



Monitoring Hybrid Learning

A Short Guide

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for every child

About this document

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Abbreviations and acronyms

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D&A	Data and Analytics
DHS	Demographic and Health Surveys
EAGLE	Education Analysis for Global Learning and Equity
ECARO	UNICEF Europe and Central Asia Regional Office
EMIS	Education Management Information System
GPE	Global Partnership for Education
LACRO	UNICEF Latin America and Caribbean Regional Office
MEAL	Monitoring, Evaluation, Accountability and Learning
MEL	Monitoring, evaluation and learning
MELA	Monitoring, Evaluation, Learning and Adaptation

MENARO	UNICEF Middle East and Northern Africa Regional Office
MICS	Multiple Indicator Cluster Surveys
OECD	Organisation for Economic Co-operation and Development
ROSA	UNICEF Regional Office for South Asia
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
WCARO	UNICEF West and Central Africa Regional Office

1. Introduction



1. Introduction

1.1. Background and objectives

This short guide on monitoring hybrid learning 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. It is accompanied by two documents, which build on a robust foundation of reference material developed prior to and throughout the current Covid-19 pandemic:

- 1. Conceptual Framework¹** The Conceptual Framework contains a comprehensive list of 163 indicators linked to hybrid learning priority areas. It is a globally oriented framework that can be used by ministries of education to monitor the needs of learners, staff, administrators, and other key education stakeholders engaged in hybrid learning.
- 2. Operational Guide²** 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.

According to the 2021 UNESCO-UNICEF-World Bank-OECD survey,³ 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.⁴ 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.

1.2. Definition of hybrid learning

Hybrid learning is flexible and can be amorphous. 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 they sit online or offline.⁵

The Broadband Commission for Sustainable Development's Working Group on Digital Learning⁶ highlights that:

“The precise nature of hybrid learning will vary significantly depending on context, circumstances and requirements.”

Hybrid learning differs from blended learning, which is defined in this set of documents as the use of technology within teaching in the classroom (e.g., tablets with teachers).

The World Bank highlights three features of hybrid learning:⁷

- 1. Where?** Hybrid learning is a combination of remote and in-person experiences.
- 2. When?** Hybrid learning can be synchronous, asynchronous, or a mix of both.
- 3. How?** This can vary by the level of engagement, amount of learner participation, and direction of the communication (e.g., one-way, bi-directional or multi-directional).

1 UNICEF, and EdTech Hub, *Conceptual Framework for Monitoring Hybrid Learning Delivery Toward Long-Term System Strengthening and Resilient Education Systems*, 2022.

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

3 UNESCO Institute of Statistics, 'Covid-19 Education Response', 2021. <http://covid19.uis.unesco.org/joint-covid-r3/>.

4 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.

5 Maria Barron et al., 'What Is Hybrid Learning? How Can Countries Get It Right?', 2021. <https://blogs.worldbank.org/education/what-hybrid-learning-how-can-countries-get-it-right>.

6 Working Group on Digital Learning, *Connecting Learning Spaces: Possibilities for Hybrid Learning*, 2021: xiii.

7 Maria Barron et al., 'What Is Hybrid Learning? How Can Countries Get It Right?', 2021. <https://blogs.worldbank.org/education/what-hybrid-learning-how-can-countries-get-it-right>.

2. Conceptual framework of hybrid learning

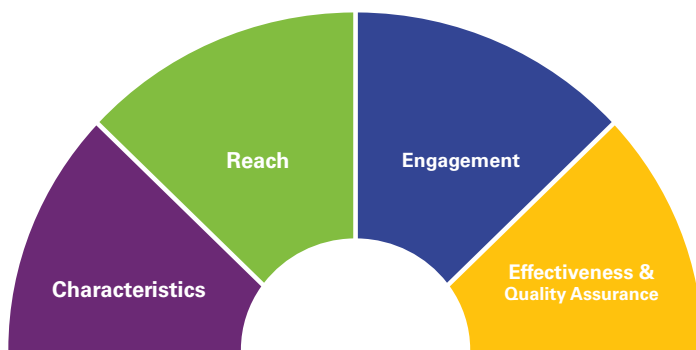


4.

2. Conceptual framework of hybrid learning

Monitoring hybrid learning can be framed by four key attributes used to organize data that is collected (see Figure 1).

Figure 1. Four attributes of monitoring hybrid learning.



The four attributes are defined below:

1. **Characteristics** capture key information on the institutions and the hybrid learning programme(s) deployed, as well as the teachers and learners.
2. **Reach** examines the availability of and access to technology or other relevant resources (e.g., take-home learning packages) to deliver and engage in learning.
3. **Engagement** measures how learners, teachers, administrators, and parents / caregivers participate in education programming (e.g., time spent by teachers to deliver content, amount of engagement from learners in a hybrid learning initiative).
4. **Effectiveness and quality assurance** aim to understand the effectiveness of education delivery and resulting changes in learning outcomes and skills.



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Figure 2. Applying the conceptual framework to a hybrid learning scenario.

As an example scenario of hybrid learning during Covid-19, let's say that in Country X, students meet with each other and teachers three times a week in a masked classroom setting (i.e., in-person). On the days that students do not go into the classroom, they listen to radio lessons and engage in paper-based exercises based on those lessons.

In this scenario, the following modalities are used:



Applying the four levels of the conceptual framework, a decision-maker supporting planning and implementation in this scenario may choose to monitor the following:

Characteristics

- What infrastructure (connectivity, devices) is available in schools?
- What infrastructure (connectivity, devices) is available at home?
- What is the digital literacy of the teachers?
- What is the digital literacy of the learners?

Reach

- How will paper materials be delivered to each household?
- Are the students, especially the most marginalized, able to travel safely to school?
- What percentage of students with a radio in their household are able to access the radio?

Engagement

- How much time do students spend engaging in classroom lessons?
- How much time do students spend engaging in radio lessons and paper exercises at home?

Effectiveness and quality assurance

- Are in-person and radio lessons covering foundational literacy and numeracy, socio-emotional and other skills?
- What percentage of students are exhibiting improvement in their literacy and numeracy outcomes?

3. Monitoring hybrid learning



3. Monitoring hybrid learning

Monitoring is an ongoing process to gather information on the reach and effectiveness of a hybrid learning initiative. This information 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.⁸ UNICEF ROSA (2020, p. 6)⁹ further emphasizes the role of monitoring in promoting equitable hybrid learning, stating:

“Well-designed monitoring initiatives during school closures can also provide a unique opportunity to gain important insights and information about marginalized children who may have not already been enrolled in school, including children with disabilities, adolescent girls, and children of migrants. They can also help identify geographic regions that require more targeted support with regard to learning continuity efforts.”

This section addresses three key questions that fall under monitoring hybrid learning:

1. What data should I collect?
2. How do I collect and manage the data?
3. How do I analyze and use the data?

3.1. What data should I collect?

Determining what data to collect involves selecting indicators for a hybrid learning initiative. Implementation monitoring involves data collection on inputs, activities, and immediate outputs (i.e., structural and process indicators). Results monitoring involves data collection on how outputs contribute to the achievement of outcomes (i.e., outcome indicators).¹⁰

3.1.1. Selecting the indicators

Decision-makers should carefully ensure that only key data points used to inform decision-making are collected. In other words, sometimes less can be more. A conscious effort should be taken to capture enough information, not all. Taking a ‘lean approach’ to data collection can cut down on the amount of time spent on data collection, and other data-related costs (e.g., for data storage).

In a monitoring system, indicators can be classified into three types: structural, process, and outcome.¹¹ This classification can be further expanded when considering the monitoring of hybrid learning across the four attributes discussed above (see Section 2).

Structural indicators

The structural indicators aim to understand specific legal instruments, such as laws, policies, and procedures that are in place to support education decision-makers in implementing hybrid learning. The indicators are useful in identifying gaps in national hybrid learning policy frameworks and strategies (see Table 1).

Table 1. Shortlist of structural indicators for hybrid learning.

Code	Indicator
I02	Teachers with knowledge and understanding of required Information and Communications Technology
I06	Schools / institutions equipped to deliver remote learning
I148	Government policies are in place to guide hybrid learning

⁸ 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.

⁹ UNICEF ROSA, *Monitoring Distance Learning During School Closures*, 2020.

¹⁰ Jody Zall Kusek and Ray C. Rist, *Ten Steps to a Results-Based Monitoring and Evaluation System*, 2004.

¹¹ 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>.

Process indicators

Process indicators measure how the ministry of education transforms their hybrid learning commitments into the desired results. The process indicators quantify the success and shortfalls of the policies and procedures that have been established by governments for hybrid learning (see Table 2).

Table 2. Shortlist of process indicators for hybrid learning.

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

Outcome indicators

Outcome indicators capture the performance of learners, teachers, institutions, and programs participating in hybrid learning initiatives. These indicators demonstrate the result of one or more process indicators (see Table 3).

Table 3. Shortlist of outcome indicators for hybrid learning.

Code	Indicator
I54	Learners using world-class digital learning solutions to build skills
I92	Teachers able to deliver hybrid learning
I122	Learners showing an improvement in learning
I123	Learners showing an improvement in digital competencies

3.1.2. Focusing on equity

In general, it is essential to take an equity-based approach to any monitoring, evaluation and learning (MEL) initiative to ensure that data is sensitive and responsive to the needs of those it intends to serve and that marginalized learners are not left behind. A focus on equity helps to answer questions such as: “How do we ensure that online / remote learning does not exacerbate existing inequalities in education?” Key dimensions of an equity-based approach encompass gender, ethnicity, socio-economic status, disability, and migration / refugee status.¹²

3.2. How do I collect and manage the data?

In-person and remote data collection can take place through the annual school census, surveys (household, phone, Interactive Voice Response, etc.), administrative records, and staff databases. This section hones in on the use of formative and summative assessments and other remote-based instruments as one of many potential means for hybrid learning data collection. It then discusses the use of an Education Management Information System (EMIS) to manage and conduct quality assurance on the collected data. Further information on data collection and survey design can be found in UNICEF ROSA’s *Monitoring Distance Learning During School Closures* report.¹³

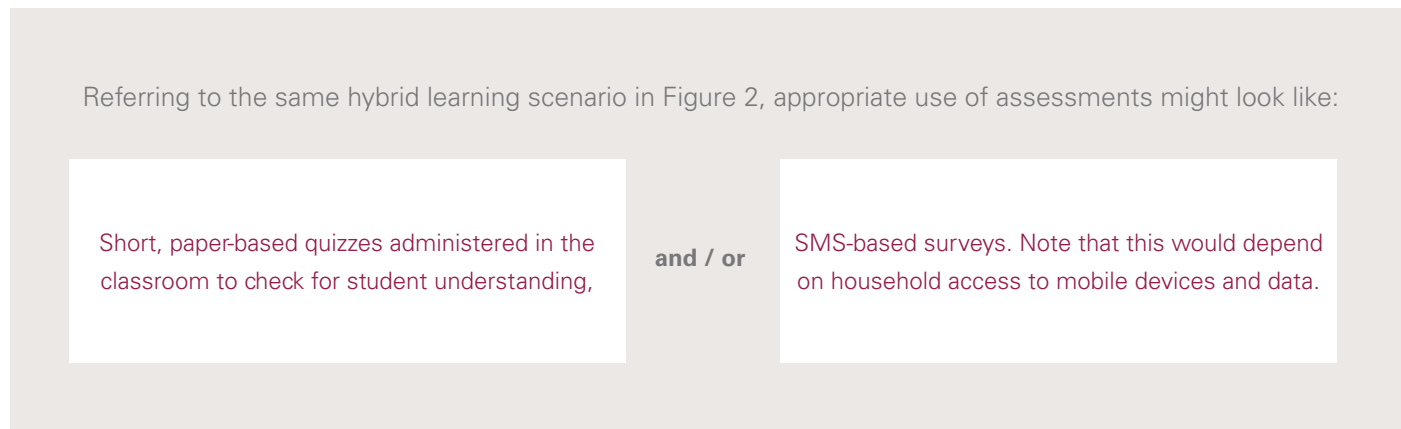
3.2.1. Collecting data through assessments

Formative assessments are carried out on a regular basis to gauge learners’ progress through observation, quizzes, assignments and feedback. The feedback allows teachers to evaluate their classroom practices, to ensure that curriculum learning goals are achieved. In hybrid learning, both synchronous and asynchronous methods of formative assessment can be used.¹⁴ Summative assessments are conducted at the end of the school term or year to establish whether learners have achieved the learning goals specified in the curriculum.¹⁵

Appropriate use of digital assessments can enable real-time data collection that supports rapid and efficient decision-making. However, this requires access to technology and adequate digital capacities of teachers and learners to employ the tools.¹⁶

12 Carina Omoeva, ‘5 Features of a Monitoring, Evaluation and Learning System Geared towards Equity in Education,’ 2018. <https://researchforevidence.fhi360.org/5-features-of-a-monitoring-evaluation-and-learning-system-geared-towards-equity-in-education>.
 13 UNICEF ROSA, *Monitoring Distance Learning During School Closures*, 2020.
 14 Le Thu Huong and Yee Ki Au, ‘How Can Digital Formative Assessment Help Monitor Student Learning during and after the COVID-19 Era?’, 2020. <http://learningportal.iiep.unesco.org/en/blog/how-can-digital-formative-assessment-help-monitor-student-learning-during-and-after-the-covid>.
 15 Diego Luna Bazaldua, Victoria Levin, and Julia Liberman, *Guidance Note on Using Learning Assessment in the Process of School Reopening*, 2020.
 16 Ibid.

Figure 3. Applying data collection approaches to a hybrid learning scenario.



3.2.2. Collecting data through additional means

Data collection can be conducted in person, remotely, or through a combination of both. Household surveys, like the Multiple Indicator Cluster Survey (MICS)¹⁷ and the Demographic and Health Survey (DHS)¹⁸, can also be used to collect data that is nationally representative. Such household surveys can be adapted to the school level. As an example,

before implementing hybrid learning, a survey for parents could be administered by teachers to gather information on access to devices and infrastructure.

However, in some cases, it may not be feasible or safe to carry out data collection in person. Table 4 lists a number of remote-based data instruments that can be used for hybrid learning initiatives.^{19, 20}

Table 4. Remote-based data instruments.

Instrument	Description
Phone surveys	Means of collecting data without reliance on the internet. Cell phones, dedicated SIM cards, and headsets with microphones would be required for phone interviews.
Interactive Voice Response (IVR)	Voice responsive data collection through mobile phone surveys. This survey method is good for short surveys and can be used in low literacy contexts.
SMS-based surveys	Mobile surveys that can collect concise data points from population segments. RapidPRO ¹ , a UNICEF platform, can be used to develop mobile services (such as SMS-based surveys) to rapidly collect information in emergency and non-emergency situations.
Mobile applications	Can be used to collect information from target populations with mobile devices and internet connectivity.
Web surveys	Online surveys that can be used to collect information on computers or mobile devices. Common web survey platforms include Google Forms and SurveyMonkey.

17 UNICEF, 'UNICEF MICS,' (no date). <https://mics.unicef.org/>

18 USAID, 'The DHS Program – Quality Information to Plan, Monitor and Improve Population, Health, and Nutrition Programs,' (no date). <https://dhsprogram.com/> <https://dhsprogram.com/>

19 Brajesh Panth et al., 'Distance Learning: Reach & Effectiveness in South Asia.' June 2021.

20 UNICEF ROSA, *Monitoring Distance Learning During School Closures, 2020.*

3.2.3. Managing the data

The collected data from assessments and other sources can be fed into an EMIS.

Education Management Information System (EMIS)

An EMIS is a framework for the data collection, processing, analysis, and dissemination to support policy formulation, planning and management.²² Data on learners, staff, infrastructure, school resources, and institutions are collected regularly. The modern EMIS allows for the recording and reporting of individual records for staff and learners in real-time. This can include daily tracking of learner attendance,

behavior and assessment data and, with the use of artificial intelligence, predictive models to guide policies for better education.²³

Integration of hybrid learning in EMIS

The integration of hybrid learning data in EMIS can be participatory and consultative with the stakeholders. The involvement of key stakeholders ensures that the relevant data is collected, managed, and produced. However, in some cases, the data that can be integrated may depend on the setup of the EMIS. To ascertain a holistic integration of hybrid learning in EMIS, consultations with stakeholders should cover several key steps, as listed in Table 5, below.²⁴

Table 5. Key steps for integration of hybrid learning in an EMIS.

Key step	Question(s) for consideration
Identification of information needs	What indicators for hybrid learning are available and unavailable in EMIS?
Inventory of available sources and data	What information is available in EMIS and in what formats? Which government departments can contribute data?
Data collection	How frequently should data be collected? Who will collect it and for whom is it being collected?
Data management	Are there existing data management platforms? Alternatively, can you adapt free open software?
Data dissemination	How will data be disseminated? In what format?
Data quality and feedback loops	How will data quality be verified? What feedback mechanisms will be used?

3.2.4. Conducting data quality assurance

Data quality assurance helps detect data incompleteness and ensures timely, reliable, and quality data from the national EMIS system. The following four policy areas can be used to evaluate EMIS:²⁵

1. **Enabling environment:** Assessment of intended policies in relation to building a sustainable infrastructure.

- 2. **System soundness:** Assessment of the degree to which processes and structures support a comprehensive system.
- 3. **Quality data:** Assessment of the degree to which the system accurately collects, securely saves and produces high-quality, timeline information.
- 4. **Utilization for decision-making:** Assessment of the reality of system implementation and use of information in decision-making.

21 UNICEF. 'About RapidPro.' 2022. <https://community.rapidpro.io/about-rapidpro/>

22 UNESCO, 'Educational Management Information System (EMIS)', (no date). <https://learningportal.iiep.unesco.org/en/glossary/educational-management-information-system-emis>.

23 UNESCO, *Module 3: Improving Education Management Information Systems (EMIS)*, (no date).

24 Emily Morris, Anna Farrell, and Emma Venetis, *A Roadmap for Measuring Distance Learning*, 2021.

25 Husein Abdul-Hamid, *What Matters Most for Education Management Information Systems: A Framework Paper*, 2014.

3.3. How do I analyze and use the data?

The analyzed and published data is useful in the diagnosis of and planning for hybrid learning. The data is leveraged to capture lessons learnt linked to hybrid learning that apply to teachers, learners, parents and technology, as well as next steps.²⁶

3.3.1. Analyzing the data

There are three main steps required to ensure that data is sufficiently analyzed and used to inform decision-making (see Figure 4 and Table 6).

Figure 4. Steps for data analysis.

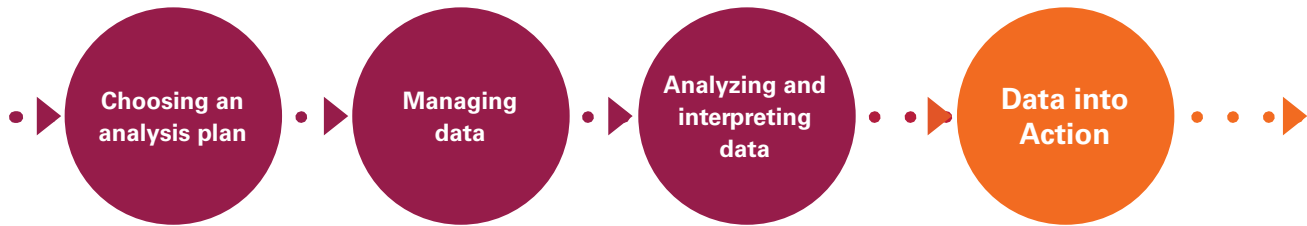


Table 6. Description of steps for creating a data analysis plan.^{27, 28, 29}

Step	Description
1 Creating an analysis plan	<ul style="list-style-type: none"> Identify research questions and / or hypotheses Select and access a dataset List inclusion / exclusion criteria Review the data to determine the variables to be used in the main analysis Select the appropriate statistical methods and software Create table shell
2 Managing data	<ul style="list-style-type: none"> Create a data dictionary Create a working copy of the dataset Clean the data in the working file Create an analysis file
3 Analyzing and interpreting the data	<ul style="list-style-type: none"> Determine the audience and the intended impact Design the data product with the audience in mind Prototype the design and test the interpretation and analysis Confirm that your test audience interprets the data as intended Publish results

26 Andaleeb Alam and Priyamvada Tiwari. *Putting the 'Learning' Back in Remote Learning*, 2020.
 27 Emily Banks, Ellie Paige, and Tanya Mather, *Developing a Quantitative Data Analysis Plan*, 2013.
 28 CDC, *Creating an Analysis Plan*, 2013.
 29 Scot H. Simpson 'Creating a Data Analysis Plan: What to Consider When Choosing Statistics for a Study.' *The Canadian Journal of Hospital Pharmacy* 68, no. 4 (2015): 311–17.

3.3.2. Using the data

The analyzed data can reveal important considerations and lessons learnt that can be applied to future iterations of hybrid learning, such as:

How teachers are effectively (or not effectively) applying hybrid learning approaches

- How to ensure that learners are improving their digital competencies and familiarity
- How to enhance the involvement of parents and caregivers in learning

- How to create learning materials and technologies that are inclusive for different genders, special needs, language, and religion.³⁰

These considerations and lessons learnt can inform the development of an action plan with recommendations for implementation. The action plan translates recommendations into priority strategies and assigns timelines and responsibilities to each (see Table 7).³¹

Table 7. *Template for a hybrid learning action plan.*

Recommendations from monitoring results	Priority strategies	Timeline	Person(s) responsible
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30 Abdullah Khalayleh et al., *A Monitoring and Evaluation Framework for Blended Learning: Pakistan Ministry of Federal Education and Professional Training*, 2021.

31 IIEP-UNESCO, and GPE, *Guidelines for Education Sector Plan Preparation*, 2015.

4. Next steps



4. Next steps

A supplementary question that looks beyond the short-term use of data for decision-making would be: “how do I transform the data into policy?” Data can be used to inform priorities and policy targets for hybrid learning (e.g., the direction, pace and / or magnitude of change). Based on the priorities and targets, the overarching policy documents can be revised. For example, the application of data within policy planning could be used to draw attention to select thematic areas within policy documents, such as ensuring access to hybrid learning for all learners. These actions can contribute to the process of conducting an education sector analysis, which informs the next iteration of an education sector plan.³²

The MICS-EAGLE project³³ uses Multiple Indicator Cluster Survey (MICS) data to enable Education Analysis and Global Learning for Equity (EAGLE). In other words, it supports governments to effectively use education data for evidence-based policymaking. “Education factsheets” on school

completion rates, foundational learning skills, access to EdTech tools, etc. are first developed and shared with government officials. Governments then utilize the information in the factsheets towards the development of education sector plans and other policy documents.³⁴ An additional initiative that exemplifies data-driven decision-making is Data Must Speak, which provides technical support to ministries of education and develops resources used to analyze education data. The Data Must Speak initiative emphasizes community empowerment through access to data, such as through the creation of school profile cards that can be accessed by parents, teachers, and students.³⁵

Effective monitoring of hybrid learning can facilitate nimble and flexible responses by governments in the wake of Covid-19 and school closures. The integration of data into long-term policy planning will support decision-makers to better address learner, teacher, and community needs.

³² Ibid.

³³ UNICEF, ‘MICS-EAGLE (Education Analysis for Global Learning and Equity),’ 2021. <https://data.unicef.org/resources/mics-education-analysis-for-global-learning-and-equity/>

³⁴ Peggy Kelly, ‘Countries Using Data to Inform Education Policies,’ 2021. <https://www.globalpartnership.org/blog/countries-using-data-inform-education-policies>.

³⁵ UNICEF, ‘Data Must Speak,’ (no date). <https://www.unicef.org/education/data-must-speak>.

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