

Flexible Strategies for Ensuring Quality Learning Outcomes in Education in Emergencies

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ABSTRACT

The COVID-19 pandemic has interrupted schooling for students globally and challenged how policy-makers might respond and recover from this protracted emergency. In collaboration with NEQMAP, the GEM Centre has conducted a rapid review of policy and practice documents for 14 countries, and an online survey with policy-makers in 7 of them to identify the types of flexible learning strategies that were implemented over the course of this pandemic. An education in emergencies Policy Monitoring Framework was used both to guide the analysis of documents and survey data, and to provide the basis for reporting findings.

The range of flexible learning strategies identified in this review focused on:

- ▶ enhancing system level processes to ensure quality learning outcomes
- ▶ streamlining the curriculum
- ▶ utilising a range of student assessment and monitoring approaches
- ▶ improving inclusion and equity for vulnerable learner groups
- ▶ supporting school leaders and teachers using education tools and resources, professional development courses, and support networks

KEY WORDS

education in emergencies, Asia-Pacific, resilience, education systems, flexible learning strategies

INTRODUCTION

The COVID-19 pandemic (henceforth, pandemic) has interrupted learning for approximately 1.5 billion learners globally as a result of partial or complete school closures (UNESCO, 2020c). In seeking to respond to and recover from this education in emergency, policy-makers have implemented flexible learning strategies – comprising policies and practices – for strengthening education systems.

In collaboration with NEQMAP¹, and guided by its research agenda, the GEM Centre² reviewed flexible learning strategies for enhancing learner outcomes over the course of the pandemic, to date. Specifically, researchers reviewed the implementation of these strategies across several Asia-Pacific countries, and focused on system level strategies and policy challenges relating to delivery modes and equity.

To guide the analysis of policy documentation and survey data, an education in emergencies Policy Monitoring Framework (Tarricone et al., 2021) was applied to identify policy challenges, themes, and learnings. The findings from this review are structured with regard to this Policy Monitoring Framework.

This review³ provides a description of the flexible learning strategies that were implemented across selected countries over the course of the pandemic. Specifically, it addresses:

- ▶ systems level policy considerations to help ensure quality learning outcomes. These include strategies for enhancing communication and coordination protocols across government departments, non-government organisations, and additional stakeholders; expanding ICT infrastructure and investment; and implementing health and safety guidelines for safe school reopening
- ▶ flexible teaching and learning policies focused on streamlining the curriculum; supporting modified school-based learning practices; and utilising various delivery modalities to deliver distance and blended learning
- ▶ a range of assessment strategies (e.g., summative and formative assessments, delaying or cancelling assessments, or attempting assessment reforms) applied across countries, and at different education system levels, for monitoring purposes
- ▶ a focus on tackling inclusion and equity for certain vulnerable learner groups (i.e., low socioeconomic status learners; girls, to improve gender equality; children with disability and children living in rural and remote areas); and lack of focus on refugees, asylum seekers, internally displaced persons, and ethnic minority groups
- ▶ supporting the needs of school leaders and teachers during the pandemic by providing them with the tools and resources, professional development, and support networks, to manage different delivery modalities (including digital technology, television, radio and printed materials), and deliver distance and blended learning

1 Network on Education Quality in the Asia Pacific (NEQMAP) is a programme under UNESCO's Asia and Pacific Regional Bureau for Education, Bangkok, and is mandated to monitor the quality of education and ensure alignment of education systems with the SDG 4-Education 2030.

2 The Global Education Monitoring (GEM) Centre is a long-term partnership between the Australian Council for Educational Research (ACER) and the Australian Government's Department of Foreign Affairs and Trade (DFAT). The GEM Centre drives improvements in learning by supporting the monitoring of educational outcomes worldwide.

3 The GEM Centre would like to acknowledge the support and opportunity provided by NEQMAP to complete this thematic review. The GEM Centre would also like to thank policy-makers from Bhutan, Brunei Darussalam, Cambodia, Lao PDR, Malaysia, Nepal and Viet Nam for their valuable survey input.

RESEARCH QUESTIONS

The research questions guiding this thematic review were developed by NEQMAP. These questions are addressed under the following major section headings, which correspond with the key factors outlined in the Policy Monitoring Framework (Tarricone et al., 2021):

1. Systems factor

- a. How have countries in the Asia-Pacific introduced or integrated flexible strategies in their education systems to ensure quality learning outcomes?

2. Teaching and Learning factor

- b. What policies have been introduced at the system and school level?
- c. What tools and delivery modes are used to adapt existing strategies for measuring learning progress and outcomes? What are the challenges?

3. Agents factor

- d. How do flexible strategies address issues of inclusion and equity?
- e. How are schools and teachers prepared and supported?

RESEARCH DESIGN

This section details the research design developed to answer the above research questions, covering data collection, analysis, synthesis, limitations of the study, and the measures applied to ensure validity and reliability. A mixed-methods approach was applied combining two kinds of data sources: qualitative data from policy and planning documents, and quantitative data from a representative survey. The documents were mostly produced during the COVID-19 pandemic from early 2020 until mid-2021; more information about the documents can be found in Table 1. The survey was conducted from July to September 2021. To enable comparative analysis between countries in the same region, a sample of countries was selected from two sub-regions within the Asia-Pacific: South Asia and South-East Asia⁴. Based on this sampling strategy, in early August 2021, 14 NEQMAP stakeholder countries were invited to participate in the survey (see Table 1 for details of participants).

The data were thematically analysed. A research coding framework was developed to assist in analysing data, and the survey was designed to mirror this framework. Level one codes were derived from the research questions and the Policy Monitoring Framework (see Figure 1), with the purpose of broadly categorising these data. As familiarity with the literature increased, these level one codes were iteratively refined, and sub-codes (or level 2 codes) were developed, enabling a more fine-grained sorting of data. Upon having collected all the data, codes were further refined to address overlapping research themes between codes. Based on this analysis, the prominence of content was identified, from which themes were derived. The corresponding themes from the document analysis and survey analysis were then synthesised. Finally, findings about flexible learning strategies were inferred from the synthesised themes.

The validity of inferences derived from the analysis was supported through triangulating data from the documents and the survey, an analytical method often referred to as structural corroboration. By utilising these two data sources in tandem, the likelihood of deriving unwarranted generalisations from data outliers in one source, was reduced. For example, a survey response indicating an issue of high importance was interpreted in the light of whether this was also reflected in documents. Triangulating different data sources improves the consistency of data interpretations, impeding the exaggeration of minor and ambiguous items that could be identified in a particular data source.

4 Fiji, the only Pacific Island member of NEQMAP, was also invited to participate in the survey.

The reliability of the analysis was reinforced through intercoder consistency. More than one researcher analysed the same data. Data were initially coded by one researcher, then a second researcher reviewed this analysis to confirm, reject or adjust the initial interpretation and sorting of the data. This process was often repeated by a third and even fourth researcher. Ultimately, through this analytical corroboration, agreement was eventually reached on what constituted the appropriate coding and findings, thereby enhancing the likelihood that other researchers would infer the same findings.

Table 1: Overview of research design

Collection of documents	63 flexible learning strategy documents ⁵ were collected from 14 NEQMAP Asia Pacific countries ⁶ , with 36 documents included in this review. These documents comprised current (at the time) and publicly available education sector plans (ESP), COVID-19 education response plans (CERP), Global Partnership for Education (GPE) COVID-19 accelerated funding requests, and online updates provided by national ministries and international development organisations.
Analysis of documents	A rapid review ⁷ was conducted to code data according to the Policy Monitoring Framework; see Figure 1. Specifically, data was coded using the policy considerations that comprised each of the key factors – Systems, Teaching and Learning, and Agents – in this framework to identify pandemic response and recovery policy challenges, themes and learnings.
Collection of survey data	The following 14 NEQMAP Asia-Pacific countries were invited to in early August 2021 to participate in the survey: Bhutan, Brunei Darussalam, Cambodia, India, Indonesia, Lao PDR, Malaysia, Nepal, Fiji, Philippines, Singapore, Sri Lanka, PNG and Viet Nam.
Analysis of survey data	Seven countries – Bhutan, Brunei Darussalam, Cambodia, Lao PDR, Malaysia, Nepal and Viet Nam – responded to the survey, which closed in late August 2021. Quantitative data were analysed using frequency and mean distributions, while qualitative data were analysed thematically using the Policy Monitoring Framework.
Limitations	Due to the restrictions in the format of the study, as well as time and resource limitations, the study was necessarily limited in scope. For instance, the study did not examine the processes (and therefore the challenges) in which strategies were implemented; in addition, the impacts and outcomes of strategies were not assessed. Limited survey data were collected, given that only seven of 14 countries completed the survey.

5 Full reference list available upon request made to the authors.

6 Bhutan, Brunei Darussalam, Cambodia, Fiji, India, Indonesia, Lao PDR, Malaysia, Nepal, Papua New Guinea (PNG), the Philippines, Singapore, Sri Lanka, and Viet Nam

7 Rapid reviews streamline research processes by targeting key questions, issues and literature. While these are not exhaustive, given that they are broad in scope and completed over tight timelines (Hamel et al., 2021; Khangura et al., 2012; Tarricone et al., 2021).

POLICY MONITORING FRAMEWORK

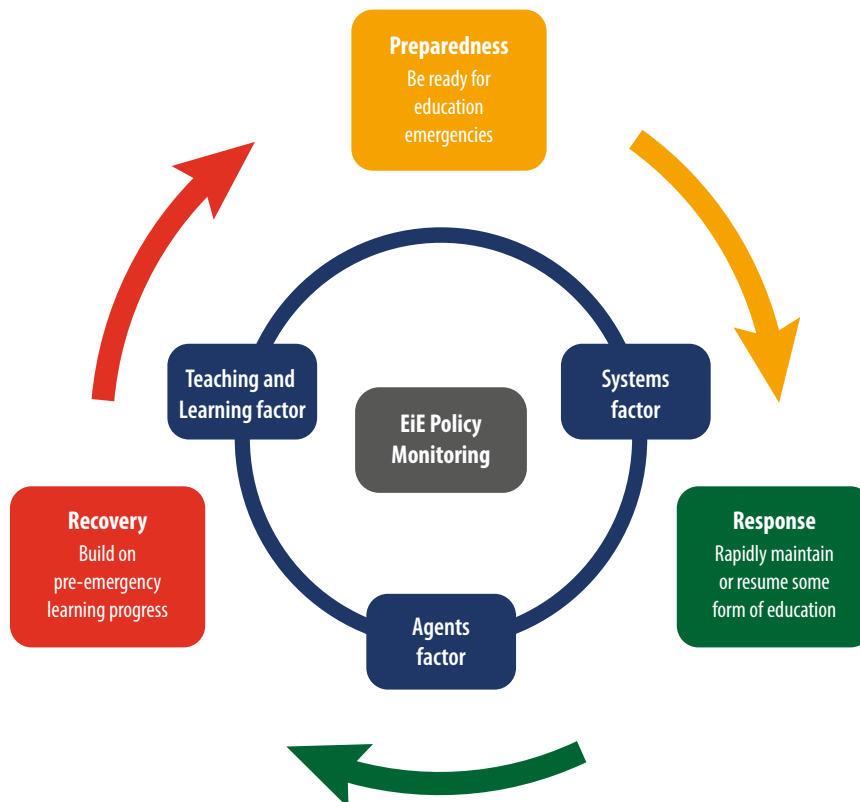
This framework was informed by a rapid review of the education in emergencies literature (Tarricone et al., 2021). While the framework is underpinned by three common emergency management phases (Preparedness, Response and Recovery; INEE, 2010), it uniquely emphasises three key factors pertaining to education policies:

- ▲ Systems factor: central processes, practices, networks, and relations within an education system
- ▲ Teaching and Learning factor: activities and resources related to how teachers teach, and how students learn and are assessed
- ▲ Agents factor: corporate bodies (e.g., governments and non-government organisations) and persons (e.g., groups and individuals) that make decisions and act within education in emergencies

Each factor houses policy considerations which, in turn, categorise more detailed policy issues (see Tarricone et al., 2021, for details). Given the scope of this review, data derived from policy documents and surveys were coded and analysed relative to policy considerations only.

The sections that follow are structured according to Systems, Teaching and Learning, and Agents factors (major headings) and corresponding policy considerations (minor headings). Notably, the policy considerations address the challenges facing policy-makers working in education in emergencies, with content that follows outlining what flexible learning strategies were utilised to respond to and recover from the pandemic.

Figure 1: Policy Monitoring Framework for building a resilient education system⁸



8 This framework was developed by Tarricone et al. (2021).

1. SYSTEMS FACTOR

FLEXIBLE EDUCATION SYSTEM STRATEGIES TO ENSURE QUALITY LEARNING OUTCOMES

Planning for education in emergencies

Policy-makers need to ensure that education policies are aligned across planning documents. Countries that can achieve this are likely to guarantee that strategic policies and practices outlined in shorter-term plans (e.g., COVID-19 Education Response Plans, or CERPs) will be consistent and continuous with those seen in broader, longer-term strategic documents (i.e., Education Sector Plans, or ESPs). Across the countries reviewed in this study, there was a decided attempt to ensure that the flexible learning strategies outlined in CERPs, and implemented during the response and recovery phases of the pandemic, were aligned with ESPs, e.g., Bhutan, Cambodia, India and Nepal.

While both documents remain instrumental for policy-makers, CERPs specify those policies that should be prioritised for returning to normal schooling. For example, various CERPs (e.g., Cambodia, Lao PDR, Sri Lanka) aimed to reduce in-community viral transmissions, protect school and community well-being, and support learning continuity, the latter especially for vulnerable groups (Asian Development Bank, 2021; MoES, 2020a; MoEYS, 2020). In PNG, a phased roadmap (Education Emergency Response and Recovery Plan, or EERRP) was developed for emerging from remote learning, returning to school safely, participating in safe school learning, and building education system resilience following the pandemic (NDoE, PNG, 2020).

CERPs and other planning documents also focused on protecting the health and well-being of learners and school staff through water, sanitation and hygiene (WASH) and psychosocial initiatives (Bhutan, Nepal, Malaysia, Philippines, Singapore) (DoE, Philippines, 2021; GPE, 2020d; Nepal Education Cluster, 2020; UNESCO, 2020a). Distance learning and flexible learning were addressed by providing operational guidelines for home-based learning, e-learning platforms, flexible learning strategies and media to support learners, and enabling different learning modalities (e.g., computers, television, radio, and paper-based materials) (Brunei Darussalam, Fiji, Malaysia, Nepal, Sri Lanka, Viet Nam) (GPE, 2020d; MoECRT, 2020; Nepal Education Cluster, 2020). The need to address the distance and home learning needs of vulnerable groups, such as the children of migrant labourers (India), and learners in rural and under-resourced schools (Sri Lanka), were acknowledged in some documents (DoSEL, 2020; Ministry of Finance et al., 2020).

Finally, planning documents outlined necessary curriculum adjustments (e.g., narrowing the curriculum), or how learning materials might be aligned in response to a country's shifting state-of-emergency, and they provided protocols and initiatives for teacher training to support learning continuity (Indonesia, Malaysia, Philippines) (DoE, Philippines, 2021; MoECRT, 2020; UNESCO, 2020a).

Collaboration and coordination

Collaboration and coordination across government departments and non-governmental organisations (NGOs) are needed to help ensure that flexible learning strategies are successfully implemented within an education system. It is important that this is managed centrally and overseen by policy-makers. The Cambodian Ministry of Education, Youth and Sports (MoEYS), for example, despite being the central body for developing and implementing flexible learning strategies, engaged collaboratively with other governmental and non-governmental bodies (e.g., UNICEF) to meet objectives, initiate activities and derive indicators for its CERP (GPE, 2020b; MoEYS, 2020).

Brunei Darussalam, India, Indonesia, Malaysia, Nepal and Singapore employed a centralised approach with close collaboration and coordination across ministries, public welfare agencies, communications agencies,

and the private sector. For example, in India, the federal government consulted with different provincial governments and recommended the development of a national plan and guidelines. A CERP was developed by the Ministry of Education (MoE), which outlined the responsibilities of various local governmental bodies. Based on the plan, Control and Command Centres for teachers and schools were established (GPE, 2020d; MoE, India, 2021). In Indonesia, there was close collaboration between the government and aid organisations, including UNICEF, ADB, UNESCO and other NGOs. These collaborations helped the government reform policies and reach out to rural and socioeconomically disadvantaged communities to address basic healthcare support, education and vaccine supply (UNICEF, 2020a). Additionally, private sector collaboration in Singapore and Brunei Darussalam included the provision of high-speed internet access and devices for schooling.

Communicating with and between stakeholders

Several approaches were identified that highlighted how policy-makers might successfully educate communities about the pandemic and its implications for education.

At a systems level, these included communicating in local languages, ensuring that communication platforms are accessible to all individuals (including the disabled and the vulnerable), and making contact information widely available (Ministry of Finance et al., 2020). Timely communication with teachers, parents and students about social distancing and hygiene practices, support for home learning, and safety information, were critical to the recovery process and to prepare for school reopening (NDoE, PNG, 2020).

One important protocol involved communicating pandemic information via social media platforms (e.g., Cambodia, Lao PDR, Sri Lanka) (Ministry of Finance et al., 2020; MoEYS, 2020). In Brunei Darussalam, Indonesia, Malaysia and Singapore, communication of important announcements, and the conveying of news and information to teachers, students and parents leveraged the MoE's social media platforms, i.e., Facebook, Twitter, Instagram, and YouTube.

Governments in Cambodia, Lao PDR and the Philippines also used traditional telecommunications platforms such as public television and radio to communicate pandemic-related protocols and public health information (DoE, Philippines, 2020; MoEYS, 2020). In contrast, the Sri Lankan Government made use of modern telecommunications platforms, such as Telegram, Viber and mobile SMS (Ministry of Finance et al., 2020), while yet other countries established telephone help-lines to assist students and parents (including those with children with disability), given limited internet connectivity and to support community engagement and educational initiatives (e.g., Brunei Darussalam and India) (Ministry of Finance et al., 2020; MoE, Brunei, 2020b; MoE, India, 2021).

Finally, some governments used print media (Cambodia, Lao PDR, Sri Lanka) as part of their pandemic communications strategy (e.g., posters, flyers and pamphlets) (MoEYS, 2020), while others (Singapore, Brunei Darussalam) published comprehensive lists of frequently asked questions and guidelines on government websites.

Information, communication and technology (ICT) infrastructure

The analysis revealed that enabling flexible learning strategies generally involved expanding ICT infrastructure to provide greater access to, and support for, different teaching and learning modes.

An important consideration was the need to expand infrastructure to widen national internet coverage in support of distance learning following an emergency (Cambodia) (MoEYS, 2020), and to improve its quality (DoE, Philippines, 2020). In Malaysia and Indonesia, for example, the shift towards distance learning, especially for children in rural areas and from socioeconomically disadvantaged backgrounds, made it apparent that greater infrastructure investment was needed to support their access to the internet (UNICEF, 2020a, 2020b). Additionally, policy considerations relating to ICT investment may also be needed to support students who have access only to non-smart mobile phones, and radio and television,

and are unable to access curriculum delivered via the internet or mobile devices (e.g., computers, mobile phones) (Nepal Education Cluster, 2020).

Finally, expanding ICT infrastructure is also pivotal for supporting background system processes, such as migrating IT systems to Cloud Servers to respond to increased demand for distance learning (DoE, Philippines, 2020) and enabling government workers (including from education) to work from home during the pandemic (Ministry of Finance et al., 2020).

Supporting health and safety for school reopening

The health and safety of students and school staff need to be secured as part of an education system's flexible learning strategy. This almost always involved increasing awareness about various protocols in preparation for schools reopening. In Nepal, planning documents outline clear WASH reopening procedures (Nepal Education Cluster, 2020), while in Cambodia, India, Lao PDR, and PNG similar guidelines were also developed to disseminate hygiene practices and improve school facilities (DoSEL, 2020; Ministry of Finance et al., 2020; MoES, 2020a; MoEYS, 2020; NDoE, PNG, 2020). Such protocols for safeguarding facilities addressed disinfection practices, improving water supply for hand washing, managing classroom arrangements, providing face masks and hand sanitisers, and refurbishing school buildings (e.g., designing low-cost handwashing stations).

In Brunei Darussalam and Singapore, where schooling could resume, schools adhered to strict health and hygiene protocols, temperature checks, social distancing and managing students with special needs (MoE, Brunei, 2020b; MoE, Singapore, 2021). In the Philippines, schools must abide by protocols that require all individuals in schools to wear masks and monitor students' health (DoE, Philippines, 2020).

2. TEACHING AND LEARNING FACTOR

POLICIES INTRODUCED AT THE SYSTEM AND SCHOOL LEVELS

Curriculum

The need to respond to and recover from the pandemic caused policy-makers to re-evaluate and streamline the delivery of national curricula. Accordingly, 11 of the 14 countries reviewed modified some aspect of their curriculum to focus on learning competencies and life skills as part of their flexible learning strategy.

Some countries also engaged in prioritising aspects of their curriculum during the pandemic. The PNG Government, for example, prioritised language, mathematics and science subjects (NDoE, PNG, 2020), while others (Cambodia and Indonesia) emphasised curricula content that focused on ICT skills, health knowledge and life skills.

Various systems also narrowed the school curriculum as part of their education system strategy. In the Philippines, the government adapted the K-12 curriculum to include the most essential learning competencies, while learning materials developed by partner organisations (e.g., SEAMEO and CHED) were incorporated into the curriculum as needed (DoE, Philippines, 2020). In Lao PDR, school shutdowns instigated a temporary narrowing of the curriculum to focus on select subjects (MoES, 2020a), while the primary and secondary school curriculum for reading, writing, mathematics and science were narrowed in scope in Bhutan, Cambodia, Nepal, and Viet Nam.

Modified school-based learning

A range of modified school-based learning approaches was implemented across countries, depending on their stage of school reopening. In general, government schools and national sub-regions in surveyed countries indicated some autonomy or substantial autonomy to implement their own flexible teaching and learning strategies; only Lao PDR indicated that there was no autonomy for government schools.

DoE documents from the Philippines showed that school-based learning was modified, and the reopening of schools was delayed by three months to allow teachers to upskill on multiple delivery modalities and to prepare instructional materials (DoE, Philippines, 2020).

In Cambodia and Lao PDR, the phased reopening of schools involved staggering student attendance either by grade or reduced hours of attendance (GPE, 2020b). This social distancing approach also limited large student gatherings, including assemblies and shared meal breaks (MoES, 2020a). Similarly, the PNG Government implemented shift classes (2 days of classes per week) with a blended approach (i.e., continuing learning at home using paper-based materials, radio, television, and the internet). Across all three countries, students who could not access distance learning were prioritised for remedial classes. In Brunei Darussalam and Singapore, schools could operate pending their compliance with protocols applying to health and safety, students sitting national assessments, and children with disability.

Distance learning and blended learning

Survey data and policy analysis revealed that countries adopted mixed-modes of instructional delivery in response to school shutdowns. These modes typically included online platforms, television and radio programming, and paper-based materials. Importantly, all survey respondents indicated that content delivery for mobile phones had been enabled over the course of the pandemic, while a majority highlighted that moderate to substantial attempts had been made to implement various distance learning modalities (e.g., computers, mobile phones, television, radio and paper-based materials).

Across policy documentation, distance learning modalities implemented in Brunei Darussalam, Indonesia, Malaysia and Singapore included learning management tools to conduct and deliver lessons; television programming (e.g., Televisi Pendidikan Indonesia [Education TV]); social media applications (Facebook, Instagram, Telegram); online services such as Google Suite Education, Smart Class, Microsoft Teams, Quipper School, Sekolahmu and Kelas Pintar; and home learning packs – i.e., physical materials for children with no access to the internet (MoE, Singapore, 2021; UNESCO, 2020a, 2020b; World Bank, 2021).

In Bhutan, India and Nepal, government portals were used to upload and access learning materials, while online platforms (e.g., Google Classroom), social media (e.g., WhatsApp and WeChat), television, radio and specially developed paper-based materials, were used for self-learning (GPE, 2020a; MoE, India, 2021).

Digital platforms across computer devices

Many of the countries reviewed aimed to implement flexible strategies to ensure that digital resources could be accessed via learning portals and electronic computer devices (e.g., smart phones, tablets, laptops or desktop computers).

In India, federal government e-learning platforms and portals existed prior to the pandemic (e.g., DIKSHA portal) and have since been augmented with additional content (e.g., teacher developed videos). Websites have also been developed by provincial governments, for instance, e-Kaksha, in the state of Rajasthan (MoE, India, 2021), while other states, such as Kerala, have started YouTube channels for students to access video content at their convenience. In the state of Nagaland, broadcasted learning content can be saved onto DVDs/USB drives and distributed to students for offline use (MoE, India, 2021).

Following interruptions to schooling, students in Bhutan and Nepal utilised Google Classroom and a government portal, respectively, to access learning materials and support their learning (GPE, 2020d). Cambodia provided a learning platform and distributed thousands of digital assets (e.g., videos) via social media that could be accessed by students using their internet-ready devices (e.g., mobile phones or computers) (MoEYS, 2020). Interactive online lessons have also been implemented, often among groups of five to ten students (GPE, 2020b). Comparable platforms supporting a range of video, audio, and external web-based learning resources have also been developed, or are in the process of being further developed, in Fiji, Indonesia, Lao PDR, Malaysia, the Philippines, and Singapore (DoE, Philippines, 2020; Gounder & Narayan, 2021; GPE, 2020c).

Portable internet devices (e.g., mobile phones or computers) were utilised for teaching and learning during school closures. In Bhutan and India, teachers created restricted online discussion forums using WhatsApp and WeChat for students to access supplementary video lessons and learning materials via their electronic devices (MoE, India, 2021). Podcasts and QR codes tagged to e-textbook content have similarly been developed and made accessible on these devices to support teaching and learning (MoE, India, 2021). Campaigns such as 'donate a device', as seen in the state of Maharashtra, have also been implemented to provide portable internet devices for students without the means to own one (MoE, India, 2021). In Nepal, IVR-based (interactive question-answer sessions, automated voice messages, etc.) and SMS-based systems have been developed to help students with mobile phones who are unable to access the internet (Nepal Education Cluster, 2020). In addition, mobile devices have been increasingly utilised as a means of communication rather than just for curriculum delivery. For example, in Lao PDR, social media was used to promote safety and hygiene so that students could access these messages via their mobile devices (MoES, 2020b).

Television and radio

As crucial flexible learning strategies, television and radio have been extensively used to deliver MoE developed content through, mostly, state owned channels. While Singapore relied heavily on online modes to deliver learning materials, Brunei Darussalam used its Radio Televisyen Brunei (RTB), Indonesia its TV Edukasi or Televisi Pendidikan Indonesia, and Malaysia its Radio Televisyen Malaysia. Malaysia also used a private broadcasting corporation, ASTRO, to deliver educational programmes to learners (DoSEL, 2020; MoE, India, 2021; Nepal Education Cluster, 2020).

Television broadcasts are unidirectional, costly and time consuming to develop, and cannot assist with monitoring and assessment. Considering these issues, MoEs targeted content for specific student cohorts. For example, television content was aired to support year 9 and 12 students sitting for their exams in Viet Nam (Duong, 2020), and for junior primary school children in Fiji.

The MoE Sri Lanka also collaborated with stakeholders to broadcast several educational programmes in both Sinhala and Tamil via dedicated television channels, and launched a new channel with the NIE for Advanced Level (A/L) and Ordinary Level (O/L) students. In the Philippines, self-learning modules have been converted for television viewing (DoE, Philippines, 2020), and the NDoE, PNG (2020) have planned for children with disability to have access to videos featuring sign language and subtitling.

Educational resources have also been developed for radio broadcast in Bhutan, Cambodia, India, Indonesia, Lao PDR, Nepal, PNG, Philippines, and Sri Lanka. In India, for example, radio programmes are delivered in multiple languages and are categorised as curriculum based and enrichment, or edutainment (DoSEL, 2020; MoE, India, 2021). In Cambodia, radio was useful in the early stages of the pandemic for reaching students in pre-school and early primary school (MoEYS, 2020).

Delivering paper-based materials to homes

Paper-based learning materials continue to be widely used by countries in the region. Many schools in Bhutan, Brunei Darussalam, Cambodia, Fiji, Indonesia, Malaysia, PNG, Philippines, Singapore and Sri Lanka continue to deliver paper-based worksheets to their students. This approach is dependent, however, upon available school resources (DoE, Philippines, 2020; Gounder & Narayan, 2021; GPE, 2020b).

MEASURING LEARNING PROGRESS AND OUTCOMES

Assessment and monitoring

A range of assessment strategies was applied across countries, and at different education system levels, for monitoring purposes.

Across survey respondents, classroom assessments⁹ administered by teachers were generally seen as most effective for measuring learning progress during the pandemic. This was followed by school assessments¹⁰, district assessments, nation-wide assessments¹¹, and international assessments. Respondents also indicated that assessments were narrowed in scope¹², and delayed or undertaken less frequently¹³, during the pandemic. Similar findings were noted in policy documents (e.g., Indonesia, Malaysia and Singapore), indicating that high-stakes assessments/examinations were delayed or cancelled as a result of school closures. In the Philippines, national examinations continued and were managed using social distancing protocols (DoE, Philippines, 2020).

Interruptions to assessments also provided opportunities for assessment reforms. For example, in Bhutan, formative assessments¹⁴ are included in videoed lessons and submitted by students. In the Philippines, learners' knowledge, skills, attitudes, and values will be assessed using a range of assessment methods, including portfolios, performances and products. Although assessment rubrics will be used to capture evidence of learning, testimonies from parents and community leaders may also be considered. Finally, proposed assessment reforms in India emphasised the importance of defining 'what to assess' and 'how to assess' and adapting the assessment system to become less exam centric (MoE, India, 2021).

Plans also indicated that assessments would be contextually repurposed and implemented once schooling resumed. In the Philippines, this might involve summative assessments¹⁵ (DoE, Philippines, 2020). In Fiji and Lao PDR, formative assessments are expected to be implemented (GPE, 2020c; MoEHA, 2020), while in Brunei Darussalam, Indonesia and Malaysia, such assessments might also be combined with diagnostic¹⁶ assessments and online examinations to identify learning progress (UNESCO, 2020a). In PNG, assessments are to be used to target students in need of booster classes (NDoE, PNG, 2020).

Across policy documents, countries differed in their emphasis on monitoring students' learning progress during the pandemic. For example, CERPs from Bhutan and Nepal specified that teachers and schools are responsible for collecting and maintaining student attendance and learning data (Nepal Education Cluster, 2020), while in Singapore, ongoing monitoring and assessment was facilitated using pre-existing digital platforms. In Brunei Darussalam, Indonesia and Malaysia, there was a lack of evidence of the availability

9 Implemented in Bhutan, and moderately implemented in Brunei Darussalam, Cambodia, Viet Nam, Malaysia, and Nepal.

10 Implemented in Bhutan and Brunei Darussalam, and moderately implemented in Cambodia, Viet Nam, Malaysia, and Nepal.

11 Implemented in Bhutan, Brunei Darussalam, Malaysia, and Nepal.

12 Bhutan, Brunei Darussalam, Cambodia, Lao PDR, Nepal, and Viet Nam

13 Brunei Darussalam, Cambodia, Lao PDR, Nepal, and Viet Nam

14 Used during lessons to provide student feedback and inform adjustments to teaching.

15 Used to evaluate what students have learned after lessons.

16 Used to identify student learning prior to lessons; thereby can be used to inform the appropriate lessons.

of monitoring tools, although MoE guidelines in Brunei Darussalam noted the need for teachers to monitor student well-being and to boost morale (MoE, Brunei, 2020a).

In India, the CERP emphasised the importance of collecting and analysing data on learning behaviours and outcomes, and regular summative and formative assessments being facilitated by teacher training on school-based assessment and ICT in assessment.

While encouraging provincial governments to develop their own metrics, this document recommends that a set of common metrics may be determined. For example, in the state of Haryana a quiz is released during programmes telecast on television to gather data on the reach of the programme (MoE, India, 2021). In Nepal, an evaluation of the distance learning tools to be developed has been proposed as a part of the funding request submitted to Global Partnership in Education (GPE) (GPE, 2020d).

Finally, monitoring and evaluation frameworks are usually incorporated into ESPs and are applied to CERPs, as with Cambodia, Lao PDR and Philippines. The CERPs may include instructions for collecting data about planned interventions and activities, access and equity, and children reached during the pandemic (DoE, Philippines, 2020; MoEYS, 2020). For example, the Lao PDR CERP identifies the need to monitor the uptake and effectiveness of distant learning options and safe school protocols (MoES, 2020a), while PNG's EERRP presents outcomes, indicators, criteria for disaggregated reporting, and baselines and targets, that can be used for monitoring across each of its school reopening phases (NDoE, PNG, 2020)

3. AGENTS FACTOR

ADDRESSING INCLUSION AND EQUITY

Low socioeconomic status (SES)

The need to improve inclusion and equity has driven a multi-pronged approach, using a range of delivery modalities, to ensure that students' learning is not affected by a lack of access, especially for students of low SES.

Prior to the pandemic, the Fiji Government sought to address how the cost of educational resources impedes access to education for learners from low SES households. This led to the development of a national Policy on Free Educational Resources, and the establishment of a digital platform which entitles all students free access to specified educational materials via the internet (MoEHA, 2015). Another consideration is that while television and radio provide opportunities to reach students who do not have access to the internet, many learners from low SES backgrounds (e.g., Cambodia, Lao PDR and Nepal) may not have access to any of these modalities, thus negating their desired reach into commonly marginalised communities (MoES, 2020a; MoEYS, 2020; Nepal Education Cluster, 2020).

To enable access to designated educational content many countries, among them Brunei Darussalam (UNESCO, 2020a), Indonesia, Lao PDR (GPE, 2020c), Malaysia and Viet Nam, and some certain provinces in India (DoSEL, 2020), provide free mobile devices to learners through public donations and subsidies; or completely defrayed the cost of internet subscription for children without access (Duong, 2020).

Gender equality in education

Many countries have initiated measures to address girls' access to education. Cambodia, for instance, performs relatively well in ensuring that girls have the same access to education as boys, at least at primary and secondary school, if not in higher education (GPE, 2020b).

In India, an existing stipend paid to young female students will continue (MoE, India, 2021). A national initiative has been implemented to upskill all government elementary school teachers that includes modules on how to integrate gender in the teaching and learning process (DoSEL, 2020).

The Sri Lankan Government's secondary education reform is also expected to benefit about 953,000 students (503,000 females and 450,000 males) annually by 2026 (Asian Development Bank, 2021), and will help principals develop strategies to attract more students, especially girls, to take up STMC subjects (Asian Development Bank, 2021).

In PNG, a comprehensive plan is in place to provide girls with psychosocial support and counselling for gender issues, and teaching and learning resource packs to challenge negative gender stereotypes and norms. Teacher training materials have also been developed to highlight how gender equality might be practiced in the classroom, and positive parenting packs have been designed to support positive parenting, child protection (including from gender-based violence [GBV]), and a positive home learning environment (NDoE, PNG, 2020).

The pandemic also threatens to increase disparities between girls and boys. In Lao PDR, girls are more susceptible to GBV, and are compelled to undertake labour, and generally have less access to distance learning opportunities (MoES, 2020a). Finally, hygiene and sanitation have also become a primary area of concern for girls when schools reopen in countries like Bhutan, Nepal and PNG (GPE, 2020a, 2020d; NDoE, PNG, 2020).

Children with disability

A range of flexible learning strategies are required to address the needs of children with disability. In Indonesia and Malaysia, for instance, all centres providing education, support and therapy to children with disability remained closed for a time, posing a risk of exacerbating pre-existing disparities (UNICEF Malaysia, 2020). In PNG, pre-existing barriers to education for children with disability are expected to worsen over the course of the pandemic. These barriers include a lack of awareness of their rights; insufficient budgeting for special education; a lack of teachers with disability-inclusive training; challenges with retention and transition across all levels of education; difficulties accessing educational infrastructure and resources; and a lack of inclusive curricula and assessments (NDoE, PNG, 2020).

An important strategy for meeting the needs of children with disability has been to adapt learning materials so that they incorporate sign language (India, Cambodia, Philippines and PNG) and closed captioning (Philippines) into videos, include braille into print material (Cambodia, Philippines, PNG), and providing multiple formats for children to choose from (Philippines) (DoE, Philippines, 2020; DoSEL, 2020; GPE, 2020b; MoEYS, 2020; NDoE, PNG, 2020).

In Bhutan, a curriculum expressly adapted to the needs of children with disability has been developed. In addition, Bhutan plans to provide tablets with data coverage for three months to students in schools for the disabled and those in schools with special programmes for the disabled (GPE, 2020a).

In Viet Nam, professionals provide in-person home support for children with disability to help them prepare to return to school. In PNG, learning packs and devices will also be developed for home learning. The development of key messaging and tips for parents/guardians supporting learning for children with disability will also be delivered via television, radio, and SMS platforms (NDoE, PNG, 2020). In Brunei Darussalam and Singapore, schools and centres have remained open, providing ongoing support for children with disability.

Refugees, asylum seekers and internally displaced people

Nearly all country documents reviewed did not explicitly address refugees, asylum seekers or internally displaced persons. In India, however, guidelines have been published for continuing the education of children of migrant labourers (DoSEL, 2020) by ensuring access and admission for the displaced in nearby schools.

Children living in rural or remote areas

A limitation of online learning is that many children in rural areas have unreliable or no access to the internet, such as in remote areas in Bhutan, parts of Cambodia (GPE, 2020b; MoEYS, 2020), and the mountainous regions of Viet Nam (Duong, 2020). For such reasons, children in Lao PDR have been prioritised for remedial support (e.g., catch-up tutorials) when in-person teaching resumes (GPE, 2020c), while paper-based self-learning modules in Bhutan have been developed to reflect content delivered through other modalities.

Many countries use delivery modes like radio and television to ensure access in rural areas. For example, in India, radio provides near-universal access and is considered a preferred modality for rural areas (MoE, India, 2021).

Ethnic minority groups

Ethnic minority groups have been considered in Cambodia's design of distance learning material, such as by its providing radio lessons in multiple languages (MoEYS, 2020). Other country documents reviewed did not address the education needs of ethnic minority groups.

SUPPORTING SCHOOL LEADERS AND TEACHERS

Tools and resources for school leaders

Tools and resources most used to support school leaders involved digital technology, alternative platforms (e.g., television, radio, and printed materials), blended learning, emergency response and management systems, disseminating and communicating information to broader school community (e.g., parents and community members), and online resources for self-learning.

These tools and resources were needed to help school leaders and their schools support students and their families. Specifically, tools and resources included capacity development resources, such as instructional videos in Cambodia (GPE, 2020b), and others that provide school leaders, as in the Philippines (DoE, Philippines, 2020), with access to virtual learning platforms integrating a live helpdesk with educational coaching. Other resources included health and safety guides and templates for safe school reopening and operation. These documents have been developed and disseminated in Lao PDR (i.e., Safe School Operations Guide) (MoES, 2020a), while in Sri Lanka, the government has provided guides for pandemic disinfection schedules, monitoring toolkits, and handwashing checklists.

Professional development and support networks for school leaders

Transitioning to flexible teaching during an emergency involves providing school leaders with appropriate professional development (PD) and support networks. The survey revealed that PD and support networks for school leaders focused on issues relating to assessment and digital technology, and more broadly, alternative platforms, emergency management, and communicating information to the school community.

In Sri Lanka, principals were provided PD to develop blended learning plans for strengthening classroom, online, and remote learning (Asian Development Bank, 2021), while online training was provided to school officials for the cleaning of schools before reopening. In other countries, PD sessions were provided using centralised bodies like Learning Resource Centres that serviced clusters of schools (e.g., Lao PDR) (GPE, 2020c), or virtual platforms that provided opportunities for school leaders to learn about child-friendly distance learning approaches and how to effectively reach out to students.

School leaders can also be supported through professional networks. Cambodia has existing networks in place to support schools and school leaders, which have been leveraged and enhanced in response to the pandemic. Among these are ‘schools help schools’ and ‘provinces help provinces’ experiential exchange programmes (GPE, 2020b; MoEYS, 2020). Similar networking opportunities are offered in the Philippines, where school leaders can engage in online learning action cells (DoE, Philippines, 2020).

Tools and resources for teachers

Teachers are central to an education system transitioning to flexible learning and must be supported over the lifecycle of an emergency. The survey revealed that most teacher tools and resources addressed the curriculum, alternative platforms, how to disseminate and communicate information to the broader school community, and online resources for self-learning.

In contrast, the document analysis emphasised the importance of teacher toolkits and guidelines. In India, teachers were provided with access to a resource toolkit via the national education portal (DoSEL, 2020) and best practice resources through provincial governments (MoE, India, 2021). Videoed content was often developed across countries to provide teacher instruction and support. In Cambodia, videos created to improve teachers’ distance learning pedagogy (GPE, 2020b) were prepared and distributed via social media, while video guidelines for undertaking online teaching were developed for teachers in Lao PDR (GPE, 2020c; MoES, 2020a) and Viet Nam (Linh, 2020).

Hard and softcopy resources were also widely utilised. In Bhutan and Nepal, for example, Guidelines for Curriculum Implementation Plan for Education in Emergency (MoE, Bhutan, 2020) and CERP guidelines for the remote delivery of content and monitoring (Nepal Education Cluster, 2020) were developed and implemented for teachers.

Professional development and support networks for teachers

The survey data emphasised the importance of providing teachers with PD and support networks to address challenges relating to digital technology, disseminating and communicating information to the broader school community, and online resources for their own self-learning.

The document analysis revealed that the main narrative of teacher PD in response to the pandemic was that they should be well-equipped to deliver education content remotely. This was likely due to school lockdowns, when teachers have considerably less contact time with students and may be required to spend more time on PD, as seen in Fiji (MoEHA, 2020).

Professional development was typically provided online and addressed contextual challenges. In Bhutan, teacher training was conducted mainly through webinars and focused on building familiarity with digital tools, although this was hampered by infrastructure limitations, such as poor video conferencing facilities (GPE, 2020a). Similarly, initiatives in Lao PDR (delivered online via teacher training colleges) and the Philippines (delivered online via the DoE) emphasised distance learning and learning about different delivery modalities (GPE, 2020c; MoES, 2020a) (DoE, Philippines, 2020).

Various PD programmes and initiatives also focused on enhancing teachers’ online learning pedagogy. The Brunei Darussalam Teachers’ Academy, for example, provided continuous PD support (including the Tool Box Series to assist with teaching and learning during the pandemic), while in Indonesia the MoECRT and the teachers’ union conducted online training to support the delivery of online teaching. In India, a PD initiative for all government elementary school teachers was repurposed and contextualised to address teaching during the pandemic and maintaining student inclusion, while Massive Online Open Courses (MOOCs) were also developed on experiential learning and competency-based education (DoSEL, 2020).

Broader PD training opportunities have also been developed in PNG so that teachers can deliver and supplement remote learning, prepare for schools reopening, run booster classes, conduct rapid learning and

psychosocial well-being assessments, deliver accelerated learning programmes, and provide psychosocial support to students (NDoE, PNG, 2020).

Several countries also made use of professional teacher networks to enable peer support when adjusting to flexible teaching. Teachers in Lao PDR were advised to engage via social media groups (e.g., WhatsApp), or to create new groups on those channels to learn from one another (MoES, 2020a). In Cambodia, teachers were encouraged to view and discuss PD materials provided by the MoEYS (GPE, 2020b), while in India, provincial governments were expected to establish ‘multi-layered WhatsApp cascade’ to disseminate content from the provincial level to teachers, as well as through multiple levels of government (MoE, India, 2021).

CONCLUSION

The pandemic has disrupted education for students globally and worsened pre-existing disparities for those from vulnerable populations (UNESCO, 2020c). To mitigate the increased risk of students falling behind, this review has contributed a high level overview of flexible learning strategies that were implemented during the pandemic to enhance learner inclusion and equity across a selected group of Asia-Pacific countries.

These strategies were grouped under Systems, Teaching and Learning, and Agents factors and their corresponding policy considerations, located within an education in emergencies Policy Monitoring Framework. This review subsequently provides policy-makers with a checklist of considerations and examples of flexible learning strategies that they might implement or use to monitor an education system.

Policy-makers aiming to develop resiliency in the education system might consider implementing flexible learning strategies that:

- ▶ centralise policies and processes that improve planning, coordination, and communication across government and non-government bodies; expand ICT infrastructure and investment; and establish health and safety guidelines and practices for reopening schools safely, under the **Systems factor**
- ▶ streamline curricula; support modified school-based learning practices; implement a range of distant and blended learning delivery modalities; and utilise different assessment strategies across education system levels for monitoring under the **Teaching and Learning factor; and**
- ▶ focus on enhancing inclusion and equity for vulnerable learner groups (especially refugees, asylum seekers, internally displaced persons, and ethnic minority groups), and further support school leaders and teachers by providing the tools and resources, professional development, and support networks to manage learning modalities and deliver distance learning under the **Agents factor**.

It is anticipated that drawing attention to these strategies and the Policy Monitoring Framework will enable policy-makers to formulate high-level plans for responding to and recovering from this pandemic, and better prepare themselves and their school systems for future education in emergencies.

Policy-makers and researchers seeking to leverage the findings from this study for future work are encouraged to focus on specific Systems, Teaching and Learning, and Agents policy considerations that have been prioritised by policy-makers at national and sub-national levels. This would enable a thorough investigation of mid- to long-term policy impacts, policy documentation and processes, teaching and learning approaches, resource development and education investments, and the specific educational needs of vulnerable learners.

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