

# Contextual Framework

## COVID-19: Monitoring Impacts on Learning Outcomes (MILO)

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The Global Education Monitoring (GEM) Centre supports education stakeholders to collect, analyse and use high-quality data to improve learning outcomes. The 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).





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## List of abbreviations

ACER	Australian Council for Educational Research
INEE	The International Network of Education in Emergencies
MILO	Monitoring Impacts on Learning Outcomes
OECD	Organisation for Economic Co-operation and Development
SDG	Sustainable Development Goal
UIS	UNESCO Institute for Statistics
UNESCO	The United Nations Educational, Scientific and Cultural Organization

# Introduction

The COVID-19: Monitoring Impacts on Learning Outcomes (MILO) project aims to measure learning outcomes in six countries in Africa, in order to analyse the long-term impact of COVID-19 on learning and to evaluate the effectiveness of distance learning mechanisms utilised during school closures. In addition, this project will develop the capacity of countries to monitor learning after the crisis.

The four overarching goals of the project are to:

- Evaluate the impact of COVID-19 on learning outcomes and measure the learning loss by reporting against Sustainable Development Goal (SDG) indicator 4.1.1b
- Identify the impact of different distance learning mechanisms put in place to remediate the learning disruption generated by COVID-19
- Expand the UIS bank of items for primary education
- Generate a toolkit so that assessment results can be scaled to international benchmarks, reporting against SDG 4.1.1.b.

The purpose of this Contextual Framework is to guide the development of the contextual questionnaires for MILO in order to address the research questions of the study. This Contextual Framework is organised into six themes and each theme draws on evidence from the literature to provide guidance on the types of data that are to be collected through the questionnaires. This Contextual Framework identifies and defines the multiple contexts that influence learners' performance and engagement in the six education systems of this study. Specifically, the framework:

- Guided the development of the contextual questionnaires
- Informs the interpretation and reporting of the relationship between contextual factors and learner performance, as well as the education policy that shapes this relationship.

The contextual questionnaires are designed to support the MILO project goal of identifying the impact of different distance learning mechanisms put in place to remediate the learning disruption generated by COVID-19.

## Background

The COVID-19 pandemic has caused educational disruptions in a number of ways. Across the world, schools have been partially or wholly closed, teachers and students have been forced to quarantine at home for short or extended periods of time, social learning opportunities have been cancelled and community interactions have been

curtailed. This has added a further challenge to the achievement of the SDGs related to education (UN Department of Economic and Social Affairs, 2020; UNESCO, 2020a). Countries have taken different approaches to continue teaching and learning in response to the COVID-19 disruptions. Most of these approaches can be categorised as Emergency Remote Teaching, involving a temporary shift of instructional delivery with an intention to return to in person delivery once the pandemic subsides.

Emergency Remote Teaching often involves technology based solutions, where such infrastructure is widely available. This can be collaborative learning that takes place through social interaction over the internet using video, chat, emails, discussion boards or knowledge forums. Educational broadcasting, the delivery of educational content via television or radio, has also been widely used during the pandemic and can be useful as it is not dependent on internet access or modern devices (Tarricone et al., Forthcoming).

No matter what the technical solution might be, there are a set of enabling conditions that must be in place for teaching and learning to occur in distance education contexts. Successful remote teaching requires teachers and students to have access to appropriate resources, including technology, and well-designed learning environments. It is therefore critical that teachers are provided with appropriate support and professional learning, particularly in designing learning which makes use of effective digital pedagogies (Tarricone et al., Forthcoming). Even when technology is available, the effective use of technical solutions for remote learning is highly dependent on the technological proficiency of students or their parents/ guardians.

Parental support and facilitation of remote learning is also important to the success of remote learning. Informing parents of their role and providing them with the strategies and tools to support their children's remote learning is essential to fostering a learning environment for the child (Cullinane & Montacute, 2020; Reimers & Schleicher, 2020).

One goal of remote learning is to promote student engagement in the learning process. Recent research focusing on the effects of the COVID-19 pandemic has explored ways in which self-regulation and resilience can be supported to enhance engagement in learning (Cho et al., 2021; Dvorsky et al., 2020). The effect of school closure and decreased student participation due to COVID-19 is likely to lead to reduced school completion rates (Tsolou et al., 2021; UN, 2020). It appears that disadvantaged or marginalised groups are disproportionately impacted by learning disruption, which may exacerbate inequitable educational outcomes. Data collected through the MILO project will be used to better understand the differential educational effects of COVID-19 on students. This information could be used to inform policy and practice responses to advance equitable student learning. The contextual data will be collected using the following three survey instruments: a Student Questionnaire provided to sampled students undertaking the MILO assessment; a School Questionnaire given to school principals from sampled schools; and a System Questionnaire, to be completed once for each participating country at ministerial level. The focus of each questionnaire is described further below.

# Conceptual framework

This conceptual framework underpins the design of the MILO questionnaires. The Framework guides what kinds of data that need to be collected to achieve the MILO objectives of: understanding how the COVID-19 disruption affected learning; quantifying any learning loss; and identifying how to support student learning. The Conceptual Framework will also be used to assist in analysing the data and organising the findings at the reporting stage.

The Conceptual Framework is organised into six themes, with the impact of the COVID-19 disruption organised into three layers: student characteristics, the home environment and the outer layer – the school environment, which includes two sub-themes, teaching and learning, and assessment and monitoring. This framework is depicted in Figure 1, with each theme outlined below.

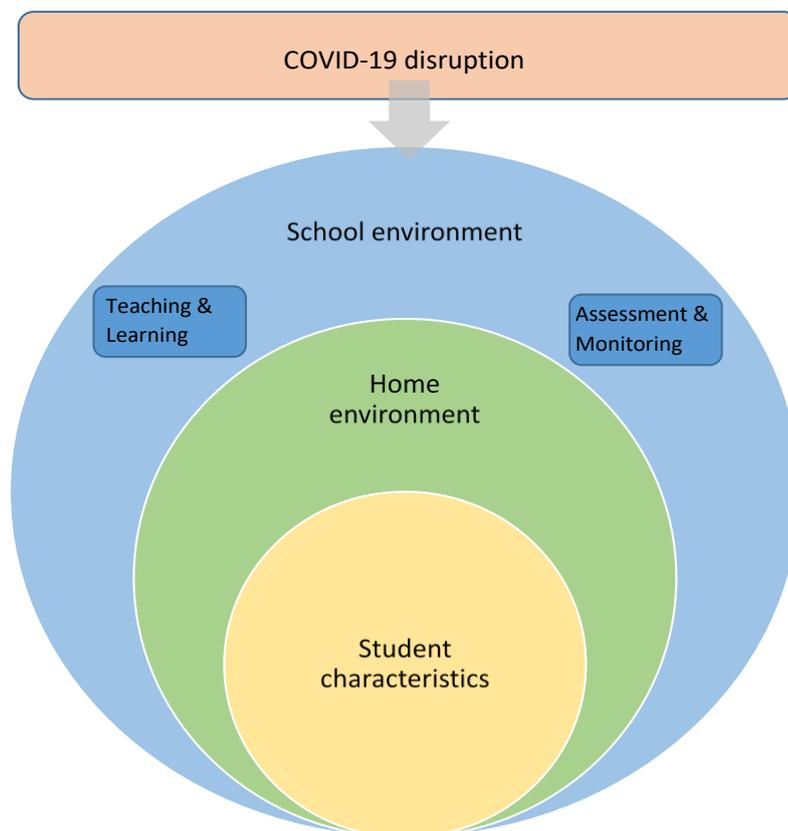


Figure 1: Conceptual Framework for MILO contextual data

## *Understanding the COVID-19 disruption*

The first theme, *Understanding the COVID-19 disruption*, is used to guide the collection of data relating to how COVID-19 impacted different school systems, schools and students. This provides the foundation on which other data are collected, in that the other data relate to the effects of COVID-19.

### *Student characteristics*

Beginning at the inner layer, data will be collected about *Student characteristics*, based on the following four demographic categories: 'socioeconomic status', 'gender', 'Students with disability or special needs' and 'students from ethnic, linguistic, refugee or internally displaced backgrounds'. These categories were derived from the literature, where evidence showed that students with particular qualities or from certain backgrounds are more vulnerable to learning loss during emergencies in education, such as COVID-19 (Tarricone et al., Forthcoming).

### *Home environment*

At the meso-layer, data will be collected about the *Home environment*. Although this is related to student background, it is more focussed on the home circumstances of students that might enable or inhibit learning during the COVID-19 disruption, regardless of more enduring personal characteristics.

### *School environment, including Teaching and learning, and Assessment and monitoring*

The outer layer is the *school environment*. The resources and actions of schools can either exaggerate or insulate children from the COVID-19 disruption. Within the broader school environment, *Teaching and learning* practices and *Assessment and monitoring* illuminate how education was undertaken during the COVID-19 disruption.

Together, these six themes provide a comprehensive picture of the student, school and system contexts in which student's education was affected by COVID-19, as well as considering student wellbeing and equity. The literature that informed each theme is presented below and the data that will be collected through MILO is discussed.

## **Theme 1: Understanding the COVID-19 disruption**

The COVID-19 disruption differs between education systems, as well as between schools and students within the same education system. Understanding the diverse impacts of the COVID-19 disruption is important as some populations can be particularly detrimentally affected. Research suggests that the COVID-19 disruption has exacerbated inequalities within countries and between them, undermining the realisation of the SDGs (Di Pietro et al., 2020; Save the Children, 2020; UNESCO, 2020b). Children from disadvantaged backgrounds need the most educational support, but have been least likely to receive it, leaving them even further behind. For example, an OECD study across 59 developed and developing countries found that during the COVID-19 disruption, approximately half of the children in most of these countries could not attend school or access the curriculum via any means (Reimers & Schleicher, 2020).

The MILO questionnaires are used to ascertain the specific nature of the disruption across diverse circumstances. The Student Questionnaire will investigate whether students experienced COVID-19 related school closures. Further detail will be obtained from the School Questionnaire, which will ascertain data about the length of time of school shutdowns, as well as whether schools remained partially open, such as to

particular students and staff. The Systems Questionnaire will provide opportunity for officials to describe key features of the COVID-19 disruption in their country, including variance across schools.

Emergencies in education increase the risks of causing long-term physical and psychological damage and trauma, whereby children are likely to feel uncertainty, fear, and isolation (European Civil Protection and Humanitarian Aid Operations, 2020; Halman et al., 2018; Kankaraš & Suarez-Alvarez, 2019; Rodríguez-Ledo et al., 2018; Weiss-Yagoda et al., 2019). Specific impacts of the COVID-19 disruption include: anxiety, stress, boredom, and an inability to concentrate (Di Pietro et al., 2020; Save the Children International, 2020). To ascertain the impacts of the COVID-19 disruption on different students, in the MILO contextual questionnaire students will be asked how they felt during the disruption, such as to what extent they were worried, scared or angry. Furthermore, data about the effects on students upon returning to school will also be collected, such as whether they lost interest in school work, could not focus, or worked slower than previously.

## **Theme 2: Student characteristics and support for students**

Students' personal characteristics, and the level of support that students are provided to meet their personal needs can shape their achievement levels. Educational emergencies, such as COVID-19 disruption, have differential impacts on educational achievement by students' socioeconomic status, gender, disability or special needs, ethnic and linguistic background, and refugee or internally displaced background.

### *Socioeconomic status*

There is a large body of evidence showing the association between low socioeconomic status and poor educational outcomes (Koza Çiftçi & Melis Cin, 2017; Sirin, 2005). This is particularly the case during emergencies in education, as children of low socioeconomic status lack family resources to buffer them against the effects of emergencies. Parents of low socioeconomic status (measured in various ways, including eligibility for free school meals and household income) have less economic and human capital to support their children's education during school closures (Cullinane & Montacute, 2020; Di Pietro et al., 2020). In addition, emergencies like COVID-19 can reduce already low household incomes, which can result in children being required to enter the workforce, whereby they may not return to school, even after the emergency subsides (Bekalo et al., 2003; Desai, 2020; Save the Children, 2020; Smitha, 2014).

There are varied measures of socioeconomic status. However, most measures apply a composite indicator, which includes various social and cultural factors, as well as economic factors (Schwantner & Adams, 2018). The MILO questionnaires will obtain data about a range of factors related to socioeconomic status. A number of questions will be related to household resources, including the physical structure and amenities of the dwelling, as well as household possessions, like owning a refrigerator. Socio and

cultural factors are ascertained by asking about parental education levels and the number of books in the household.

The MILO questionnaires also collect data about the support that schools and the broader education system may have provided to students from low socioeconomic backgrounds. For example, at the school level, data will be collected about whether additional support (such as equipment and extra tuition) were provided to students affected by poverty. At the systems level, data will be collected on the planning and provision of support to students from low socioeconomic backgrounds during the COVID-19 disruption and to encourage them to return to school after the disruption, such as with free school meals. At the student level, students will be asked about the general support they received during COVID-19 (such as teachers being available when needed and adapting school work to the needs of students) can be correlated with the socioeconomic status of students, thereby providing insight into the extent to which students from low socioeconomic status received particular attention.

### *Gender*

Girls are less likely than boys to return to school when schools reopen after an emergency. This is because in many low income countries girls are more susceptible to child marriage, gender-based violence and teenage pregnancy (Akmal et al., 2020; Heltne et al., 2020). Girls are also likely to be kept from school due to patriarchal households favouring boys' education when resources are limited, or to protect girls from perceived or real insecurities (Education Cannot Wait, 2019; Global Education Monitoring Report Team, 2020; Kirk, 2011; Save the Children, 2020).

The MILO School and System Questionnaires include questions related to student gender. Specifically, the School Questionnaire will attempt to identify if there was a change of the gender ratio before and after the COVID-19 disruption. Related to this, the Student Questionnaire asks participants if they had to undertake housework, including care for family members. The System Questionnaire enquires about the measures implemented to support girls during the COVID-19 disruption, as well as return to school afterwards. In recognition of the significance gender has on learning outcomes, the MILO assessment results for each education system will be reported not only in terms of all students, but also according to gender. The contextual data can be used to better understand any differences in assessment results between girls and boys.

### *Students with disability or special needs*

The International Network of Education in Emergencies has highlighted that children with disability (or special needs) are particularly vulnerable during emergencies (INEE, 2020). They often experience barriers accessing information, as well as increased isolation and are excluded from decision making. Furthermore, the additional support that might usually be provided to children with disability is often interrupted during an emergency (Dickinson et al., 2020; Good, 2015). Although, children with disability are vulnerable during emergencies across all education systems, risks are heightened in

low-income countries, which have less resources to cater to them (Save the Children International, 2020).

The MILO questionnaires will collect data about support provided to students with disability and special needs, where 'special needs' is defined according to each country's official criteria. Students will be asked if they received special support. This can then be triangulated with data collected from the School Questionnaire, which will ask if schools provided support for students with special needs, including whether school buildings remained open to this group of students and whether particular measures were implemented to encourage their return to school. At the systems level, data will be collected about the plans and policies for supporting students with disability or special needs.

#### *Students from ethnic, linguistic, refugee or internally displaced backgrounds*

There is strong evidence that children from ethnic or linguistic minorities are educationally disadvantaged compared to children whose mother tongue is the language of instruction (UNESCO, 2016). Research suggests students from ethnic and linguistic minorities display significantly lower levels of learning achievement than those from the dominant group (August et al., 2009; Mazawi, 1999).

During educational emergencies, this disadvantage is intensified, as often emergency education material, such as radio lessons, are only provided in the official or dominant language. The exacerbation of disadvantage that children from ethnic and linguistic minorities experience has been heightened during the COVID-19 disruption (UIS, 2021). Students from refugee and internally displaced backgrounds face many of the same challenges as other ethnic and linguistic minorities, and their predicament is often further compounded by living in overcrowded environments, lacking access to health services and experience unstable schooling (Internal Displacement Monitoring Centre, 2020; Refugees International, 2020).

The MILO questionnaires will collect data relating to ethnicity and language, including whether students are from refugee and internally displaced backgrounds. Students will be asked about the language they speak at home, and this will be triangulated by asking principals about the proportion of students whose 'heritage language' is not the same as the language of instruction. Furthermore, principals will be asked about the proportion of students who are from ethnic minorities, as well as immigrant, refugee or internally displaced backgrounds. At the systems level, data will be collected on whether plans or policies have been developed to support these groups of students.

### **Theme 3: Home environment and support for families**

The level of resources that students have access to at home can greatly mediate the effect of the COVID-19 disruption (Cullinane & Montacute, 2020; Reimers & Schleicher, 2020). Accordingly, the MILO Student and School Questionnaires collect data about students' home environment, thereby providing information about the enablers and inhibitors of

learning during the COVID-19 disruption. Data will be collected about how the COVID-19 disruption affected households. For example, students will be asked questions related to changes in household resources, illness and being forced to relocate.

The utilisation of digital platforms provides the opportunity to provide learning opportunities during school closures (IIEP-UNESCO, 2020). A specific digital technology that has been implemented during education in emergencies situations involves mobile learning (Baytiyeh, 2019; Dabrowski et al., 2020). Hence, the MILO questionnaires will collect data about access to digital resources, such as whether students had access to the internet, computers and smartphones.

However, it is recognised that in many low income countries, access to digital resources remains low or uneven (Jagannath et al., 2018; James, 2021; Kalolo, 2019). Consistent with this, in response to the COVID-19 disruption, numerous countries delivered teaching and learning content via television and radio (Dabrowski et al., 2020). Hence, the Student Questionnaire asks participants if they have a television or radio in their home.

It takes time to convert curricula for television and/or radio platforms (Federal Democratic Republic of Ethiopia, 2020). It can also be difficult to incorporate all grades, subjects, and exam review lessons for television and radio (The Federal Ministry of Education (Sudan), 2020; The Republic of The Gambia, 2020). Therefore, various governments and schools relied on print materials to support learning during the COVID-19 disruption. Print materials are often used when there is a lack of access to other modalities, which is most common for children from lower socioeconomic backgrounds (Cullinane & Montacute, 2020; GPE, 2020f). Accordingly, the Student Questionnaires asks participants if they had access to home learning resources, such as: pens, text books and rulers during the Covid-19 disruption.

Beyond resources, the home environment also includes the level of support that family members can provide children. During the COVID-19 disruption, initiatives in low income countries that supported families typically emphasised basic health and wellbeing. However, other initiatives included provided guides for families to develop structured and emotionally warm learning environments (GPE, 2020b, 2020g, 2020e; Ministry of Education (Liberia), 2020; Ministry of Education (Somalia), 2020).

The MILO Student Questionnaire asks how often children received help with learning tasks, such as: reading, writing, mathematics, creating learning timetables, accessing materials or using digital devices. Parents and other household members play a larger role in children's education when schools are shut down, thus learning outcomes will be enhanced if households are supported (Codreanu, 2019; Davies, 2011; Reimers & Schleicher, 2020). In recognition of this, the MILO School and System Questionnaires will gather data about household support and outreach. For example, principals will be asked if schools: contacted the families of students who are failing to attend school, provided families with support from counsellors, conducted home visits and gave advice about how parents can foster children's academic learning.

There are also measures that can be implemented at the systems level to support families. In regard to this, the MILO System Questionnaire will seek information about whether families were encouraged to return their children to school, such as via providing resources, like food, cash or transport. Furthermore, consistent with evidence that communities can help facilitate the re-engagement of families in schooling, (Sinclair, 2001) the questionnaire will collect data about the extent community engagement was undertaken for this purpose.

## **Theme 4: School environment**

Under normal circumstances, schools are the basic organisational unit providing the resources necessary for educating children. There is strong evidence that effective school leaders, who are well supported, can make a significant difference to the quality of teaching and learning (Government of Ghana, 2012; Hattie & Clarke, 2019).

The MILO School and System Questionnaires will be used to better understand the circumstances of schools. Data will be collected about whether schools are privately or publically managed, as well as about the extent of autonomy schools usually have, as well as during the COVID-19 disruption. More detailed information about participating schools is also gathered through the School Questionnaire, including: average class size, location (such as urban or rural), and number of staff and students. Additionally, data will be gathered about school resources, such as whether schools have certain teaching materials and modern amenities, as well as technology, such as computers.

An important aspect of a school's capacity to support students depends on the skills of school leaders and teachers (Hattie & Clarke, 2019). Hence, MILO will collect data about staff experience and qualifications. For schools to continue to serve their students during emergencies, school leaders need support. Hence, principals will be asked if during the COVID-19 disruption there was support from: national education authorities, provincial authorities, aid organisations or other groups.

Teachers are the fulcrum in any education system's capacity to maintain learning during an emergency (INEE, 2010). During emergencies, teachers might need to disseminate and communicate information across various platforms to support and engage children and parents (Brocque et al., 2017). This may require teachers to upskill in remote learning pedagogies (Di Pietro et al., 2020; Hall et al., 2020; Reimers & Schleicher, 2020; Trust & Whalen, 2020). Therefore, the MILO School Questionnaire will collect data about the time allocated to teachers to undertake tasks arising from the COVID-19 disruption, as well as the provision of professional development. For example, data will be collected about whether teachers received training related to how to engage students and families remotely, as well as how to support student wellbeing. Lastly, supporting teachers' well-being enables them to better support their students (Day & Kington, 2008; McCallum & Price, 2010), therefore, the MILO School Questionnaire will collect data on teacher wellbeing.

## **Theme 5: Teaching and learning**

Teaching and learning has been transformed in many education systems as a result of the COVID-19 disruption. Hence, the MILO questionnaires will collect a wide variety of data about teaching and learning. Numerous questionnaire items will relate to remote learning, such as about a schools capacity to deliver remote learning. Furthermore, principals will be asked about the extent to which specific strategies were applied in minimising the impact on teaching and learning processes, such as making use of technology, communicating with families and distributing learning materials. Students' perspectives about remote teaching will also be sought. Students will be asked if their school engaged in various practices, such as checking in with them, as well as whether the school facilitated their engagement in remote learning through the provision of resources.

In reopening schools after the COVID-19 shutdowns, many schools focused on helping students to make-up for lost learning. This is achieved through various back to school initiatives, such as remedial and accelerated learning programs, as well as targeting vulnerable children most at risk of not returning to school (Cullinane & Montacute, 2020; GPE, 2020a, 2020c, 2020d). Hence, the MILO School Questionnaire will enquire about what provisions have been made to facilitate face-to-face learning and if there have been any changes that have been made to school policies and procedures following the COVID-19 disruption.

There is evidence suggesting that that curriculum can be adapted to enhance student resilience, such as by integrating social and emotional learning (Kankaraš & Suarez-Alvarez, 2019). For this reason, the MILO School Questionnaire will ask principals if their preparations for future educational emergencies included adapting existing curriculum, such as developing plans for remote instruction.

## **Theme 6: Student assessment and monitoring**

The need to assess learning is heightened following an emergency, as there is more risk of unequal learning progress outside of normal schooling (Reimers & Schleicher, 2020). Classroom and school assessments of student learning during and after emergencies are crucial for guiding education response and recovery, helping identify learning progress, learning loss and learner needs (INEE, 2010; Reimers & Schleicher, 2020). The information garnered from assessments can structure activities and programs to progress learning as the most acute phase of emergencies subside (Belisle et al., 2016).

The MILO questionnaires will gather various data related to assessment. Principals will be asked what forms of assessment (if any) were undertaken, as well as whether feedback was provided to students. This will be triangulated by asking students about feedback they received on their learning. The Systems Questionnaire asks about any changes made to national assessments as a result of COVID-19.

Monitoring involves collecting and analysing up-to-date data from schools, staff, and students, informing decision-making about education resourcing and planning

(Robinson & Curtiss, 2020; Save the Children International, 2020b). Hence, the System Questionnaire will ask officials if they collected data to monitor the impacts of the COVID-19 disruption on students and teachers.

## The MILO questionnaires

This section provides an overview of the three MILO questionnaires, including the themes and content explored, the question types and how each will be administered. All three questionnaires will refer to the 'COVID-19' disruption, which is a period of time specified by each country in which regular schooling was changed as a result of COVID-19. It could involve schools being closed, contact hours changing or greater use of remote learning, for example.

The Student Questionnaire aims to gain the perspectives of students about changes to their education as a result of COVID-19. It also collects data about the home environment and student characteristics.

The School Questionnaire is to be completed by a school principal, or their delegate. The questionnaire focusses on gaining perspectives of school principals on how COVID-19 impacted their school's ability to deliver teaching and learning activities, as well as any ongoing consequences resulting from the pandemic. In addition, the questionnaire will elicit information about schools in general to aid the interpretation of student assessment and questionnaire responses.

The System Questionnaire will be coordinated and submitted by a senior government official at the national level<sup>1</sup>. One response will be received from each country participating in MILO. The respondent(s) will be expected to draw on information from government sources, whereby they may need to request information from other officials. They will be asked to provide responses regarding the education system of the whole country, and with specific regard to the impacts of COVID-19. This includes: how the period of disrupted schooling can be characterised, how responsibility was distributed for responding to the pandemic in the school sector, and what plans and policies have been implemented in response to the COVID-19 disruption.

The Student and School Questionnaires will contain a combination of categorical and scale questions. The System Questionnaire includes categorical and scale questions as well as an open-ended question asking for a detailed description of the key features of the COVID-19 disruption in the country.

The Student and School Questionnaires will be paper based and the System Questionnaire will be completed online. All questionnaires will be translated into French from English. Of the six participating countries, four are Francophone countries and two are Anglophone countries.

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<sup>1</sup> The respondent for each of the six participating countries will be nominated by the National Project Managers.

The three questionnaires include some overlapping content which will enable perspectives from the three different groups to be triangulated. Together, the three questionnaires will provide the contextual data required to better understand the impacts of COVID-19 on learning, the current conditions of learning and other background factors that will assist with the interpretation of the MILO assessment results.

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