inevitably the impacts of COVID-19 pandemic have widened the gap of existing inequalities in education system and at the same time also highlighted new opportunities of home learning. The transformative changes in the learning process generated awareness about the teaching and learning outside physical set up of the educational institutions. Multi-stakeholder engagement through a holistic framework is required consideration of different pillars: (i) dynamic government policies considering emerging priorities on formative assessment and monitoring to ensure learning progress; (ii) improvement of telecom infrastructure for reliable, affordable, and stable connectivity in partnership with telecommunication companies; (iii) encourage readiness for school, teachers, and staffs to cope up with the new ways of learning practices; (iv) mechanism to support parents and students for personalized learning

outside of school premises to minimize the inequalities in learning opportunities; and (v) enhance partnerships with the companies developing and proving digital content, and support adaptive learning platforms to ensure effective delivery mechanisms.

4.4.4 Investing in Capacity Building to Optimize Education Technology Solutions

Transformative changes from in-person class teaching to online learning during the COVID-19 crisis have unearthed significant gaps in capacity among teachers and education administrators in managing alternative ways of teaching and learning. There is a serious requirement to collaborate institutions responsible for curriculum development, assessment, professional development of the teacher with the universities and also invite talents from the public and private sectors to help transforming teaching and learning. Improving capacity of the stakeholders of education system is the key for successful transformative role of technology.

4.4.5 Mobilizing Support to Education Sustainable Development Goals

It is important to protect the government investments for the education sector during the economic downturns amid COVID-19 crisis. Keeping in mind the short-term urgency to prioritize budget allocations to health and economic recovery activities, there is possibility of budget cuts for education sectors. However, budget cuts for education sector will have long-term negative consequences in terms of adverse impacts to human capital development and societal well-being. It is crucial to invest in the education sector to support meet the Sustainable Development Goals. Infrastructure to strengthen the internet connectivity for education and training needs more investment for wider benefits across sectors and the overall economy and also create new opportunities for self-directed and lifelong learning for students and teachers.

4.5 Discussion and Conclusion

Significant disruption of studies due to COVID-19 in the Higher Education Institute was evident through our research findings. During the COVID-19 pandemic transition to online learning surfaced significant gaps in capacity among teachers and education administrators in managing the new alternative ways of teaching to physical or in-person education system. There is a need to plan for the online and distance learning

strategies introduced during COVID-19 which could help in bridging the teaching and learning gap. Mitigating learning obstacles certainly raise the quality of learning at various levels of education system as well as economies. Policymakers need to prioritize budget for the education sector resilience for multiple hazards in the agenda for long-term planning to pave new ways of facilitating blended learning (face-to-face and virtual). As the governments and education institutions adopt measures to fight the pandemic and ensure continuity of teaching and learning during institute closure, the emergence of a “new normal” necessitates linkages between short-term measures and long-term efforts.

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