Conceptual Framework

for Monitoring Hybrid Learning Delivery
Toward Long-term System Strengthening
and Resilient Education Systems

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About this document

Acknowledgments

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Conceptual Framework for Monitoring Hybrid Learning Delivery Toward Long-Term System Strengthening and Resilient Education Systems

i

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Foreword

This framework builds on a robust foundation of reference material developed prior to and throughout the current Covid-19 pandemic. Distance learning guidance, documentation, and indicators provided by various United Nations agencies, global education organizations, and development partners from around the world provide an excellent starting point and reference. It is accompanied by two documents:

1. Short Guide[1] The Short Guide summarizes key points and lessons learned on monitoring hybrid learning across the Conceptual Framework and Operational Guide.
2. Operational Guide[2] The Operational Guide compiles additional information on sampling design; data collection, analysis, quality assurance, security and protection; and Education Management Information Systems (EMISs). It aims to support ministries of education and key stakeholders around the world to adapt the Conceptual Framework for contexts where hybrid learning may take place.

As a globally oriented framework, this document can be utilized by any ministry of education and contextualized to monitor the specific needs and gaps of learners, staff, administrators, and other key education stakeholders to better address Covid-19 and other emergency recovery efforts in the education sector.

Importantly, there are several steps ministries of education need to take before pursuing hybrid learning models, including establishing an inclusive education community, building on or establishing a strong and resilient Education Management Information System (EMIS), improving or drafting individualized education plans, as well as establishing routine and robust training for school staff and administrators. This is indicated in UNICEF's *Practical Guide to Blended/Remote Learning and Children with Disabilities*, which was published in May 2021.[3]

Once these are in place, education authorities can begin determining which learning modality, whether high-, low-, or no-tech, best suits the needs of learners. This can also provide Ministries of Education and school administrators with an opportunity to use accessible and innovative methods to deliver education, including SMS-based technology, Interactive Voice Response (IVR) or RapidPRO, which can help to provide multiple-choice materials to learners who are learning remotely or unable

1   UNICEF, and EdTech Hub, *Monitoring Hybrid Learning: A Short Guide*, 2022.
2   UNICEF, and EdTech Hub, *Operational Guide for Monitoring Hybrid Learning Delivery Toward Long-Term System Strengthening and Resilient Education Systems*, 2022.
3   UNICEF, *Practical Guide to Blended/Remote Learning and Children with Disabilities*, 2021, pp. 8–10.

to attend school in person. To better understand this, UNICEF ROSA has developed *Guidance on Distance Learning Modalities to Reach All Children and Youth During School Closures: Focusing on low- and no-tech modalities to reach the most marginalized*[4] and *Monitoring Distance Learning During School Closures*.[5]

Due to barriers in remote education delivery related to access and connectivity to the internet, it is critical for ministries of education to utilize multiple approaches to ensure learners have access to the education and materials they need, including by utilizing TV, radio and social media, where and when possible.[6] Additionally, as noted by Save the Children's *Back to Learning: Adapted Local Guidance for Covid-19 Education Facility Reopening*, inclusive planning processes are critical to ensure the success of remote education delivery and must include caregivers to ensure successful delivery and implementation of hybrid learning models.[7]

A key guidance document for this framework is the recent USAID *Roadmap for Measuring Distance Learning: A Review of Evidence and Emerging Practices (2021)*. This document outlines practical steps of planning and designing how distance learning can be delivered through various modalities, and then how they can be monitored and evaluated. This is done by understanding processes related to the ability to reach learners, *engage* with them and understand their learning *outcomes*. This framework expands on this guidance to include various methods to provide a set of indicators that can be used to monitor education in these areas, as well as to understand its effectiveness and ways of measuring its quality with a focus on quality assurance processes of delivery hybrid learning.

4   UNICEF ROSA, *Guidance on Distance Learning Modalities to Reach All Children and Youth During School Closures*, 2020a.
5   UNICEF ROSA, *Monitoring Distance Learning During School Closures: Guidance and Survey Question Bank*, 2020b.
6   Save the Children, *Impact of COVID-19 on Child Poverty, Education, Protection and Health*, 2020a, p. 26.
7   Save the Children, *Back to Learning: Adapted Local Guidance for COVID-19 Education Facility Reopening*, 2020b, p. 8.

Contents

Acronyms and abbreviations

D&A	Data and Analytics
ECARO	UNICEF Europe and Central Asia Regional Office
EMIS	Education Management Information System
ERT	Emergency remote teaching
GPE	Global Partnership for Education
IVR	Interactive Voice Response
KPI	Key Performance Indicator
MEL	Monitoring, evaluation and learning
MELA	Monitoring, Evaluation, Learning and Adaptation
MENA	Middle East and North Africa
MENARO	UNICEF Middle East and North Africa Regional Office
NGO	Non-governmental organization
OECD	Organisation for Economic Co-operation and Development

ROSA	UNICEF Regional Office for South Asia
SDG	Sustainable Development Goals
SMS	Short Message Service
SWOT	Strengths, Weaknesses, Opportunities, Threats
TVET	Technical and Vocational Education and Training
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNICEF	United Nations Children's Fund
UNRWA	United Nations Relief and Works Agency for Palestine Refugees in the Near East
UIS	UNESCO Institute for Statistics
USAID	United States Agency for International Development
WASH	Water, sanitation and hygiene
WCARO	UNICEF West and Central Africa Regional Office

Definitions

In-person learning

In-person learning is a traditional approach where teachers deliver curriculum to learners live and in person in learning centers.

This could include **blended learning**, which is defined here as the use of technology within teaching in the classroom (tablets with teachers etc).[8]

Monitoring in-person learning

Monitoring in-person learning, as suggested in its title, is a traditional approach in which teachers and school administrators monitor education delivery and learning in designated learning centers.

Remote learning

Remote learning is a method of learning where the teacher and learner are not physically present together in an academic institution for reasons related to accommodation and / or in response to emergency situations, such as the Covid-19 pandemic. Remote learning can be delivered through a range of delivery channels including online learning management platforms, physical learning packs, TV, radio, and devices without internet connectivity. In the current context, a frequently used term is 'emergency remote teaching' (ERT).[9] With the Covid-19 pandemic persisting, it is likely that emergency approaches will evolve into permanent / long-term solutions.

Monitoring remote learning

Monitoring remote learning, as suggested in its title, is an approach in which teachers and school administrators monitor education delivery and learning of learners away from the traditional classroom. Monitoring remote learning involves a responsive solution designed to meet the context in which remote learning is being delivered.[10]

Hybrid learning

Hybrid learning encompasses both remote and in-person experiences in the delivery of education content. Hybrid learning here is distinguished from blended learning, as defined above. In the context of this publication, hybrid learning is amorphous—recognizing that at any given moment in any context, learning pathways and options to deliver learning opportunities will differ and change.

Monitoring hybrid learning

Monitoring hybrid learning in the context of the ongoing Covid-19 pandemic requires a flexible approach that evolves to meet the delivery of education content and the options available in any given context. This could include rapidly evolving approaches to monitor temporary shifts of instructional delivery and the potential for a heterogeneous approach to learning across the catchment area.

8   CommonWealth of Learning, *Open and distance learning: key terms and definitions*, 2015.
9   Australian Council of Education Research, *Remote Learning: Rapid Literature Review*, 2020, p. 2.
10   Charles Hodges et al., 'The difference between emergency remote teaching and online learning,' 2020.

Executive summary

When disruptions to education take place, options to provide learning opportunities will differ and change. Hybrid learning attempts to make use of the most effective resources possible for any given learning objective, whether those resources sit online or offline. In the wake of the Covid-19 pandemic, monitoring hybrid learning can be used to inform adjustments to future iterations of the initiative and, on a macro level, to generate high-level insights for government decision-makers on effective hybrid learning approaches.

This report consists of 163 indicators based on a review of existing and emerging literature relevant to hybrid learning. Of these 163 indicators, a shortlist of 12 indicators essential for monitoring hybrid learning is presented below. While the addition of other indicators and contextualization will be necessary, this shortlist serves as a starting point for decision-makers seeking to monitor hybrid learning initiatives.

Prior to identifying which indicators to use, monitoring goals should first be defined. Goals can be framed around the answers to high-level questions such as: *Why is hybrid learning being measured? What are the limitations in measuring hybrid learning?* In general, less can be more when identifying what to measure in a monitoring approach; this 'lean approach' can reduce associated time and costs spent on data collection and help to ensure that data that is collected is used.

This framework is particularly relevant and timely as education authorities face the challenge of delivering and monitoring the implementation of a wide range of learning approaches during the Covid-19 pandemic. The Conceptual Framework and indicators are designed to be contextualized and modified based on the needs of each country or local area education authority feeding into their national Education Management Information System (EMIS). As part of the contextualization process, it is important to focus on equity wherever possible. Using an equity lens prevents hybrid learning from exacerbating existing inequalities in education.
This framework is by no means definitive. UNICEF sees this contribution as a global public good and welcomes feedback and contributions from the global community on the Conceptual Framework and indicators to ensure this work remains relevant and applicable to a wide range of contexts.

Table 1. *Shortlist of hybrid learning indicators.*

Code	Indicator	Attribute*	Indicator Type*
I02	Teachers with knowledge and understanding of required Information and Communications Technology	Characteristic	Structural
I06	Schools / institutions equipped to deliver remote learning	Reach	Structural
I41	Enrolled learners with access to appropriate space for home-based learning	Reach	Process
I43	Learners with access to internet connection for education purposes	Reach	Process
I50	Learners with parents / caregivers able to support home-based learning	Characteristic	Process
I54	Learners using world-class digital learning solutions to build skills	Engagement	Outcome
I85	Teachers who received in-service training in the last 12 months by type of training	Effectiveness and Quality Assurance	Process
I92	Teachers able to deliver hybrid learning	Effectiveness and Quality Assurance	Outcome
I120	Average time spent by learners in learning activities	Engagement	Process
I122	Learners showing an improvement in learning	Effectiveness and Quality Assurance	Outcome
I123	Learners showing improvement in digital competencies	Effectiveness and Quality Assurance	Outcome
I148	Government policies are in place to guide hybrid learning	Effectiveness and Quality Assurance	Structural

*Please refer to Section 3 below on attributes, indicator types, and disaggregations for more information.

1. Introduction

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1. Introduction

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1.1. Background

In the past year, over 1.6 billion learners globally have been affected by school closures due to the Covid-19 pandemic. With the sudden halt of basic service delivery — education, health, nutrition, water, sanitation and hygiene (WASH), and social protection — the immediate, medium and long-term impacts of Covid-19 are unprecedented, especially for vulnerable and disadvantaged populations and communities. The joint UNESCO / UNICEF / World Bank *Overview of findings from a survey of ministries of education on national responses to Covid-19* highlights that, on average, 77 days of instruction were missed in low-income countries and 23 days were missed in high-income countries for the 2020 school year.[11]

However, many schools have reopened and / or adopted a hybrid model that combines in-person and remote learning. In parallel with the rise of hybrid learning, decision-makers must ensure that they have the systems and capacities in place to monitor education delivery, learning, and skills development across a range of contexts. According to the 2021 UNESCO-UNICEF-World Bank-OECD survey, only one out of three countries have a regular monitoring system in place for hybrid learning. Among low- and lower-middle-income countries, this estimate decreases to one out of four countries.[12] However, against the backdrop of Covid-19 and school closures, monitoring hybrid learning is even more relevant as education providers grapple with the challenges of evolving circumstances and seek to build back better, more resilient, education systems. Specifically, further information on how to monitor hybrid learning, compared to traditional monitoring approaches, is needed.

1.2. Objective

The objective of this project is to generate the information needed to answer five main categories of questions pertaining to hybrid learning. The questions below can be used to develop monitoring goals and guide an overarching monitoring approach.

1. **Who** are the children reached and not reached or at risk of not being reached by any one of a particular form of hybrid learning? What are the key variables (e.g., age, sex, wealth quintile, ethnic group, religion, category of vulnerability) determining the educational status of a given child being left out of hybrid learning?
2. **Where** are the children not accessing any form of hybrid learning? In which settings (schools, homes, community resource centers, etc.) and or residence area (urban vs rural) is the most effective learning taking place? What are their geographic locations (which may change from one year to another) considering lockdown and / or pandemic / health emergency contexts?

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11 UNESCO Institute for Statistics, *What have we learnt? Overview of findings from a survey of ministries*, 2020, p. 15.
12 These numbers were calculated from the answers to Question 4 of Module 10 in the Joint Survey on National Education Responses to Covid-19 (Round 3). The question focuses on monitoring digital learning; we assume that governments that did not monitor digital learning regularly also did not monitor hybrid learning.

3. **Why** are children not reached by any or no form of hybrid learning delivery modes (high / low / no tech)? If they are reached, why are they not engaging? If they are engaging, why are they not learning?[13] Why might learners have a preference for a particular learning modality if they have more than one choice?

4. **What** is the interplay of barriers (socio-cultural / economic, demand-side, supply-side) that determine a child's participation in hybrid learning? Which barriers prevent a child's access to hybrid learning platforms and capacity to effectively achieve learning objectives? What leads to a child not being reached despite national efforts to reach all children? What are the changes in a child's learning gain or loss due to emergencies such as Covid-19 in general? More importantly, how much are children accessing and participating effectively in any one of the delivery modes of hybrid learning made available by the ministry of education or any education service provider? What is the preferred modality and frequency of usage by children and how are they using it? What content are learners receiving remotely? Is it relevant, age-appropriate? Is it helping children to progress in their learning?

5. **How** are children engaging with hybrid learning to ensure that effective learning is taking place? How are they being supported by teachers if there is teacher engagement — i.e., continued engagement, feedback mechanisms? To what extent can monitoring data be used to make necessary adjustments to ongoing education programs and / or learning processes with the design of specific interventions targeted towards children with learning gaps (i.e., remedial measures and or classes, community-based learning support mechanisms)? How do we ensure online / remote learning is equitable and of good quality? How can we nurture local eco-systems to enhance quality, contextualization, and sustainability of remote learning?[14] How do we ensure online / remote learning is safe for children? How can the privacy and safety of participants be protected during monitoring?

This Conceptual Framework and accompanying Operational Guide[15] offer practical solutions to generate the up-to-date evidence needed at country level to gauge the effectiveness and appropriateness of multiple pathways to hybrid learning.

The package will guide the generation of the required data on the overall reach of hybrid learning and the access and effectiveness of learning options made available by the education system. In addition, on the understanding that the number of learners who potentially could be reached by hybrid learning may have been overestimated, a benchmarking mechanism building on the work done by the UNICEF Data & Analytics Section on the potential reach of hybrid learning policies will serve as a validity range for data verification and triangulation.[16]

1.3. Approach

In the spirit of cooperation in the face of enormous development challenges related to the Covid-19 pandemic, UNICEF has developed a set of global public goods on monitoring hybrid learning delivery. The work builds on a growing body of research and real-world practical experience to make a contribution to the literature in an area of critical importance.

This Conceptual Framework and Operational Guide[17] is informed by an extensive literature review and guided by ad hoc contributions from, and consultations with, a Reference Group of experts to ensure the content, scope, and impact of the framework is wide-reaching and aligned with global perspectives and best practice in the field of monitoring education and learning (MEL).

1.4. Audience

The Conceptual Framework and Operational Guide aim to support national policy planners and education actors[18] in monitoring and improving their policy / program responses. In addition, the framework can inform strategies for education systems to become more flexible by providing options for expanding multiple pathways, reaching children who may not be reached by formal face-to-face schooling and addressing individual learning needs.

The information in this Conceptual Framework can be adapted by countries from all regions of the world to fit their unique education contexts.

13   Tom Kaye, Caspar Groeneveld, and Amreen Bashir, *Monitoring Distance Education: A Brief to Support Decision-Making in Bangladesh and Other Low- and Lower-Middle Income Countries*, 2020.
14   Alassane Ouedraogo, 'Quality assurance and monitoring of online/remote learning platforms,' 2021.
15   UNICEF, and EdTech Hub, *Operational Guide for Monitoring Hybrid Learning Delivery Toward Long-Term System Strengthening and Resilient Education Systems*, 2022.
16   UNICEF, *COVID-19: Are children able to continue learning during school closures?*, 2020a.
17   UNICEF, and EdTech Hub, *Operational Guide for Monitoring Hybrid Learning Delivery Toward Long-Term System Strengthening and Resilient Education Systems*, 2022.
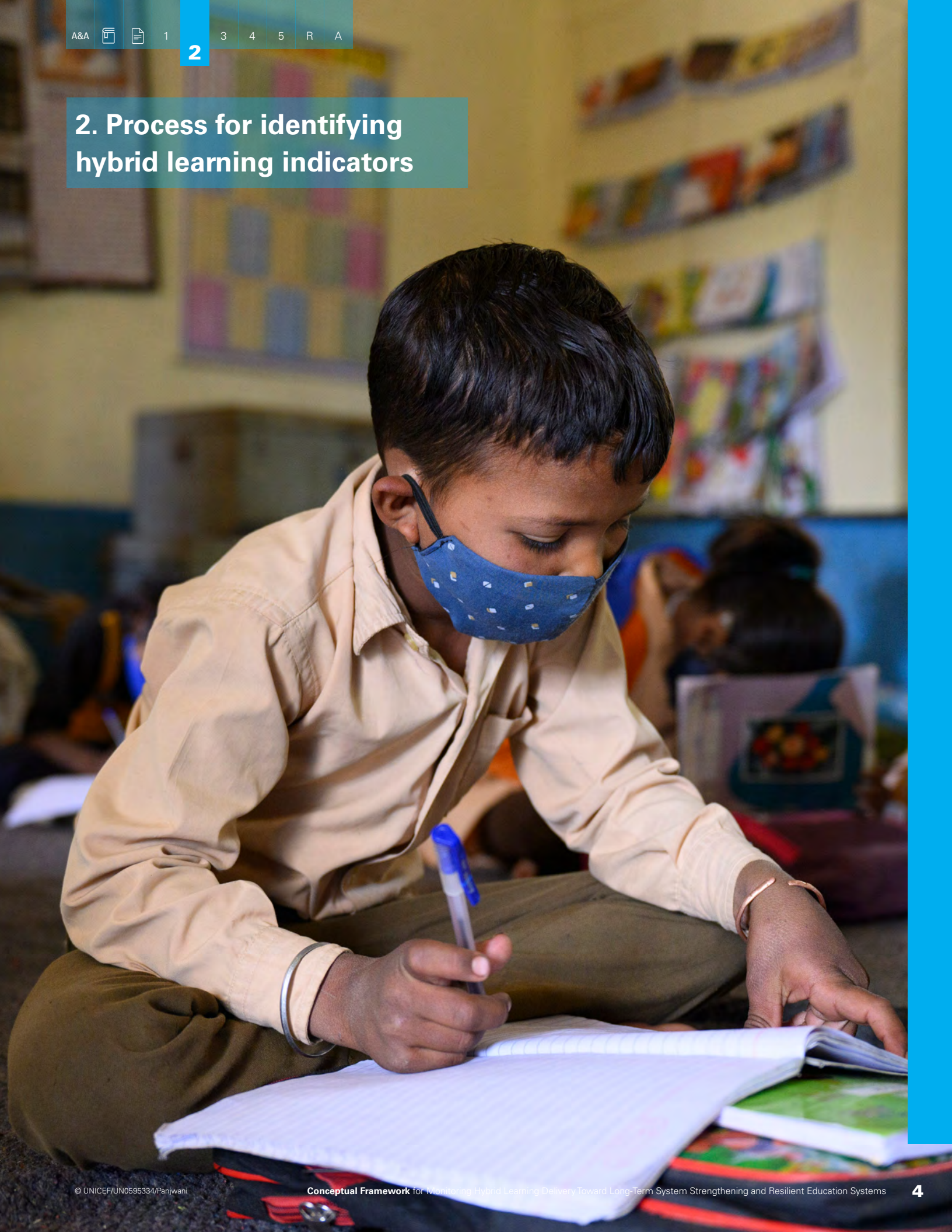18   Education actors include school administrators and staff, national and international non-governmental organizations (NGOs), the donor community and private sector supporting the direct or indirect delivery of education.

2. Process for identifying hybrid learning indicators

2. Process for identifying hybrid learning indicators

Challenges in education delivery and outcomes are exacerbated by emergency situations like the Covid-19 pandemic. To understand the situation on the ground, national governments, education clusters, UN agencies, and donor organizations monitor indicators related to the educational experience of learners, teachers, administrators, and education ministries around the world. These indicators may exist in ongoing monitoring efforts, including those defined in Sustainable Development Goal 4.[19, 20]

To identify a holistic and realistic set of hybrid learning indicators, decision-makers should engage in two steps:

1. Define monitoring goals
2. Determine what will be measured.

Step 1: Define monitoring goals[21]

In defining relevant monitoring goals, it is most critical to answer these basic questions:

- Why is hybrid learning being measured?
- What are the limitations of measuring hybrid learning?
- How will the data be used?
- Who will be using the data?
- What are the enabling factors for the systematic integration of hybrid learning metrics into the national system for education statistics?

Answering these questions will ensure monitoring efforts are focused and relevant and that the efforts support sound data-driven decision-making at appropriate levels of the education system and define well-articulated steps for system strengthening of the overall education evidence generation system. The answers to these questions will also help in focusing on the unit of analysis, which could be the school or the teacher / learner / parent and/or caregiver. This framework takes a broad approach, proposing indicators relevant to both school and teacher / learner as the unit of analysis.

For direct education providers, including teachers in formal and non-formal contexts, and the schools and training centers, data should inform both teaching and learning, program management and education-related policies. At the same time, monitoring data will help to promote the adaptability and sustainability of any education initiative. For those sponsoring education programming, including education institutions, policy-makers and donors, monitoring data should generate new knowledge, inform research and evaluations and support the costing, scaling, and replicability of hybrid learning models.[22]

Ultimately, UNICEF believes that monitoring goals should center on ensuring the best interests of the child and adolescent are being met. The decision and modalities for the provision of education and the eventual reopening of schools, "should be guided by a balance between the risk of outbreaks and the spread of Covid-19 in children and adolescents, teachers and school staff, families and the community, in addition to the benefits on student welfare and learning."[23]

19   UN, 'SDG 4: Quality Education,' 2020. https://sdgs.un.org/goals/goal4
20   OECD, *The impact of COVID-19 on student equity and inclusion: Supporting vulnerable students during school closures and school re-openings*, 2021.
21   USAID, *A Roadmap for Measuring Distance Learning: A Review of Evidence and Emerging Practices,* 2021.
22   Kevin Hempel and Nathan Fiala, *Measuring Success of Youth Livelihood Interventions: A Practical Guide to Monitoring and Evaluation*, 2012.
23   UNICEF, *Guidance notes on reopening schools in the context of COVID-19 for ministries of education in Latin America and the Caribbean,* 2020b.

Step 2: Determine what will be measured[24]

The process of selecting indicators should be guided by a principle that sometimes *less can be more*. And while it is tempting to propose a full slate of indicators that will measure the minutiae of education through the pandemic, a conscious effort was made to incorporate careful and deliberate recommendations to capture enough data, not all. This was bolstered by an understanding that education providers are taxed more than ever as they grapple with the challenges of evolving circumstances in which education is more important than ever.

It is also essential to highlight the value of understanding and addressing the root causes of inequity within a monitoring initiative. Focusing on equity helps to ensure that hybrid learning does not exacerbate existing inequalities in education. Data collection should be conducted with a thorough understanding of the demographics of the sample, and whether this is representative of the national population. Further, monitoring should contribute to insights about promoting equity in current and future iterations of the implemented initiative. For example, infoDev and World Bank (2005) suggest that "results should be prepared in a manner that allows expansion of the program to additional marginalized groups (by caste, location and other language groups)."[25]

These actions can promote access to education for all children, particularly those who suffer the worst deprivations in society.[26] The right to education is non-negotiable, even in the midst of an emergency. Therefore it is essential to ensure that data is sensitive and responsive to the needs of those it intends to serve, in an inclusive manner — in this case, all learners or potential learners.

The following section presents an overview of how monitoring hybrid learning can be organized and categorized: by attributes, indicator types, and disaggregations.

Attributes structure the framework to ultimately establish whether learners are able to access quality hybrid learning. They cover four layers of hybrid learning design and implementation: characteristics of the hybrid learning initiative and target population; reach (availability and access of the initiative); engagement; and effectiveness and quality assurance.

Indicator types distinguish data collection efforts based on whether they measure inputs, activities, outputs and / or how outputs contribute to the achievement of outcomes (i.e., structural, process, and outcome indicators).

Disaggregations or subgroups, enable decision-makers to uncover additional trends and detailed information on teaching and learning during the monitoring process. For example, a decision-maker may choose to disaggregate their data by gender to identify whether gender equity has been achieved in the implementation of their programming.

Section 4 links to the full list of hybrid learning indicators. Each indicator is tagged with an attribute, indicator type, and disaggregation(s) to support decision-makers with identifying the most salient set of indicators.

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24   USAID, *A Roadmap for Measuring Distance Learning: A Review of Evidence and Emerging Practices,* 2021.

25   Daniel A. Wagner et al., *Monitoring and Evaluation of ICT in Education Projects: A Handbook for Developing Countries,* 2005.

26   UNICEF, *Equity: For every child to have a fair chance*, 2018.

3. Attributes, indicator types, and disaggregations

3. Attributes, indicator types, and disaggregations

3.1. Attributes

Characteristics capture key information on the institutions and the hybrid learning program(s) deployed, as well as the teachers and learners. This might include the following indicators.

Code	Indicator	Attribute	Indicator type
I02	Teachers with knowledge and understanding of required Information and Communications Technology	Characteristic	Structural
I50	Learners with parents / caregivers able to support home-based learning	Characteristic	Process

Figure 1. Hybrid learning attributes.

Attributes of the teacher or learner are closely linked with an equity perspective which will be described below. Data on school infrastructure and program options also provide insight into equity as they are related to the availability and distribution of resources.

Reach intends to assess the accessibility of hybrid learning opportunities, along with the availability of and access to technology and or any relevant materials to deliver and engage in learning. Availability covers the presence of hybrid learning and teaching modalities, materials, and resources, while access covers the extent to which students are able to access technologies and materials in school and at home for learning. Considered here is also the range of connectivity — electricity, internet, cellular infrastructure (and associated data costs) — and the learners' access to education content as delivered by their respective institution or education provider. This might include the following indicators.

Code	Indicator	Attribute	Indicator type
I06	Institutions equipped to deliver remote learning	Reach	Structural
I41	Enrolled learners with access to appropriate space for home-based learning	Reach	Process
I43	Children with access to internet connection for education purposes	Reach	Process

Engagement aims to measure how learners, teachers, administrators, and parents / caregivers participate in education programming and how a feedback loop mechanism can be used to track individual learner progress and improve the learning process. Questions around engagement seek answers to better understand how teachers and learners are engaging in hybrid learning. This might include the following indicators.

Code	Indicator	Attribute	Indicator type
I54	Percentage of children and young people using world-class digital learning solutions to build skills	Engagement	Outcome
I120	Average time spent by learners in learning activities	Engagement	Process

The indicators in this area of the Conceptual Framework will be highly contextual and it is expected that education authorities will make significant modifications to the general suggestions to ensure relevance to local contexts.

Effectiveness and Quality Assurance aim to understand factors that drive changes in learning, and whether those changes are positive, negative, or no change is present. Other measures of effectiveness can include socio-emotional outcomes and secondary benefits of education (e.g., reduced child marriage and drop-out, democratic participation).[27]

In addition, these indicators assess the process of determining whether or not hybrid learning policy, design, and information management are sufficient in meeting the educational goals as outlined in national education policies, and standards.[28] This includes responding to key questions:
- How should we understand quality assurance when it comes to online / remote learning?
- What measurement tools do we have to monitor and evaluate the effectiveness of online / remote learning?
- What challenges are we facing in terms of quality assurance measurements?

In doing so, the framework suggests indicators across a range of sub-attributes of effectiveness and quality assurance, including:

Code	Indicator	Attribute	Indicator type
I85	Teachers who received in-service training in the last 12 months by type of training	Effectiveness and Quality Assurance	Process
I92	Teachers able to deliver hybrid learning	Effectiveness and Quality Assurance	Outcome
I122	Percentage of students showing an improvement in learning	Effectiveness and Quality Assurance	Outcome
I123	Percentage of students showing improvement in digital competencies	Effectiveness and Quality Assurance	Outcome
I148	Government policies are in place to guide hybrid learning	Effectiveness and Quality Assurance	Structural

27 UNESCO et al., *Methodological Guidelines for Education Sector Analysis*. Volume 1, 2014.
28 These standards include qualification and certification frameworks and standards, and qualification assurance standards.

3.2. Indicator types

Indicators within the framework capture key information on commitments, efforts, and results. As such, indicators have been classified as structural, process, and outcome.[29]

Structural indicators help to determine if legal instruments and institutional arrangements and / or mechanisms are present in a country and if they support hybrid learning. This section includes availability of resources to ensure effective deployment of hybrid learning.

Structural indicators aim to understand the specific legal instruments, such as laws, policies, and procedures, that are in place to support education authorities in implementing hybrid learning. These indicators demonstrate a commitment from the national government in terms of policy and legal infrastructures in addition to the resources required to work towards education delivery that benefits both in-person and remote learning. Structural indicators also aim to identify gaps in national hybrid learning policy frameworks and strategies to support decision-makers in developing evidence-based decisions that account for the needs of all learners.

In the context of hybrid learning, structural indicators could include:

Code	Indicator	Attribute	Indicator type
I02	Teachers with knowledge and understanding of required Information and Communications Technology	Characteristic	Structural
I06	Institutions equipped to deliver remote learning	Reach	Structural
I148	Government policies are in place to guide hybrid learning	Effectiveness and Quality Assurance	Structural

Process indicators measure how a ministry of education transforms their hybrid learning commitments into effort toward the desired results.

Process Indicators seek to measure the success and shortfalls of the implementation of policies and procedures that have been established by national governments. By setting goals and targets related to countries' national policies and strategies on hybrid learning, education authorities can use process indicators to understand the progress that has been made on specific procedures. Importantly, these indicators must be measurable and use specific targets against nationally, regionally, and internationally agreed benchmarks to guide all the actors and stakeholders' efforts in delivery of quality education. This is because the context and situations in all countries that apply these indicators will be different.

In the context of hybrid learning, process indicators could include:

Code	Indicator	Attribute	Indicator type
I41	Enrolled learners with access to appropriate space for home-based learning	Reach	Process
I43	Children with access to internet connection for education purposes	Reach	Process
I50	Learners with parents / caregivers able to support home-based learning	Characteristic	Process
I85	Teachers who received in-service training in the last 12 months by type of training	Effectiveness and Quality Assurance	Outcome
I120	Average time spent by learners in learning activities	Engagement	Process

29   Right to Education, '3.1 Select Structural and Process Indicators,' 2015. https://www.right-to-education.org/monitoring/guide/31-select-structural-and-process-indicators.

Outcome indicators document results around individual and collective growth that reflect the achievements or shortfalls of hybrid learning at local, subnational, national, regional, and international levels.

Outcome indicators capture achievements of learners, teachers, institutions, and programs that reflect the successes of hybrid learning in a given context. These indicators demonstrate the result of one or more process indicators.

In the context of hybrid learning, outcome indicators could include

Code	Indicator	Attribute	Indicator type
I54	Percentage of children and young people using world-class digital learning solutions to build skills	Engagement	Outcome
I92	Teachers able to deliver hybrid learning	Effectiveness and Quality Assurance	Outcome
I122	Percentage of students showing an improvement in learning	Effectiveness and Quality Assurance	Outcome
I123	Percentage of students showing improvement in digital competencies	Effectiveness and Quality Assurance	Outcome

3.3. Disaggregations

When monitoring hybrid learning, it is crucial to disaggregate the data collected for each indicator to yield detailed and relevant data. Disaggregation enables a decision-maker to more closely track priorities and existing gaps associated with hybrid learning. Further, measuring equity in education participation and learning attainment requires granular, disaggregated data. Key dimensions to disaggregate data are listed below:

- Gender
- Level of education
- Location (school / institution, home)
- Geography (province, district, state, etc.)
- Learning platform (radio, TV, dedicated learning platform, shared learning platform)
- Wealth quintile

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For instance, the indicator "Learners with knowledge and understanding of required Information and Communications Technology" can be disaggregated by gender and level of education. A decision-maker examining this indicator can identify trends, differences and similarities across girls and boys, or primary and secondary education levels with this disaggregation.

4. List of hybrid learning indicators

4. List of hybrid learning indicators

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There are 163 suggested indicators included in this Conceptual Framework, organized around indicator type, attribute, unit, etc. The indicator list is a living document that is routinely updated and can be accessed here.

Using absolute numbers as a unit of measure can provide an understanding of size and scope of the indicator in question whereas percentage indicates coverage of that particular indicator. Based on the context, either one or both may be relevant. The use of percentage as a unit of measure presumes that the denominator value for that indicator is known.

Limitations

Taken individually and as a whole, the authors recognize that the proposed indicators in the framework do not yet take into account the complex realities in which multiple learning modalities are used at any given time. The interplay between learning modalities and the added (or subtracted) value of a 'blended' approach should be monitored and evaluated.

5. Next steps

5. Next steps

Better data can and will lead to better decisions on how education is organized, budgeted, and delivered. The authors recognize contextualization as a significant and critical step to the successful operationalization of this framework. In a prolonged emergency, national and local contexts will change over time and vary as the institutions that deliver and the communities that benefit from education struggle with the changing realities of the pandemic.

In order for the recommendations and suggestions in this document to be applied meaningfully and effectively, it is most important that education authorities reflect critically to ensure any approach taken to monitoring meets local needs and purposes.

5.1. Contextualization

The checklist below provides guidance on how ministries of education can use indicators to support their specific needs and contexts.[30]
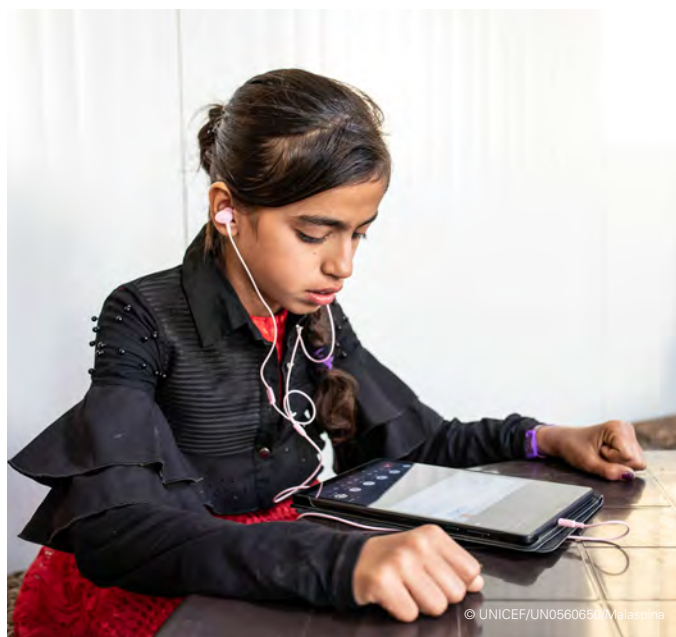
© UNICEF/UN056065/Malaspina

1. **Harmonize indicators across the government**
   While the ministry of education may be the lead agency driving the monitoring initiative in the education sector, other ministries and agencies within the government may be collecting relevant data to track progress in other areas. Similarly, ministries of education may be utilizing multiple indicators that track the same age group or disaggregation. To streamline processes and best understand national progress on hybrid learning, it is important for national governments to harmonize the indicators that will be used during emergency situations. This may come with some trade-offs, but the results of the harmonization should be a more efficient and holistic approach to monitoring, which is sustainable even in the short term.

2. **Identify a realistic set of indicators with clear policy implications**
   Especially in response to unforeseen events, it is important for education authorities to clearly understand the intention of an indicator and what is being measured. Linking indicators to specific visions of a country's national (or local) education policy will create a more comprehensive approach to monitoring hybrid learning. It is often most difficult to decide what does not make the cut. However, an overly ambitious set of indicators will overwhelm the system. It is best to start with less and build in indicators, ensuring that there is a clear purpose in every indicator selected.

3. **Develop locally relevant metadata for all indicators**
   A key step in contextualization is developing robust locally relevant metadata, including definition, data sources, method of computation, point of analysis, and limitations. Once complete, the indicator framework should be popularized amongst the education community to ensure full understanding and appropriate use. The importance of a shared understanding cannot be overstated as it ensures results of the monitoring efforts will be appropriately interpreted in data-driven decision-making.

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30   The following checklist was adapted from the Sustainable Development Solution Network's *Indicators and a Monitoring Framework for the Sustainable Development Goals*, 2015.

4. **Allow for high-frequency, flexible monitoring during emergency situations**

In response to pandemics, natural disasters, or other emergency situations, timeliness in data collection, processing, and use is critical for decision-making and response. Given the fluid and changing environment of the Covid-19 pandemic, a regular review of the indicator framework will ensure that essential data is being captured to inform key decisions.

5. **Build consensus on data collection from national education information systems**

To make decisions to plan for hybrid learning and respond to the current context, it is important for national education authorities to agree on how indicators will be measured. When possible, education planners should adapt recommended indicators to fit the context of existing indicators for which the government is already collecting data.

6. **Establish data sources**

For all indicators, education authorities should identify all sources of data from reports, information systems or United Nations publications. In some cases, data sources may not be immediately available, however, it is important to prioritize the consolidation of these new data sources for more efficient and effective dissemination.

7. **Disaggregate data**

Separating indicators into different subgroups, also known as the process of disaggregation, enables more targeted tracking of education priorities. Similarly, this allows for more efficient tracking of gaps, inequalities and achievements of national hybrid learning goals. Disaggregation can be by location (urban or rural), age (for example, ages 5–10), wealth quintile, etc.

8. **Apply indicators to broader contexts**

Due to the evolving nature of emergency situations, one indicator cannot track progress against every facet of hybrid learning. Therefore, some indicators will be broader in scope and will aim to measure how well governments are responding.

5.2. Operationalization

Once indicators have been contextualized, the unit responsible for monitoring must develop a realistic and achievable plan to operationalize the monitoring framework. This involves determining how data will be collected and deciding on the most appropriate methods and approaches for measurement, the responsible stakeholders and the funding required to operationalize and sustain the monitoring effort.

In many cases, the hardest-to-reach are often the least visible during a monitoring exercise. This gap is due to limitations in access to phones, literacy rates, and other factors that are linked to data collection processes. Decision-makers must therefore ensure that monitoring efforts are able to adequately reach the most marginalized (including out-of-school children, children in rural areas, refugee children).[31] Recommendations to effectively operationalize the framework in an equitable and inclusive manner include the following.[32]

1. *Integrate in-person and remote approaches*, use multimodal interfaces, and employ mixed methods to measure distance learning. Integrating in-person and remote data collection (e.g., in-person testing and remote interviews), using multimodal interfaces (e.g., phone calls and SMS surveys), and mixed-methods approaches (e.g., interviews, surveys, and photographs) helps promote greater participation and leads to more accurate results.
2. *Encourage innovative solutions* to measure reach, engagement, and outcomes during a quick pivot to distance learning, while also developing high-quality monitoring, evaluation and learning (MEL) strategies for the longer term.
3. *Design equitable monitoring and evaluation approaches* and conduct systematic equity analyses of distance learning initiatives. For example, non-formal education providers and non-governmental organizations (NGOs) may be well placed to reach the most marginalized through existing programming.

More detailed suggestions for operationalization of the conceptual framework can be found in the accompanying Operational Guide,[33] which discusses topics ranging from data collection to EMIS integration to ethics considerations.

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31   Tom Kaye, Caspar Groeneveld, and Amreen Bashir, *Monitoring Distance Education: A Brief to Support Decision-Making in Bangladesh and Other Low- and Lower-Middle Income Countries*, 2020.

32   USAID, *A Roadmap for Measuring Distance Learning: A Review of Evidence and Emerging Practices*, 2021.

33   UNICEF & EdTech Hub, *Operational Guide for Monitoring Hybrid Learning Delivery Toward Long-Term System Strengthening and Resilient Education Systems*, 2022.

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Annex

Annex

SWOT Analysis

A generalized conceptual framework aims to provide guidance to education authorities in the monitoring of education in a variety of conditions. Hybrid learning was selected as the focus for this conceptual framework as it provides the widest possible applications in a changing education landscape.

An analysis with the strengths, weaknesses, opportunities, and threats of monitoring in-person learning and remote monitoring frameworks can be found below.

Monitoring Hybrid Learning

Strengths (Advantages)
- Flexibility and adaptability to an ever-changing education landscape and the requirement to monitor the delivery of learning opportunities over time and space.
- Conducive to emergency situations, like the Covid-19 Pandemic.
- Fosters teamwork, participation, and communication.
- Supports the adoption of virtual instruction.
- Supports hybrid models for student and trainee onboarding.

Weaknesses (Disadvantages)
- The fluid nature in which education may be delivered over time and across a diverse area, creates challenges in establishing a standardized monitoring framework.
- There is a lack of proven tools and techniques, especially in challenging environments and circumstances, to effectively monitor learning with accuracy and confidence.
- Channels of delivery of remote learning are often owned and managed by the private sector, making it difficult to ensure consistent data collection and visibility.
- Limited information systems make connecting with learners, parents / caregivers a challenge.
- Difficult to reach some learners consistently, where connectivity is limited.
- Remote learning methods, such as TV and radio programming, may be more challenging to monitor.
- Digital literacy may affect results.
- More effort may be spent in finding the results and quality of data necessary.

Opportunities
- New strategies to monitor learning for remote learners can energize stakeholders.
- Supports monitoring and evaluation (M&E) through crisis scenarios.

Threats (Ongoing challenges)
- Unclear vision and limited buy-in
- Accelerated loss of staff able to facilitate monitoring and evaluation (M&E) because of challenges in adapting to virtual work
- Budgetary shortfalls that affect education response, including dependency of M&E systems on donor funding
- Absence of institutionalization of M&E systems to be more adaptive to flexible ways of delivering education

Monitoring In-Person Learning

Strengths (Advantages)

- Utilizes school infrastructure for efficient data collection.
- Provides a standard, common denominator for monitoring activities.

Weaknesses (Disadvantages)

- Lacks access to monitor learning and learning environments out of school

Opportunities

- Builds on existing data collection, data management systems and processes in place.
- Provides opportunity to more easily collect data on teaching / learning processes, learner achievement, teacher / learning behavior.

Threats (Ongoing challenges)

- The current Covid-19 pandemic has highlighted gaps in the ability of education systems to collect data away from and out of the structures of formal in-person instruction
- Prolonged school closures and limited in-person learning limits effectiveness of an in-person learning monitoring framework.

Monitoring Remote Learning

Strengths (Advantages)

- Helps to understand learners' progress anytime, anywhere, and anyplace.
- Supports understanding of how learners interact with new and evolving ways of learning.
- Assessment results are immediate.
- Leveraging technology may reduce recurrent costs of M&E .

Weaknesses (Disadvantages)

- A remote learning monitoring framework may not be responsive to the changing reality of a fluid education environment, where approaches to delivery may change week to week.
- Limited information systems make connecting with learners, parents / caregivers a challenge.
- There is a lack of proven tools and techniques — especially in challenging environments and circumstances to effectively monitor learning with accuracy and confidence.
- Channels of delivery of remote learning are often owned and managed by the private sector, making it difficult to ensure consistent data collection and visibility.
- Difficult to reach some learners consistently, where connectivity is limited.
- Remote learning methods, such as TV and radio programming may be more challenging to monitor.
- Digital literacy may affect results.
- More effort may be spent in finding the results and quality of data necessary.

Opportunities

- Opportunity to standardize the M&E process to meet the needs of all learners, teachers, institutions.
- New opportunities to monitor lifelong learning programs.

Threats (Ongoing challenges)

- Limited technical capacity and technological infrastructure may impact the execution of and results from monitoring hybrid learning.
- New approaches to monitoring may impact long-standing data collection practices.
- Monitoring remote learning may be labor-intensive and limit the time of key actors in fulfilling core responsibilities.
- Without clear communication strategies in place, parents/caregivers may resist monitoring activities