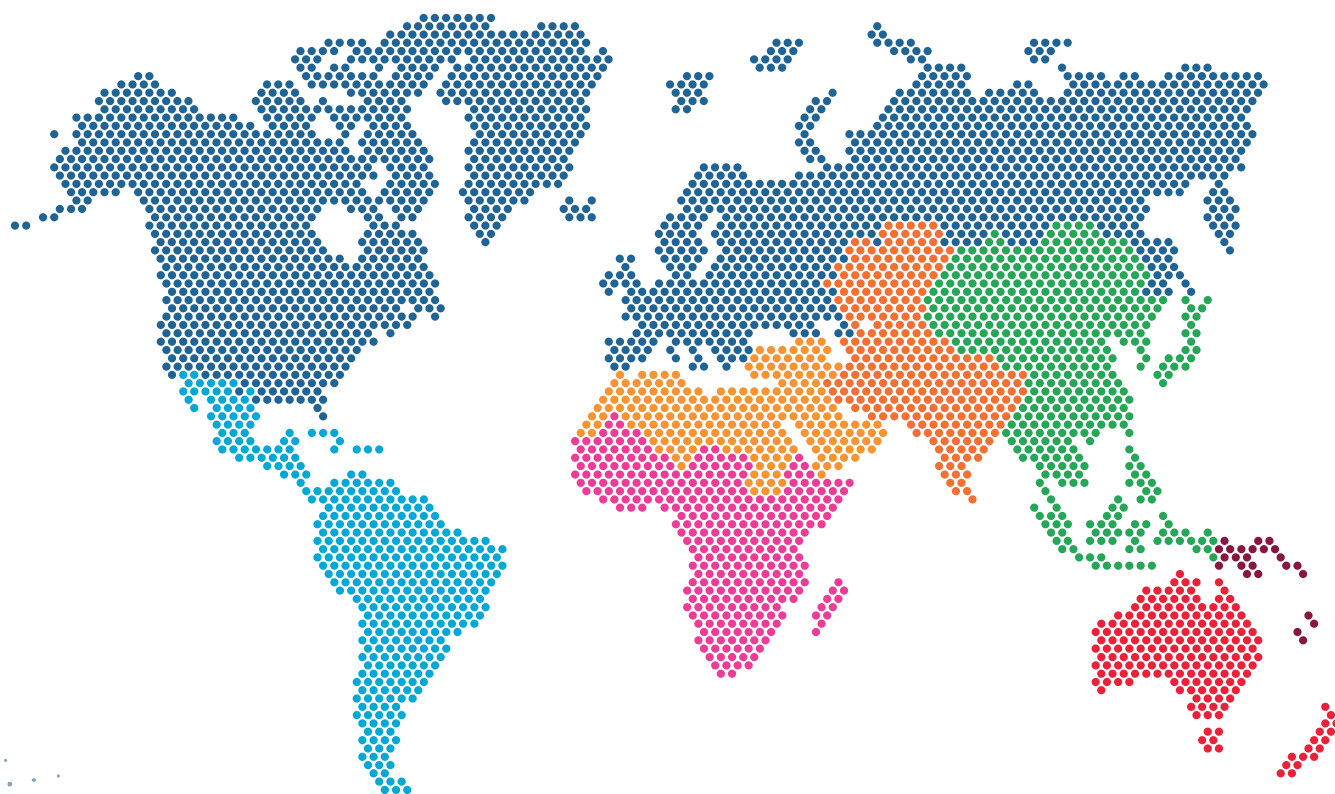


# SDG 4 Data Digest

## How to Produce and Use the Global and Thematic Education Indicators



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## **UNESCO**

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# Table of contents

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<b>FOREWORD</b> . . . . .	<b>7</b>
<b>ACRONYMS AND ABBREVIATIONS</b> . . . . .	<b>9</b>
<b>IMPLEMENTATION OF SDG TARGETS</b> . . . . .	<b>11</b>
<b>1. GLOBAL INDICATORS</b> . . . . .	<b>13</b>
4.1.1 Proportion of children and young people (a) in Grade 2 or 3; (b) at the end of primary education; and (c) at the end of lower secondary education achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex . . . . .	14
4.2.1 Proportion of children under 5 years of age who are developmentally on track in health, learning and psychosocial well-being, by sex . . . . .	20
4.2.2 Participation rate in organized learning (one year before the official primary entry age), by sex . . . . .	22
4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex . . . . .	25
4.4.1 Proportion of youth/adults with information and communications technology (ICT) skills, by type of skill . . . . .	28
4.5.1 Parity indices (female/male, rural/urban, bottom/top wealth quintiles and others such as disability status, indigenous peoples and the conflict-affected, as data become available) for all education indicators on this list that can be disaggregated . . . . .	30
4.6.1 Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex . . . . .	31
4.7.1 Extent to which (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights, are mainstreamed at all levels in: (a) national education policies (b) curricula (c) teacher education and (d) student assessments. . . . .	35
4.a.1 Proportion of schools with access to: (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) single-sex basic sanitation facilities; and (g) basic handwashing facilities (as per the WASH indicator definitions) . . . . .	36
4.b.1 Volume of official development assistance flows for scholarships by sector and type of study . . . . .	38
4.c.1 Proportion of teachers in: (a) pre-primary education; (b) primary education; (c) lower secondary education; and (d) upper secondary education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre-service or in-service required for teaching at the relevant level in a given country, by sex . . . . .	39

<b>2. THEMATIC INDICATORS</b> . . . . .	<b>41</b>
<b>Target 4.1</b> . . . . .	<b>43</b>
4.1.2 Administration of a nationally-representative learning assessment (a) in Grade 2 or 3; (b) at the end of primary education; and (c) at the end of lower secondary education . . . . .	43
4.1.3 Gross intake ratio to the last grade (primary education, lower secondary education) . . . . .	44
4.1.4 Completion rate (primary education, lower secondary education, upper secondary education) . . . . .	45
4.1.5 Out-of-school rate (primary education, lower secondary education, upper secondary education) . . . . .	46
4.1.6 Percentage of children over-age for grade (primary education, lower secondary education) . . . . .	47
4.1.7 Number of years of (a) free and (b) compulsory primary and secondary education guaranteed in legal frameworks . . . . .	48
<b>Target 4.2</b> . . . . .	<b>50</b>
4.2.3 Percentage of children under 5 years experiencing positive and stimulating home learning environments . . . . .	50
4.2.4 Gross early childhood education enrolment ratio in (a) pre-primary education and (b) early childhood educational development . . . . .	51
4.2.5 Number of years of (a) free and (b) compulsory pre-primary education guaranteed in legal frameworks . . . . .	52
<b>Target 4.3</b> . . . . .	<b>54</b>
4.3.2 Gross enrolment ratio for tertiary education, by sex . . . . .	54
4.3.3 Participation rate in technical and vocational programmes (15- to 24-year-olds), by sex . . . . .	55
<b>Target 4.4</b> . . . . .	<b>57</b>
4.4.2 Percentage of youth/adults who have achieved at least a minimum level of proficiency in digital literacy skills . . . . .	57
4.4.3 Youth/adult educational attainment rates by age group, economic activity status, levels of education and programme orientation . . . . .	58
<b>Target 4.5</b> . . . . .	<b>60</b>
4.5.2 Percentage of students in primary education whose first or home language is the language of instruction . . . . .	60
4.5.3 Extent to which explicit formula-based policies reallocate education resources to disadvantaged populations . . . . .	61
4.5.4 Education expenditure per student by level of education and source of funding . . . . .	62
4.5.5 Percentage of total aid to education allocated to least developed countries . . . . .	64
<b>Target 4.6</b> . . . . .	<b>66</b>
4.6.2 Youth/adult literacy rate . . . . .	66
4.6.3 Participation rate of illiterate youth/adults in literacy programmes . . . . .	67
<b>Target 4.7</b> . . . . .	<b>68</b>
4.7.2 Percentage of schools that provide life skills-based HIV and sexuality education . . . . .	68
4.7.3 Extent to which the framework on the World Programme on Human Rights Education is implemented nationally (as per the UNGA Resolution 59/113) . . . . .	69

4.7.4	Percentage of students by age group (or education level) showing adequate understanding of issues relating to global citizenship and sustainability. . . . .	70
4.7.5	Percentage of 15-year-old students showing proficiency in knowledge of environmental science and geoscience. . . . .	71
4.a.2	Percentage of students experiencing bullying. . . . .	72
4.a.3	Number of attacks on students, personnel and institutions. . . . .	73
4.b.2	Number of higher education scholarships awarded by beneficiary country. . . . .	75
4.c.2	Pupil-trained teacher ratio by education level. . . . .	75
4.c.3	Percentage of teachers qualified according to national standards by education level and type of institution. . . . .	76
4.c.4	Pupil-qualified teacher ratio by education level. . . . .	77
4.c.5	Average teacher salary relative to other professions requiring a comparable level of qualification. . . . .	78
4.c.6	Teacher attrition rate by education level. . . . .	79
4.c.7	Percentage of teachers who received in-service training in the last 12 months by type of training. . . . .	80
<b>3.</b>	<b>REGIONAL MONITORING FRAMEWORKS. . . . .</b>	<b>83</b>
	Central and Southern Asia. . . . .	85
	Eastern and South-Eastern Asia. . . . .	85
	Europe and North America. . . . .	85
	Latin America and the Caribbean. . . . .	85
	Oceania. . . . .	86
	Sub-Saharan Africa. . . . .	86
	<b>SUMMARY. . . . .</b>	<b>89</b>
	<b>REFERENCES. . . . .</b>	<b>91</b>
	<b>APPENDIX A. GLOBAL INDICATORS' SURVEY QUESTIONS. . . . .</b>	<b>93</b>

## LIST OF FIGURES

Figure 1.	Data availability template map . . . . .	13
Figure 2.	Data availability map of global indicator 4.1.1 (reading or mathematics) . . . . .	15
Figure 3.	An overview of assessment options . . . . .	16
Figure 4.	Assessment types and sources of data . . . . .	17
Figure 5.	Minimum proficiency levels for mathematics . . . . .	17
Figure 6.	Solutions for producing comparable data from different assessments . . . . .	18
Figure 7.	Decision Tree for sourcing of data . . . . .	19
Figure 8.	Data availability map of global indicator 4.2.1 (2010-2019) . . . . .	20
Figure 9.	Distribution of indicator 4.2.1 among countries (2010-2019) . . . . .	21
Figure 10.	Data availability map of global indicator 4.2.2 (2010-2019) . . . . .	22
Figure 11.	Distribution of indicator 4.2.2 among countries (2010-2019) . . . . .	24
Figure 12.	Data availability map of global indicator 4.3.1 (2010-2019) . . . . .	25
Figure 13.	Distribution of indicator 4.3.1 among countries (2010-2019) . . . . .	27
Figure 14.	Data availability map of global indicator 4.4.1 “copying or moving a file or folder” (2010-2019) . . . . .	28
Figure 15.	Distribution of indicator 4.4.1 (“copying or moving a file or folder”) among countries (2010-2019) . . . . .	30
Figure 16.	Data availability map of parity indices for indicator 4.1.1b – mathematics at the end of primary (2010-2019) . . . . .	31
Figure 16.	(cont.). Data availability map of parity indices for indicator 4.1.1b – mathematics at the end of primary (2010-2019) . . . . .	32
Figure 17.	Data availability map of global indicator 4.6.1 (2010-2019) . . . . .	33
Figure 18.	Distribution of indicator 4.6.1 (literacy) among countries (2010-2019). . . . .	34
Figure 19.	Strategies to assess literacy and numeracy for indicator 4.6.1 . . . . .	35
Figure 20.	Data availability map of global indicator 4.a.1 – electricity in primary schools (2010-2019) . . . . .	37
Figure 21.	Data availability map of global indicator 4.b.1: Total official flows for scholarships, by recipient country (constant 2017 US\$, millions) . . . . .	38
Figure 22.	Data availability map of global indicator 4.c.1 – primary (2010-2019) . . . . .	39
Figure 23.	Thematic indicators and the four levels of SDG 4 monitoring . . . . .	41
Figure 24.	Potential data sources for global and thematic indicators for each SDG 4 target. . . . .	42
Figure 25.	Regional indicators and the four levels of SDG 4 monitoring . . . . .	83

## LIST OF BOXES

Box 1.	New ISCED-T classification to improve the comparability of teacher training . . . . .	40
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## LIST OF TABLES

Table 1.	SDG 4 targets and the goals established in each regional plan, regional report or indicator framework. . . . .	84
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# Foreword

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The need for accurate, current and comparable data on education has never been more urgent, with the prospects of reaching Sustainable Development Goal 4 – a quality education for all by 2030 – far from certain. According to the UNESCO Institute for Statistics (UIS), about 258 million children, adolescents and youth are out of school. The data confirm recent projections showing that, without a shift from “business as usual”, one in every six children aged 6 to 17 will still be out of school in 2030 and only six out of ten young people will complete secondary education. The data also highlight the urgent need to improve the quality of education on offer. According to UIS estimates, 55% of children and adolescents of primary and lower secondary school age are not achieving minimum proficiency levels in reading and 60% are not reaching these levels in mathematics.

The 2019 edition of the SDG 4 Data Digest reinforces the need for the robust data that are crucial to reach the global targets for education. These targets are still achievable if the necessary political will is mobilised, backed by concrete resources. Education systems only function effectively if their strategies, approaches and funding are built on the solid foundations of data. The Digest aims to support countries as they strengthen these foundations to produce the data needed for international reporting, as well as for their own education priorities.

The Digest recognises that countries are under intense pressure to produce education data for a wide range of indicators: the 11 indicators used

to monitor global progress towards SDG 4, plus a set of 32 thematic indicators to better support policymaking. Together, these indicators should deliver a full picture of progress and potential setbacks. However, the Digest acknowledges that many countries struggle to produce – let alone make good use of – the data that are required.

Countries need practical methodologies that can draw on existing information to produce accurate statistics. The Digest highlights these methodologies and the steady progress on their development and use, thanks to the concerted efforts of governments and other partners worldwide. These efforts are supported by the UIS, which works to build consensus on data across countries through the [Technical Cooperation Group \(TCG\)](#) on the Indicators for SDG 4.<sup>1</sup>

The first section of the Digest focuses on the 11 global monitoring indicators, drawing on the [UIS Quick Guide to Indicators for SDG 4](#), which provides methodologies for each indicator.<sup>2</sup> It explains how countries can produce the national data needed and the process required for reporting the data to the UIS in order to produce internationally comparable indicators for monitoring. Section 2 also builds on the *Quick Guide* to outline the methodologies used to produce the thematic indicators.

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1 <http://tcg.uis.unesco.org/>

2 <http://uis.unesco.org/sites/default/files/documents/quick-guide-education-indicators-sdg4-2018-en.pdf>



Section 3 presents a series of regional initiatives to monitor progress towards SDG 4. The section provides insight on how countries in different regions are striving to make the greatest possible use of existing data while developing new indicators and frameworks to support policymaking in areas they consider to be critical.

The collection, analysis and use of data are too often seen as “nice to have” if resources allow. In reality, they help countries ensure that the money they spend on education has the best possible impact on individual and national well-being. A reluctance to prioritise data because of perceived resource constraints is a false economy that wastes both education investments and opportunities.

This is why the UIS has launched the campaign to #FundData. The investment case for education has

been made repeatedly: its impact on poverty, on equity, on health and nutrition is well known. We must now move faster to ensure that no child is left behind.

As the custodian agency for SDG 4 data, the UIS is proud to work with countries and partners worldwide to generate the internationally comparable data needed to deliver a quality education for all – at last.



Silvia Montoya  
Director  
UNESCO Institute for Statistics

# Acronyms and abbreviations

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AES	Adult Education Survey
CAN	Cross-national assessments
CARICOM	Caribbean Community
CDC	Centers for Disease Control and Prevention (US)
CESA 16-25	Continental Education Strategy for Africa
CONFEMEN	<i>Conférence des ministères de l'Éducation des États et gouvernements de la Francophonie</i> (Conference of Ministers of Education of States and Governments of Francophonie)
DAC	Development Assistance Committee (OECD)
DHS	Demographic and Health and Education Survey
ECDI	Early Childhood Development Index (MICS)
ECLAC/CEPAL	United Nations Economic Commission for Latin America and the Caribbean
EQAP	Educational Quality & Assessment Programme
ESD	Education for sustainable development
EU	European Union
EUROSTAT	European Statistical Office
GAML	Global Alliance to Monitor Learning
GCED	Global citizenship education
GCF	Global Content Framework
GCPEA	Global Coalition to Protect Education from Attack
GDP	Gross domestic product
GPI	Gender parity index
GSHS	Global School-based Student Health Survey (WHO)
HBSC	Health Behaviour in School-aged Children
IATI	International Aid Transparency Initiative
IBE	International Bureau of Education (UNESCO)
ICCS	International Civic and Citizenship Education Study (IEA)
ICILS (IEA)	International Computer and Information Literacy Study
ICT	Information and communication technology
IEA	International Association for the Evaluation of Educational Achievement
ISCED	International Standard Classification of Education
ITU	International Telecommunications Union
LLECE	Latin American Laboratory for Assessment of the Quality of Education
MICS	Multiple Indicator Cluster Survey
NGO	Non-governmental organization
NLA	National-level assessments
ODA	Official development assistance

OECD	Organisation for Economic Co-operation and Development
OEI	Organización de los Estados Iberoamericanos
OHCHR	Office of the High Commissioner for Human Rights
PacREF	Pacific Regional Education Framework
PAL	People's Action for Learning (Network)
PASEC	<i>Programme d'analyse des systèmes éducatifs de la CONFEMEN</i> (Programme of Analysis of Education Systems of CONFEMEN)
PEC	<i>Política Educativa Centroamericana</i> (Central American Education Policy)
PIACC (OECD)	Programme for the International Assessment of Adult Competencies
PISA	Programme for International Student Assessment (OECD)
PPP\$	Purchasing power parity (US\$)
SAARC	South Asian Association for Regional Cooperation
SABER	Systems Approach for Better Education Results (World Bank)
SACMEQ	Southern and Eastern Africa Consortium for Monitoring Educational Quality
SAMOA	SIDS Accelerated and Modalities of Action (Pathway)
SEAMEO	Southeast Asia Ministers of Education Organization
SDG	Sustainable Development Goal
SIDS	Small Island Developing States
SPC	Pacific Community
SWTS	School-to-Work Transition Survey (ILO)
TCG	Technical Cooperation Group
TERCE	<i>Tercer Estudio Regional Comparativo y Explicativo</i> (Third Regional Comparative and Explanatory Study)
TIMSS	Trends in International Mathematics and Science Study (IEA)
TVET	Technical and vocational education and training
UIS	UNESCO Institute for Statistics
UNICEF	United Nations International Children's Fund
UN-OHRLLS	UN Office of the High Representative for Least Developed Countries, Landlocked States and Small Island Developing States
WASH	Water, sanitation and hygiene

# Implementation of SDG targets

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In 2015, United Nations Member States committed to pursuing and meeting ambitious and necessary targets for education in the world by 2030. A third of the period for fulfilling this agenda has now elapsed and some countries are still striving to implement mechanisms to monitor their progress in relation to all SDG 4 targets.

The comprehensive and multifaceted nature of the SDG 4 targets also poses complex challenges for governments, organizations and civil society to produce timely, reliable and comparable data to monitor countries' progress.

A major barrier for full implementation of SDG 4 monitoring is the lack of financial support for building the appropriate statistical capacity in low-income countries (UIS, 2017; UIS & GEMR Team, 2019). However, there are still substantial knowledge gaps regarding the SDG 4 indicators and how they can be calculated using data already available.

This publication provides an overview of all SDG 4 targets and their respective indicators. It aims to help countries to implement or adapt data sources, envisaging higher participation at all levels and in all dimensions of SDG 4 monitoring.

As the main custodial agency for the SDG 4 indicators, the UNESCO Institute for Statistics (UIS) has been working closely with stakeholders at the global, regional and national levels to overcome these data availability challenges.

The Technical Cooperation Group on the Indicators for SDG 4 (TCG) is a crucial UIS initiative in

this regard. Established in 2016, it serves as a platform to discuss and develop the indicators used for monitoring SDG 4 targets in an open, inclusive and transparent manner. The TCG is currently composed of 27 Member States and eight organizations including representatives of all regions as well as civil society organizations and international organizations, such as the OECD, UNICEF, the World Bank and UNESCO itself.

Since 2016, the TCG has worked on the implementation of 43 global and thematic indicators proposed in the Education 2030 Framework for Action. It has also shared national and regional experiences in the development and implementation of the SDG 4 monitoring process, and advanced the establishment of benchmarks, thresholds and minimum proficiency levels. Finally, the TCG has also concentrated its efforts on discussing the capacity-building needs of countries and the strategies those needs require.

Countries are the starting point for all national and international monitoring. The players involved in data collection and dissemination include the national statistical office, line ministries and other relevant national institutions. Countries determine the level of detail contained in the data and metadata they share with custodian agencies and how much of it is published. The more the data are disaggregated, the more useful they become for a wider range of audiences. The SDG global indicators, therefore, represent only a subset of the full suite of indicators monitored in a country that includes thematic, regional and national indicators.

This report aims to address this challenge for SDG 4 global monitoring adopting the same broad multi-level structure, beginning with the global framework, followed by the thematic indicators, and concluding with the regional framework. The first chapter describes the current status of development of each global indicator and discusses different strategies that can be adopted to produce data for each indicator. Chapter 2 gives an overview of all 33 thematic indicators, discussing the different concepts that

are covered in relation to their corresponding SDG 4 target. Finally, the last chapter describes several initiatives at the regional level that are currently in place to monitor SDG 4 – Education 2030.

With this publication, the UIS expects to reinforce support for countries, civil society and other national organizations in measuring the progress achieved on all targets of SDG 4, and expanding the coverage of Education 2030 monitoring.

# 1. Global indicators

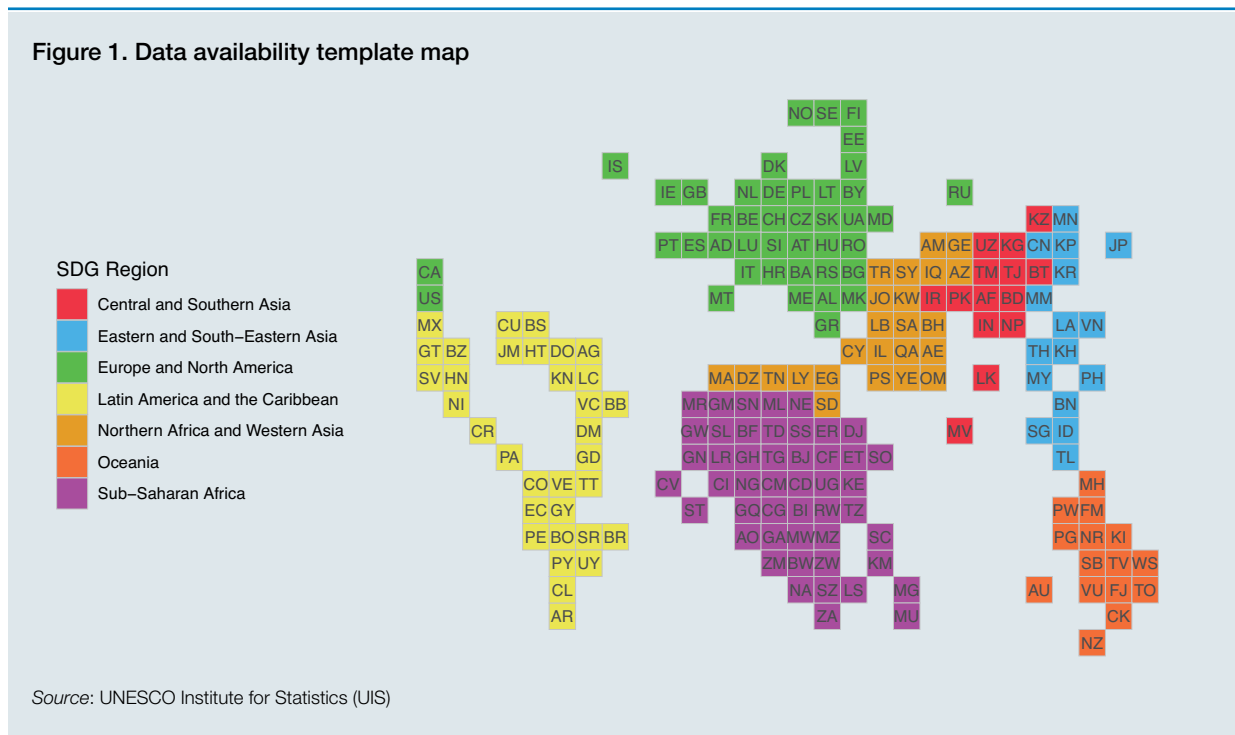
In 2018 the UNESCO Institute for Statistics published the *Quick Guide to Education Indicators for SDG 4* (UIS, 2018a), providing basic explanations of all targets comprising SDG 4 and their respective global indicators. As many countries have already started monitoring these targets, this section presents the status of implementation for each SDG 4 global indicator and how countries are calculating these indicators to monitor their progress, and the mechanisms to report the indicator from countries to the international level.

The description of each indicator follows this order:

**Definition** of the indicator and the main concepts of the SDG correspondent target that it covers.

The map in **Figure 1** provides a visualisation of the current status of **data availability** for the indicator within each UNESCO Member State. This graphical representation of the world map applies the same size for all countries, which are plotted in a relative approximate geographical location.<sup>1</sup> The main objective of these maps is to provide a clear visualization of data availability considering that the global monitoring framework aims to cover all countries, regardless of their size or location. The description of the indicator then focuses on the **method of calculation** – in other words, how countries are combining data from different sources

<sup>1</sup> This visualisation is based on a modified version of the “World Tile Grid Map” elaborated by Jonathan Schwabish and on contributions from Maarten Lambrechts.



to calculate the indicator, as well as the current and **possible data sources** for the indicator, in order to support countries that are not yet monitoring the corresponding target. Finally, each section explains how the data for each of the indicators are reported to the UIS to build the database to monitor SDG 4 at the international level.

#### **4.1.1 Proportion of children and young people (a) in Grade 2 or 3; (b) at the end of primary education; and (c) at the end of lower secondary education achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex**

---

##### **Definition:<sup>2</sup>**

This indicator measures the proportion of children and young people in Grade 2 or 3 of primary education, at the end of primary education and at the end of lower secondary education achieving at least a minimum proficiency level in (i) reading and (ii) mathematics. The minimum proficiency level is defined here as the benchmark of basic knowledge in a domain (mathematics, reading, etc.) measured through learning assessments. Currently, there are no common standards for a global benchmark. While data from many national learning assessments are readily available, every country sets its own objectives and standards, so the performance levels defined in these assessments may not always be consistent.

This proficiency level will be measured relative to new common reading and mathematics scales currently being developed (UIS, 2018b). In the

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2 The definitions included here are shorter and simplified versions of the official definitions. For more information on how the UIS is defining and calculating each global and thematic indicator, see the *UIS Metadata for the global and thematic indicators for the follow-up and review of SDG 4 and Education 2030* ([http://uis.unesco.org/sites/default/files/documents/metadata-global-thematic-indicators-sdg4-education2030-2017-en\\_1.pdf](http://uis.unesco.org/sites/default/files/documents/metadata-global-thematic-indicators-sdg4-education2030-2017-en_1.pdf))

meantime, the UIS reports progress based on national or cross-national initiatives, although they are not yet globally comparable.

##### **Which countries already have data for this indicator?**

The data availability is based mostly on data that are published by agencies and organizations specialised in cross-national learning assessments. Data are comparable for countries which participated in the same assessment. Methods for comparing the results from different cross-national learning assessments are also being developed. The database also contains data from national assessments that followed a specific reporting protocol devised by the UIS to guarantee minimum quality and comparability standards. More details on this reporting protocol are provided later in this report.

**Figure 2** shows countries with at least a single data point from 2010 to 2019 for each level of education, either for reading or mathematics. Considering that these data are produced mostly by specific cross-national projects, current availability is highly dependent on participation in these projects. This explains the differences between availability for primary and secondary levels of education.

##### **How are countries calculating this indicator?**

There are currently various ways of assessing reading and mathematics proficiency. Each national or cross-national assessment project follows different methods and strategies. Large-scale assessments can be divided into two categories: school-based and household surveys.

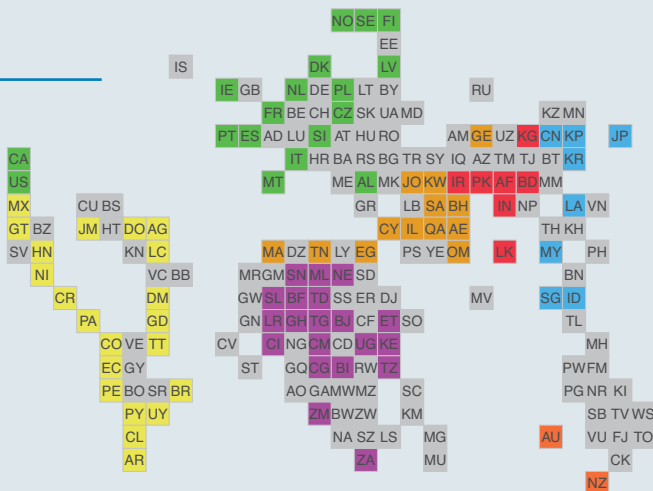
School-based assessments include two types: (i) *national assessments* (or, in principle, sub-national assessments as may occur in decentralised or federal countries) designed to measure specific learning outcomes at a particular age or grade that

Figure 2. Data availability map of global indicator 4.1.1 (reading or mathematics)

(a) in Grade 2 or 3

SDG Region

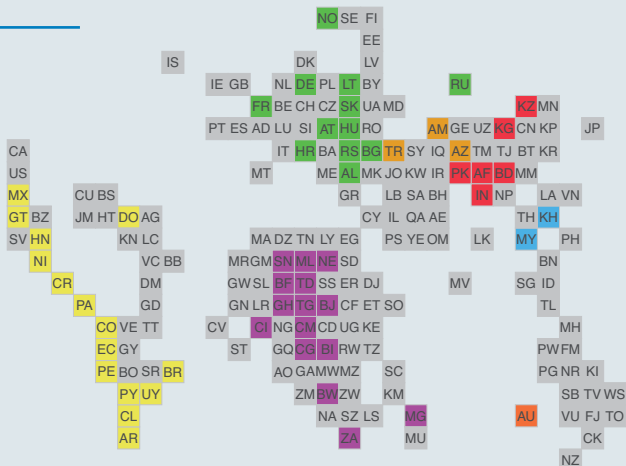
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- Eastern and South-Eastern Asia
- Europe and North America
- Latin America and the Caribbean
- Northern Africa and Western Asia
- Oceania
- Sub-Saharan Africa
- Data not available



(b) at the end of primary

SDG Region

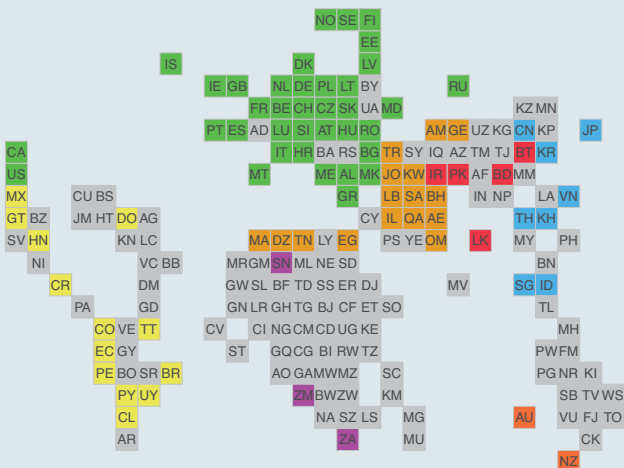
- Central and Southern Asia
- Eastern and South-Eastern Asia
- Europe and North America
- Latin America and the Caribbean
- Northern Africa and Western Asia
- Oceania
- Sub-Saharan Africa
- Data not available



(c) at the end of lower secondary

SDG Region

- Central and Southern Asia
- Eastern and South-Eastern Asia
- Europe and North America
- Latin America and the Caribbean
- Northern Africa and Western Asia
- Oceania
- Sub-Saharan Africa
- Data not available



Source: UNESCO Institute for Statistics (UIS)



are considered relevant for national policymakers; and (ii) *cross-national initiatives* (either regional or international) administered in a number of countries, based on a commonly agreed framework, following similar procedures yielding comparable data on learning outcomes.

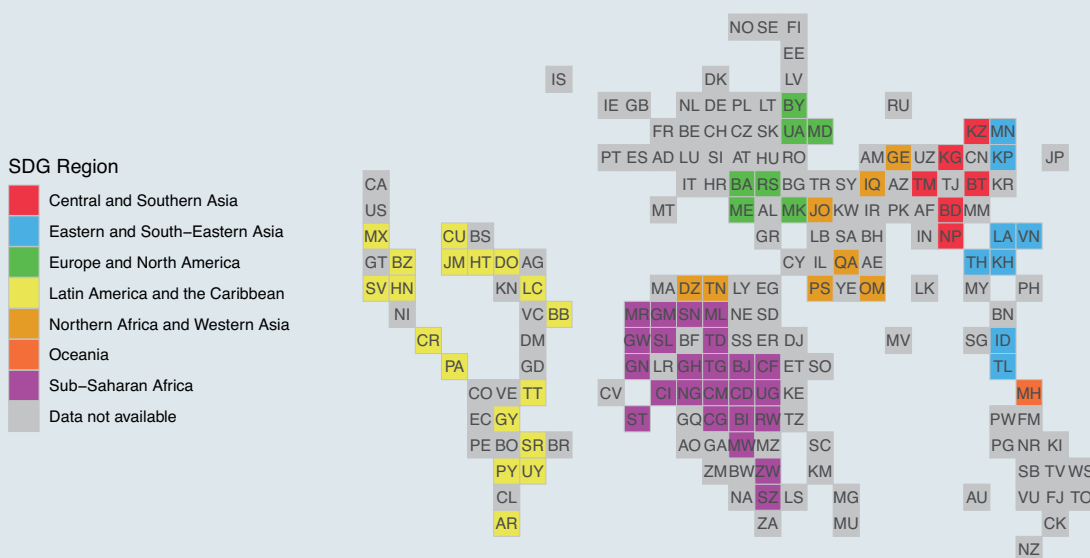
Household-based learning assessments can be used to target populations that may or may not be enrolled in or attending school. These include any household surveys that contain an assessment component in their data collection. A particular case within this last category is citizen-led assessments originating in non-governmental organizations or think tanks where the objective is to exert pressure on governments for accountability and to engage citizens. Considering that they are household-based, such assessments can “capture” the skills of children regardless of whether they are enrolled in school or not.

One of the UIS initiatives to induce international collaboration in the development of large-scale assessments is the Global Alliance to Monitor Learning (GAML). This initiative is designed to improve learning outcomes by supporting national strategies for learning assessments and developing internationally comparable indicators and methodological tools to measure the progress towards key targets of SDG 4. Through a highly collaborative approach, GAML brings together a broad range of stakeholders, including experts and decisionmakers involved in national and cross-national learning assessment initiatives, as well as donors and civil society.

### How can my country calculate this indicator?

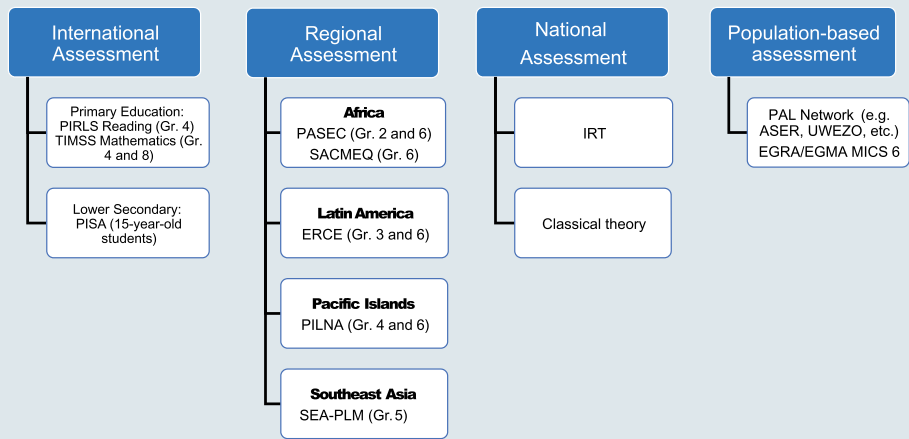
Several regions have implemented projects and mechanisms to collect data or harmonise standards for national assessments (see **Chapter 3**). An important cross-national initiative in the area of household-based assessment is the People’s

Figure 3. An overview of assessment options



Source: UNESCO Institute for Statistics (UIS)

Figure 4. Assessment types and sources of data



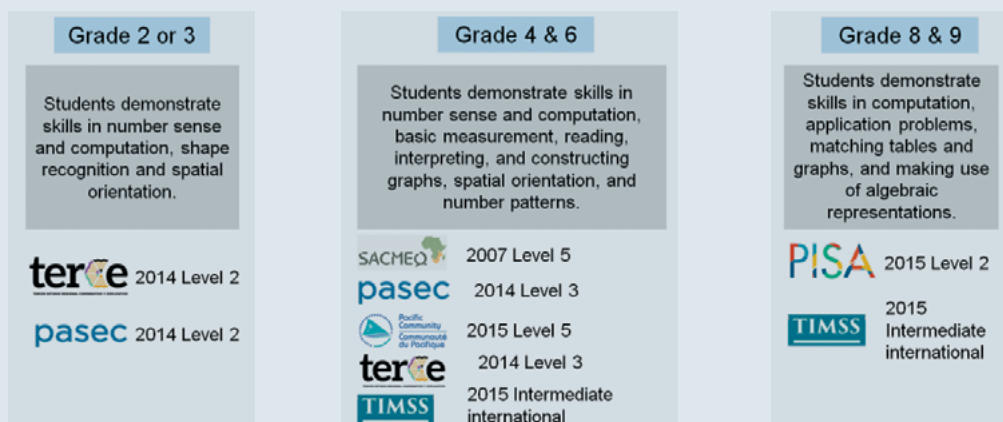
Source: UNESCO Institute for Statistics (UIS)

Action for Learning Network (PAL Network).<sup>3</sup> Present in 13 countries across three continents of the global south, the PAL Network supports the administration of citizen-led assessments of basic

reading and numeracy competencies. The *SDG 4 Data Digest 2018: Data to Nurture Learning*, published by the UIS, provides a very detailed discussion of the current strategies in place to measure learning outcomes in the context of the SDG 4.

<sup>3</sup> <https://palnetwork.org>

Figure 5. Minimum proficiency levels for mathematics



Source: UNESCO Institute for Statistics (UIS)

### How can my country report this indicator?

Countries may report data produced by international, regional or national assessments. **Figure 4** outlines the different types of assessments and possible sources and methods used to report on this indicator.

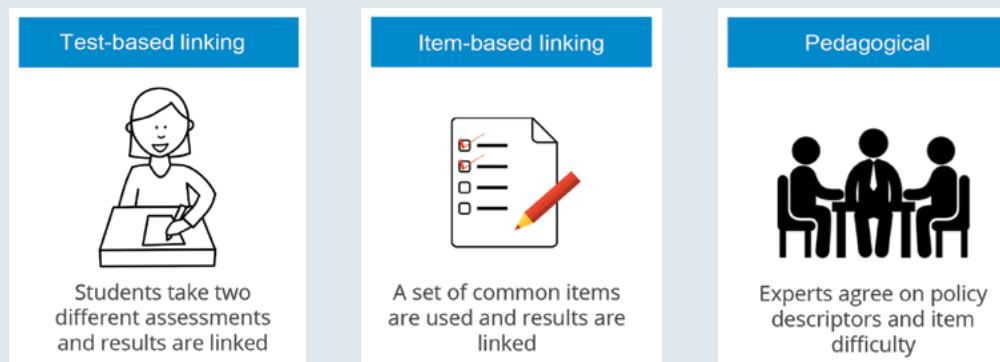
### Minimum proficiency levels

Considering the multiplicity of existing sources used to generate data for this indicator, it is crucial to guarantee minimal standards of quality and comparability in order to monitor adequately the proportion of students achieving the minimum proficiency level (see *Definition*, above). **Figure 5** shows how the definition for these minimum levels can vary among some regional and international assessments.

In this context, GAML and the TCG have been working on a common protocol for countries to report data on this global indicator allowing for the methodological flexibility of these assessments but ensuring alignment and comparability. This can be achieved by linking the minimum proficiency levels of different assessments. **Figure 6** presents three main strategies associated with this protocol.

- *Test-based linking*: students take two assessments (international and regional) and their results from both tests are aligned in such a way that a link can be established between regional assessments conducted at the primary level and the Trends in International Mathematics and Science Study (TIMSS) and Progress in International Reading Literacy Study (PIRLS) International Benchmarks for numeracy and literacy.
- *Item-based linking*: a statistical method that relies on common assessment items given to different students, which are then used to calibrate the level of difficulty of items that are not in common. By ordering them according to level of difficulty, the data compared from different tests allow for the construction of a single scale for each domain.
- *Pedagogical calibration*: operationally, for each assessment (national or international) a group of eight to ten subject matter experts convene and provide individual and independent judgements about each item on the assessment test to define alignment and set initial cut scores based on their understanding

**Figure 6. Solutions for producing comparable data from different assessments**



Source: UNESCO Institute for Statistics (UIS)

of proficiency level indicators and experience within the student populations.

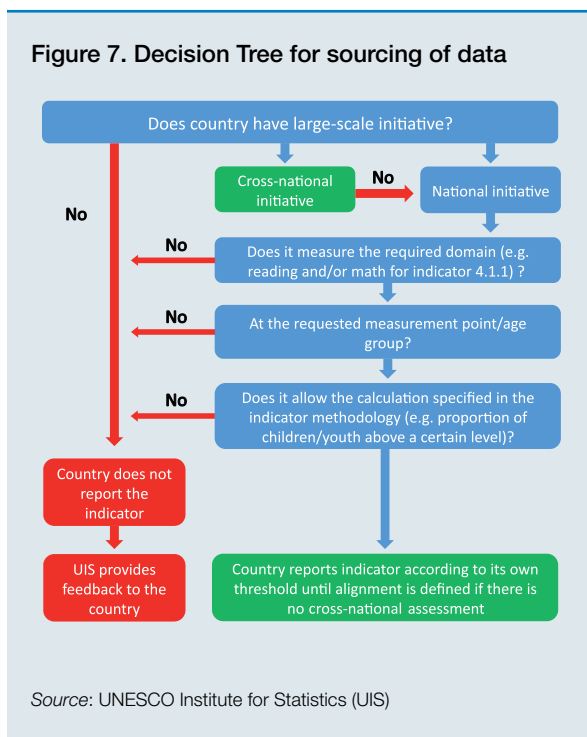
### Decision Tree for sourcing of data

Until the process of equating international, regional and national assessments is produced, it is important to use only one source of information so that progress can be tracked on a comparable basis. The restriction is one level and domain that should be maintained across years. A country could have different reporting sources for a given year for different levels. For instance, the same country could report TERCE results for primary and PISA results for secondary.

**Figure 7** outlines the interim strategy for reporting based on countries' data availability.

To report on SDG Indicator 4.1.1 using national assessments, countries must ensure compliance with the following main components:

- Use of item response theory;
- Presentation of results as a percentage of students by proficiency levels;
- Alignment of the proficiency level descriptor with the global minimum proficiency level;
- Content of the NLA must sufficiently cover the Global Content Framework for the relevant domain – reading and/or mathematics (the content alignment tool allows for this mapping);
- The NLA complies with the minimum level of good practices (e.g. procedural alignment tool); and
- Footnotes are added to the data points (e.g. name of the national assessment, minimum proficiency level and grade).



For more information about international reporting for this global indicator, consult the following UIS publications:

- [\*Manual of Good Practices in Learning Assessment\*<sup>4</sup>](#)
- [\*Quick Guide: Making the Case for a Learning Assessment\*<sup>5</sup>](#)
- [\*Quick Guide: Implementing a National Learning Assessment\*<sup>6</sup>](#)
- [\*Procedural Alignment Tool\*<sup>7</sup>](#)

4 <http://uis.unesco.org/sites/default/files/documents/principles-good-practice-learning-assessments-2017-en.pdf>

5 [http://uis.unesco.org/sites/default/files/documents/quick-guide2-making-case-learning-assessments-2018-en\\_2.pdf](http://uis.unesco.org/sites/default/files/documents/quick-guide2-making-case-learning-assessments-2018-en_2.pdf)

6 <http://uis.unesco.org/sites/default/files/documents/quick-guide-3-implementing-national-learning-assessment.pdf>

7 [http://gaml.uis.unesco.org/wp-content/uploads/sites/2/2018/10/GAML5\\_4.1.1\\_02-Procedure-Alignment-Tool\\_Working-Paper-for-Endorsement-FINAL.pdf](http://gaml.uis.unesco.org/wp-content/uploads/sites/2/2018/10/GAML5_4.1.1_02-Procedure-Alignment-Tool_Working-Paper-for-Endorsement-FINAL.pdf)

### 4.2.1 Proportion of children under 5 years of age who are developmentally on track in health, learning and psychosocial well-being, by sex

#### Definition:

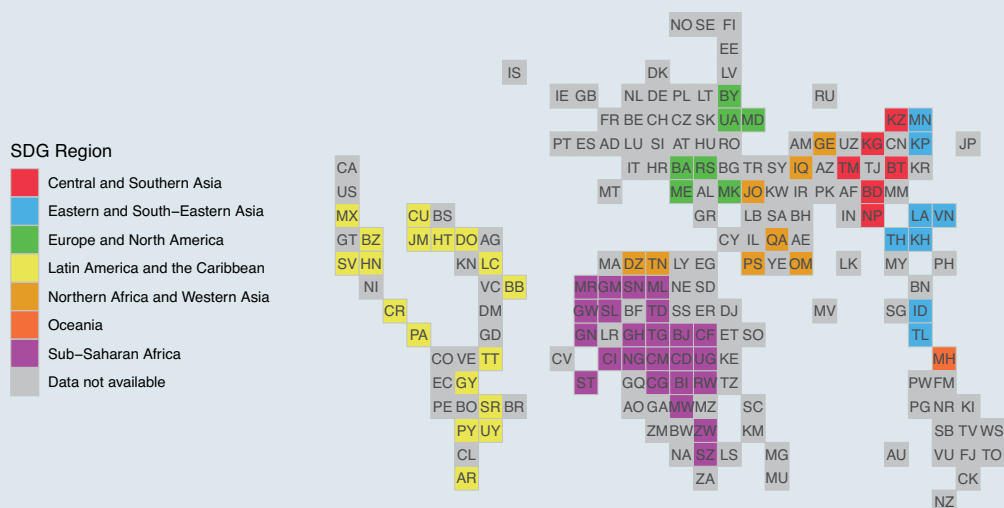
This indicator aims to measure several complex concepts related to the quality of care and education, access to programmes and child development and learning at the start of school. It is expected that by the end of 2019, the Inter-Agency and Expert Group on SDG Indicators will approve a common methodology for this indicator. For the time being, the indicator is defined as the percentage of children aged 36 to 59 months who are developmentally on-track in at least three of the following four domains: literacy-numeracy, physical, socio-emotional and learning.

The domains included in this indicator and currently being used as a proxy for reporting on SDG Indicator 4.2.1 come from the Early Childhood Development Index (ECDI) of the Multiple Indicator

Cluster Survey (MICS). These domains are operationally defined as follows:

- *Literacy-numeracy:* Children are identified as being developmentally on track if they can do at least two of the following: identify/name at least ten letters of the alphabet; read at least four simple, popular words; and/or know the name and recognise the symbols of all numbers from 1 to 10.
- *Physical:* If the child can pick up a small object with two fingers, like a stick or rock from the ground, and/or the mother/primary caregiver does not indicate that the child is sometimes too sick to play, then the child is regarded as being developmentally on track in the physical domain.
- *Social-emotional:* The child is considered developmentally on track if two of the following are true: The child gets along well with other children; the child does not kick, bite or hit other

Figure 8. Data availability map of global indicator 4.2.1 (2010-2019)



Source: UNESCO Institute for Statistics (UIS)

children; and the child does not get distracted easily.

- **Learning:** If the child follows simple directions on how to do something correctly and/or when given something to do, and is able to do it independently, then the child is considered to be developmentally on track in the learning domain.

### Which countries already have data for this indicator?

Countries gather data on children's developmental status through household surveys such as UNICEF-supported MICS or demographic and health surveys. In high-income countries some of the individual items included in the ECDI may be collected through other mechanisms (such as other surveys or administrative records).

### How are countries calculating this indicator?

Household surveys such as UNICEF-supported MICS have been collecting data on this indicator (through

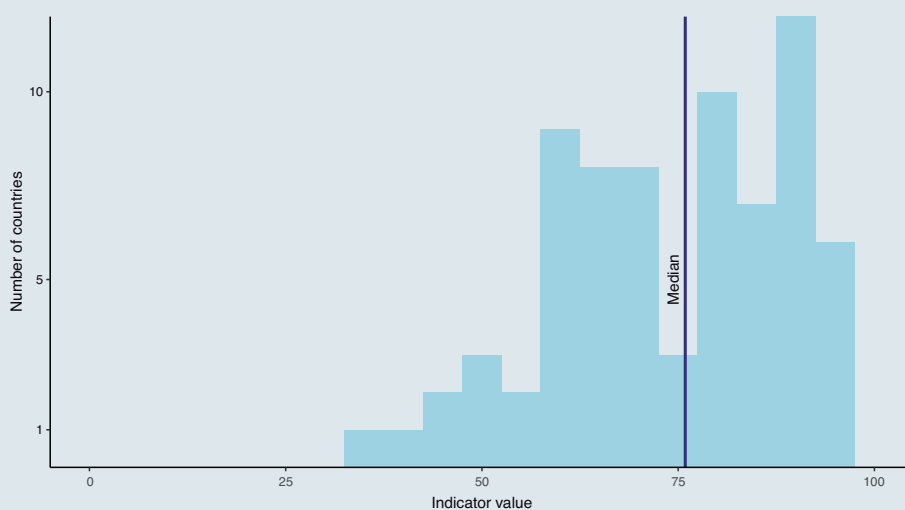
the ECDI) in low- and middle-income countries since around 2010. Many of the individual items included in the ECDI are collected through other mechanisms in high-income (OECD) countries as well.

**Figure 9** shows the distribution of countries' values for this indicator using the latest year available since 2010. The indicator varies from 32% to 97% among countries with available data, and half of them have more than 75% of children who are developmentally on track following the current operational definition of the indicator.

### How can my country calculate this indicator?

UNICEF assists countries in collecting and analysing data in order to fill data gaps for monitoring the situation of children and women through its international household survey initiative, the MICS. For the fourth round of MICS (MICS 4), data collection was expanded to incorporate all four domains that comprise the current operational definition for this indicator.

Figure 9. Distribution of indicator 4.2.1 among countries (2010-2019)



Source: UNESCO Institute for Statistics (UIS)

As of 2018, UNICEF launched a new country consultation process with national authorities on selected child-related global SDG indicators as custodian or co-custodian to meet emerging standards and guidelines on data flows for global reporting of SDG indicators. This consultation placed a strong emphasis on technical rigour, country ownership and use of official data and statistics. The consultation process solicited feedback directly from national statistical offices, as well as other government agencies responsible for official statistics, on the compilation of the indicators, including the data sources used, and the application of internationally agreed definitions, classifications and methodologies to obtain the data.

### How can my country report this indicator?

The UIS has established direct collaborations with international organizations that are running assessments related to this indicator. These organizations send countries' data to the UIS following the standards and procedures of the

monitoring framework. Therefore, countries participating in assessments administered by these organizations do not need to complete any additional survey to report data to the UIS.

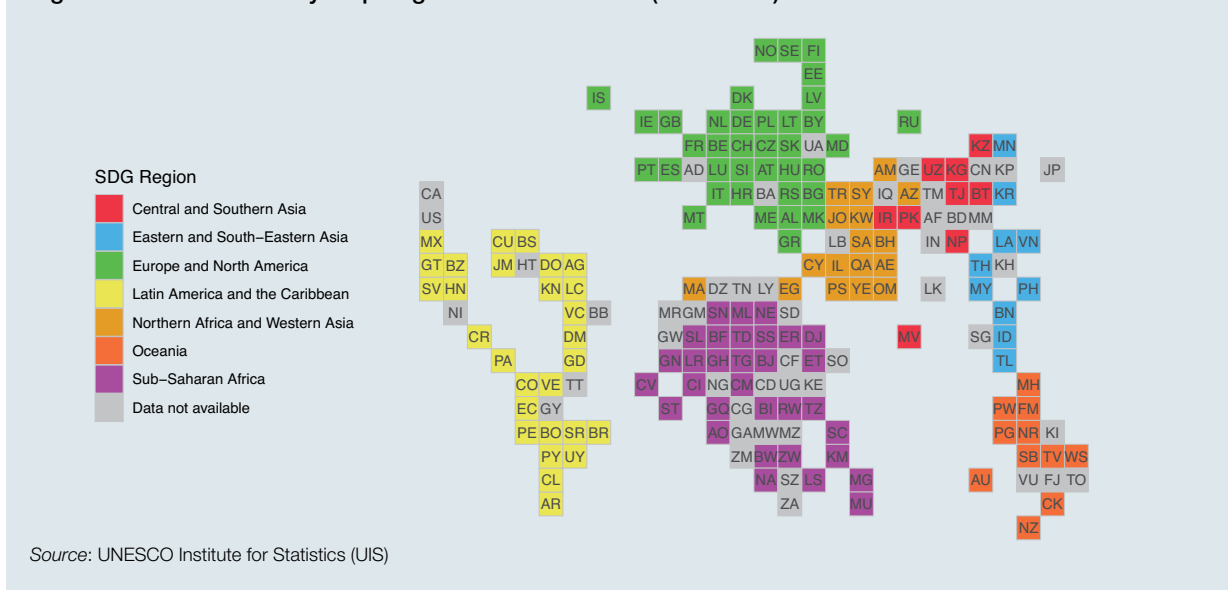
### 4.2.2 Participation rate in organized learning (one year before the official primary entry age), by sex

#### Definition:

The participation rate in organized learning (one year before the official primary entry age) is defined as the percentage of children of a given age who participate in one or more organized learning programmes, including programmes that offer a combination of education and care. Participation in early childhood and in primary education are both included. The age will vary by country depending on the official age for entry into primary education.

An organized learning programme is one that consists of a coherent set or sequence of

Figure 10. Data availability map of global indicator 4.2.2 (2010-2019)



educational activities designed with the intention of achieving predetermined learning outcomes or the accomplishment of a specific set of educational tasks. Early childhood and primary education programmes are examples of organized learning programmes.

Early childhood and primary education are defined in the 2011 revision of the International Standard Classification of Education (ISCED 2011). Early childhood education is typically designed with a holistic approach to support children's early cognitive, physical, social and emotional development and to introduce young children to organized instruction outside the family context. Primary education offers learning and educational activities designed to provide students with fundamental skills in reading, writing and mathematics and establish a solid foundation for learning and understanding within core areas of knowledge and personal development. It focuses on learning at a basic level of complexity with little, if any, specialisation.

The official primary entry age is the age at which children should start educational level 1 of the International Standard Classification of Education (ISCED Level 1). Where more than one age is specified, for example, in different parts of a country, the most common official entry age (i.e. the age at which most children in the country are expected to start primary) is used for the calculation of this indicator at the global level.

### **Which countries already have data for this indicator?**

Indicator 4.2.2 is among the global indicators with the best coverage. This is due to the existing country-level capacity to collect administrative data on enrolment in formal education. In addition, the cooperation between national governments and the UIS for data on enrolment is well established.

### **How are countries calculating this indicator?**

The UIS produces time series based on enrolment data reported by ministries of education or national statistical offices and population estimates produced by the UN Population Division. Enrolment data are collected through the annual UIS Survey of Formal Education.

Countries usually report administrative data from schools and other centres of organized learning or data from household surveys on enrolment by single year of age. In addition, countries report figures from population censuses and surveys for population estimates by single year of age. Finally, administrative data from ministries of education on the official entrance age to primary education are reported according to the levels of education defined in ISCED to ensure international comparability of the resulting indicators. The indicator can also be calculated from household surveys and population censuses that collect data on attendance in early childhood and primary education by single year of age.

**Figure 11** shows the distribution of the countries' values for this indicator using the latest year available since 2010. The indicator varies from 10% to 99% among countries with available data, and in half of them more than 87% of children one year before the official primary entry age participate in organized learning.

### **How can my country calculate this indicator?**

As participation data are widely regarded as a primary tool for education planning, almost all countries conduct regular data collections on enrolment and regular censuses. However, there are still some gaps in relation to international reporting. This may be due to the lack of articulation between the national agencies responsible for collecting administrative data on enrolment and agencies providing data on



population estimates. In addition, international reporting requires some work from countries to ensure that the national data meet a minimal quality standard for international comparison. The UIS has developed a series of tools and strategies to help national statistical offices and ministries deal with and overcome challenges related to data quality. The 2017 UIS Data Digest (*The Quality Factor: Strengthening National Data to Monitor Sustainable Development Goal 4*) describes these strategies, focusing on data quality as the foundation for an effective SDG 4 monitoring framework.

### How can my country report this indicator?

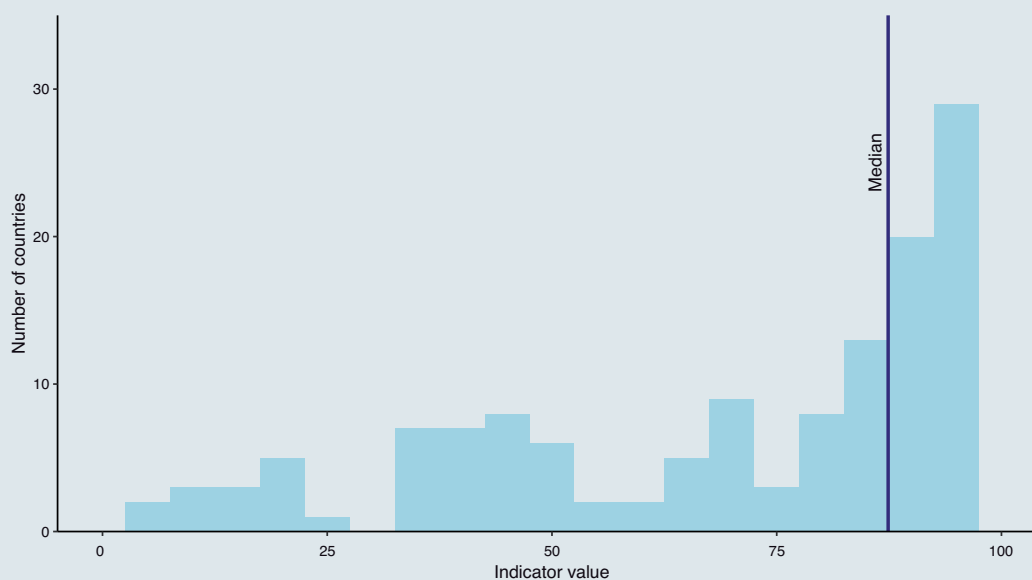
The UIS works regularly with national statistical offices and statistical units within ministries of education to gather information on participation in education. The data for indicator 4.2.2 are collected by the UIS via two mechanisms:

- **UIS Survey of Formal Education:** designed to collect internationally comparable data on formal education at the early childhood, primary, secondary and post-secondary non-tertiary levels. The survey is administered every year and its data form a central part of the database of education statistics maintained by the UIS.<sup>8</sup>
- **UOE Data Collection on Formal Education:** administered jointly by the UIS, the Organisation for Economic Co-operation and Development (OECD), and the European Statistical Office (EUROSTAT). Countries participating in the UOE data collection cooperate to gather the information, to develop and apply common definitions and criteria for quality control and the verification of data.<sup>9</sup>

8 <http://uis.unesco.org/en/uis-questionnaires>

9 <http://uis.unesco.org/sites/default/files/documents/uoe-data-collection-manual-2019-en.pdf>

Figure 11. Distribution of indicator 4.2.2 among countries (2010-2019)



Source: UNESCO Institute for Statistics (UIS)

### 4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex

#### Definition:

Percentage of youth and adults in a given age range (e.g. 15 to 24 years, 25 to 64 years, etc.) participating in formal or non-formal education or training in a given time period (e.g. last 12 months).

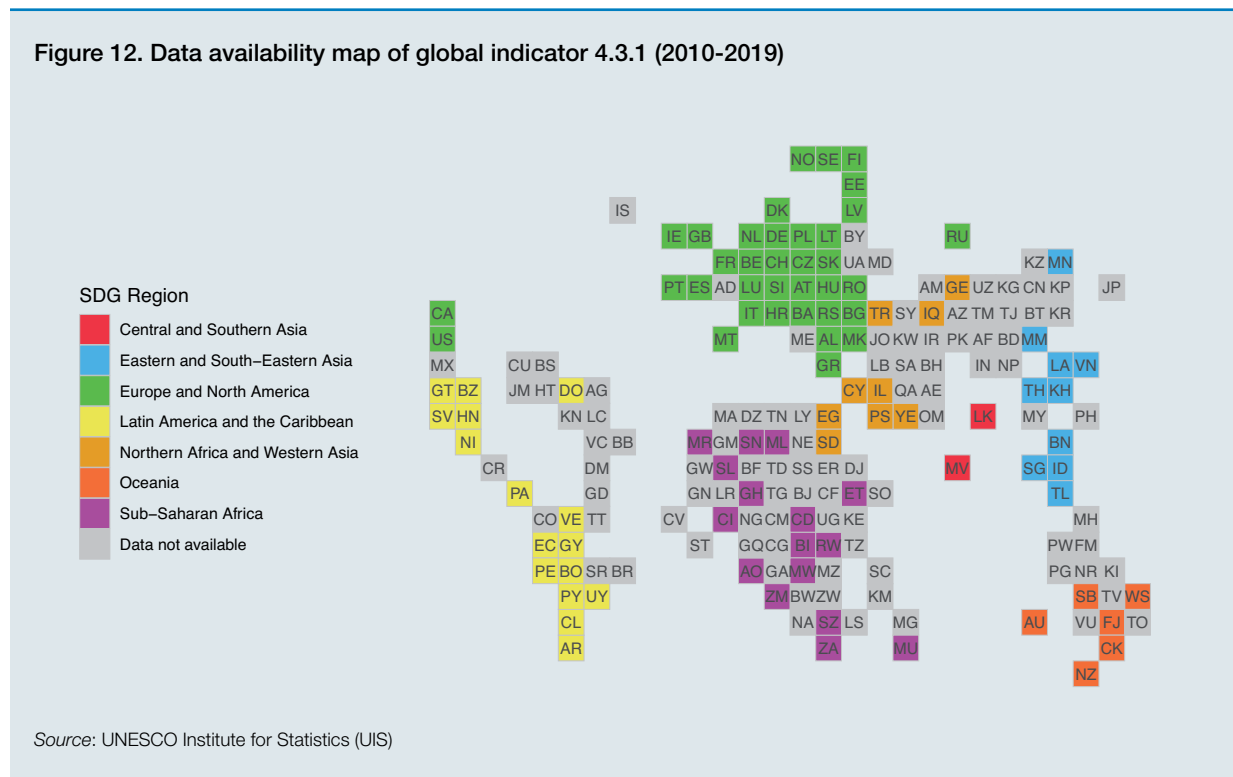
*Formal education and training* is defined as education provided by the system of schools, colleges, universities and other formal educational institutions that normally constitutes a continuous ladder of full-time education for children and young people, generally beginning at the age of 5 to 7 and continuing to up to 20 or 25 years old. In some countries, the upper parts of this ladder are organized programmes of joint part-time

employment and part-time participation in the regular school and university system.

*Non-formal education and training* is defined as any organized and sustained learning activities that do not correspond exactly to the above definition of formal education. Non-formal education may therefore take place both within and outside educational institutions and cater to people of all ages. Depending on national contexts, it may cover educational programmes to impart adult literacy, life skills, work skills and general culture.

#### Which countries already have data for this indicator?

The following chart presents countries that are providing data for indicator 4.3.1 by region. Those countries in grey do not have data in the international database from 2010 to 2019.



### How are countries calculating this indicator?

Most countries providing data for indicator 4.3.1 are European countries, as one of the main international data sources is the European Adult Education Survey (AES). Other relevant sources for this indicator are the OECD's Survey of Adult Skills in its Programme for the International Assessment of Adult Competencies (PIAAC) and the ILO School-to-Work Transition Survey (SWTS).

In these projects, a nationally representative sample of youth and adults is asked whether they have participated in formal and non-formal education and training in the previous 12 months. The question has the following wording in the AES:

*During the last 12 months, that is since <<month, year>> have you been a student or apprentice in formal education or training? [1] Yes [2] No*

*During the last 12 months, have you participated in any of the following activities – completed or ongoing – with the intention to improve knowledge or skills in any area (including hobbies) either in leisure time or in working time? a) Courses, b) Workshops and Seminars, c) Guided on-the-job training, d) Private lessons? [1] Yes [2] No*

To calculate indicator 4.3.1, the participating countries use data from these two questions combined with information regarding age and gender. The final indicator is the percentage of affirmative answers for participation in education and training for each gender/age group.

**Figure 13** shows the distribution of countries' values for this indicator using the latest year available since 2010. The indicator varies from 0% to 74% among countries with available data, and in half of them less than 10% of the population aged 15 years and above participated in formal

or non-formal education and training within the previous 12 months.

### How can my country calculate this indicator?

#### Household surveys

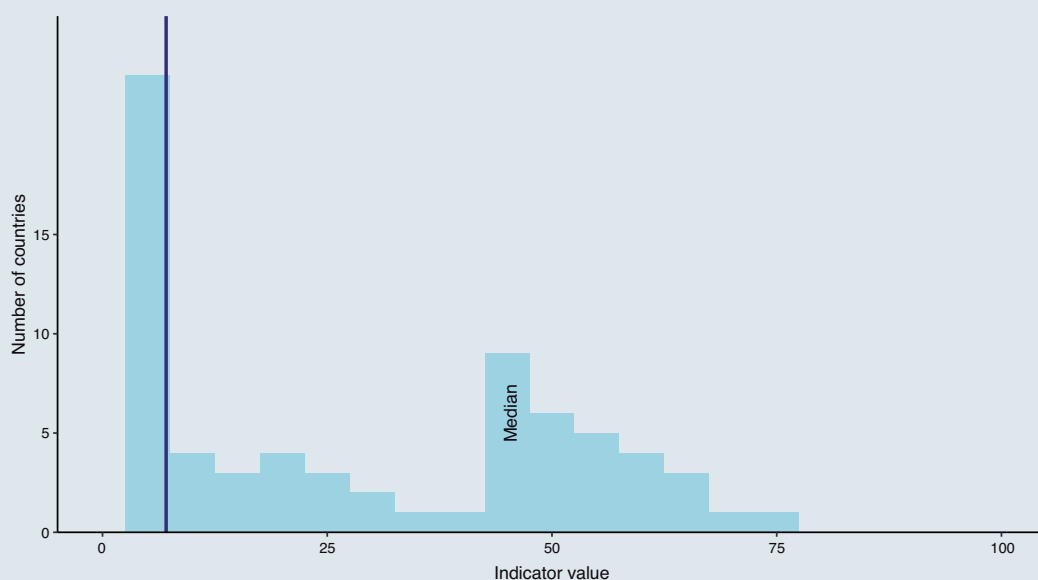
For countries that do not participate in these comparative surveys, a potential data source is the official national household survey. Most UN Member States administer regular household surveys that are representative of the national adult population. However, there are two main challenges related to the use of these data: first, the establishment of a common period of reference as national data collections differ substantially in this aspect, varying from "last week" to an undefined period of time. Secondly, the types of non-formal education and training programmes that are included also varies considerably among countries, posing a challenge to comparability.

The TCG has developed a set of questions that can provide appropriate data for the indicator (see **Appendix A**). This set of questions, as proposed by the TCG, can also generate data for thematic indicators 4.3.3 (technical and vocational education) and 4.6.3 (literacy programmes). Based on language already tested in comparative surveys, these items could be added to the questionnaire either as part of the regular data collection or as additional questions administered on a less regular basis. Costa Rica, for instance, collects information on participation in formal and non-formal education and training in its regular labour force survey.

#### Administrative data

The information required for the monitoring of target 4.3 can also be collected via administrative data sources. Almost all countries collect data on enrolment in formal education and training courses. Some countries also produce data on enrolment

Figure 13. Distribution of indicator 4.3.1 among countries (2010-2019)



Source: UNESCO Institute for Statistics (UIS)

from non-formal education and training. The total number of youth and adults participating in these courses divided by the total number of youth and adults in the population provide the participation rate in formal and non-formal education and training.

In this sense, administrative data may offer an alternative source to the calculation of indicator 4.3.1. However, it is important to emphasise that this strategy is generally more affected by quality issues such as duplication and poor coverage. The scope of non-formal education and training is so wide (short distance learning courses, seminars and workshops, on-the-job training, etc.) that it is not feasible to expect full coverage using administrative data. The heterogeneity, multiplicity and ever-changing nature of non-formal education and training is a challenge for established standardised information systems based on administrative data.

Therefore, without a very organized data structure based on a unique identification of individuals, it is probable that statistics regarding participation in non-formal education and training based on administrative data will certainly result in data duplication, i.e. estimating a higher level of participation than participants. Consequently, a national household survey is the preferable source for the international comparison of indicator 4.3.1.

#### How can my country report this indicator?

The UIS works directly with international organizations that are administering data collections related to this indicator. These organizations send countries' data to the UIS following the standards and procedures of the monitoring framework. Therefore, countries participating in relevant projects administered by these organizations do not need to complete any additional surveys to report data to the UIS.

#### 4.4.1. Proportion of youth/adults with information and communications technology (ICT) skills, by type of skill

##### Definition:

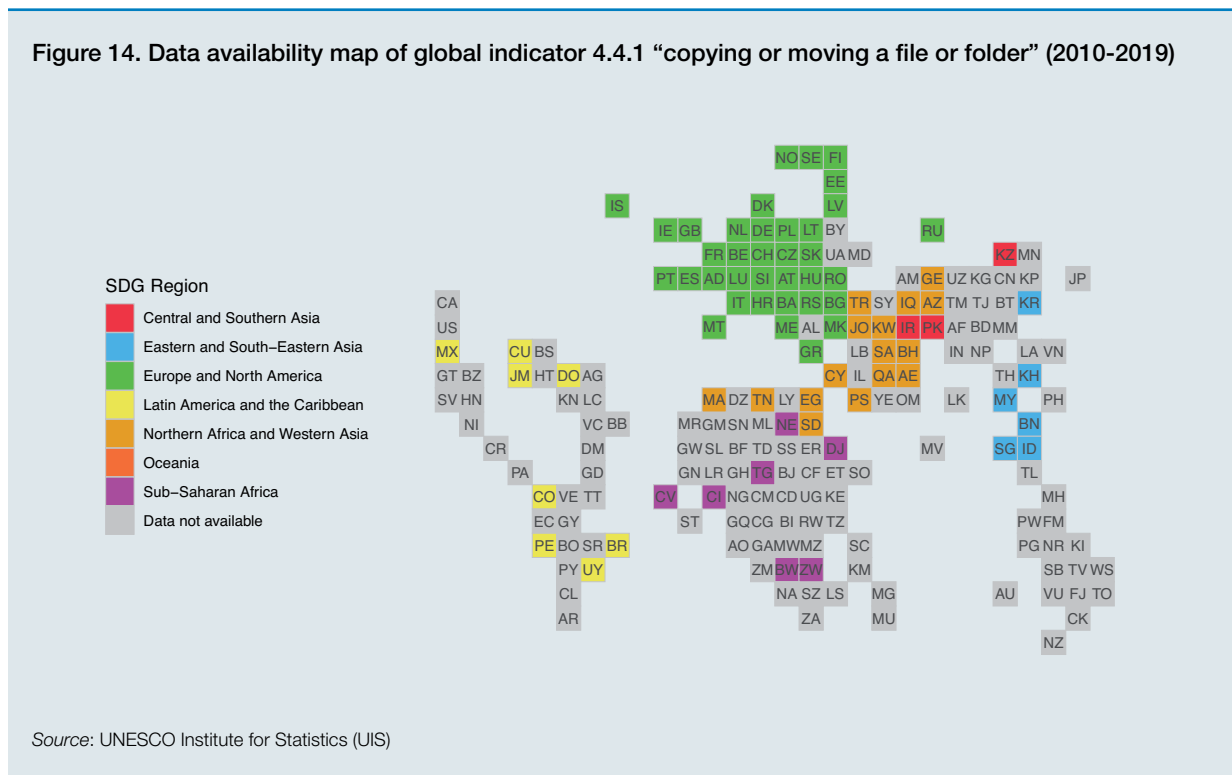
Percentage of youth (aged 15-24 years) and adults (aged 15 years and above) that have undertaken certain computer-related activities in a given time period (e.g. last three months).

Computer-related activities to measure ICT skills include:

- Copying or moving a file or folder;
- Using copy and paste tools to duplicate or move information within a document;
- Sending e-mails with attached files (e.g. document, picture, video);
- Using basic arithmetic formulas in a spreadsheet;
- Connecting and installing new devices (e.g. modem, camera, printer);
- Finding, downloading, installing and configuring software;
- Creating electronic presentations with presentation software (including text, images, sound, video or charts);
- Transferring files between a computer and other devices; and
- Writing a computer program using a specialised programming language.

A *computer* refers to a desktop computer, a laptop (portable) computer or a tablet (or similar handheld

Figure 14. Data availability map of global indicator 4.4.1 “copying or moving a file or folder” (2010-2019)



device). It does not include equipment with some embedded computing abilities, such as smart TV sets or mobile phones.

### **Which countries already have data for this indicator?**

**Figure 14** presents countries that are providing data for indicator 4.4.1 by region. Countries in grey do not have data in the international database for the 2010 to 2019 period.

### **How are countries calculating this indicator?**

Currently, countries with data available for this indicator administer national surveys with questions based on the methodology adopted by the International Telecommunications Union (ITU) to assess ICT skills. Eurostat organizes the data collection for 32 European countries, and the ITU is responsible for standardising the data collection in other countries.

In these surveys, respondents who have used a computer (desktop, laptop, tablet or similar) in the last 3 to 12 months, are asked the following questions:<sup>10</sup>

*Have you used a computer (desktop, laptop, tablet or similar device) from any location in the last three months?*

*Which of the following computer-related activities have you carried out in the last three months?*

These questions are followed by each of the activities described in the definition of the indicator. The respondents declare whether they have or have not carried out each one of them. These answers are then combined with information about age.

<sup>10</sup> International Telecommunication Union (2014). Manual for Measuring ICT Access and Use by Households and Individuals.

**Figure 15** shows the distribution of the countries' values for this indicator using the latest year available since 2010. The indicator varies from 4% to 92% among countries with available data, and in half of them more than 54% of the youth and adult population declared that they have copied or moved a file or folder using a computer.

### **How can my country calculate this indicator?**

#### **Household surveys**

Most countries currently providing data for this indicator included the relevant questions in a nationally representative household survey. The interview follows the same method of conventional social surveys based on self declaration, i.e. it does not require a direct assessment of skills.

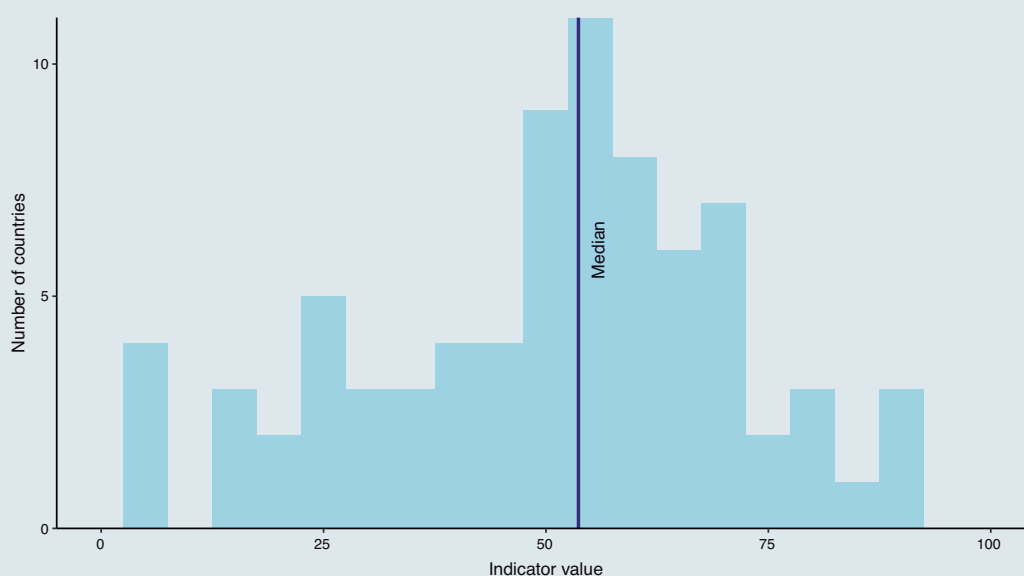
#### **School surveys**

For countries that do not yet administer a representative household survey with similar questions, indicator 4.4.1 could also initially use school surveys as a proxy source. The relevant questions regarding use of computer and computer-related activities can be included in regular school surveys or questionnaires associated with learning assessments and provide information for the youth population attending schools. This solution may be more feasible for countries in the short term due to the comparatively low cost of having additional questions in a national learning assessment in relation to a household survey. However, school surveys cannot be used as an official source for international comparison as the indicator seeks to provide an assessment for the entire youth and adult population, those who attend schools and those who are out of school.

### **How can my country report this indicator?**

The UIS works directly with the International Telecommunications Union (ITU) as co-custodian

Figure 15. Distribution of indicator 4.4.1 (“copying or moving a file or folder”) among countries (2010-2019)



Source: UNESCO Institute for Statistics (UIS)

agencies. The ITU collects data on access to and use of ICTs by households and individuals. These data are collected annually through two questionnaires sent to national statistical offices.<sup>11</sup>

**4.5.1 Parity indices (female/male, rural/urban, bottom/top wealth quintiles and others such as disability status, indigenous peoples and the conflict-affected, as data become available) for all education indicators on this list that can be disaggregated**

**Definition:**

Parity indices require data for specific groups of interest. They represent the ratio of the indicator value for one group to the value for another

11 <https://www.itu.int/en/ITU-D/Statistics/Pages/datacollection/default.aspx>

group. Typically, the group more likely to be disadvantaged is in the numerator. A parity index of exactly 1 means that the indicator values of the two groups are identical, while by convention, values between 0.97 and 1.03 are interpreted to reflect parity between the two groups.

**Which countries already have data for this indicator?**

Using indicator 4.1.1b as a reference, **Figure 16** shows the data availability for different parity indices. Considering that existing internationally comparable data on learning outcomes are produced by specific cross-national projects, the availability is dependent on the presence of specific questions about students’ characteristics. For instance, the immigration parity index is available for countries participating in the Latin American Laboratory for Assessment of the Quality of Education (LLECE) for which assessments do include

questions on immigration. The figure also indicates that there is a large proportion of countries for which the data cannot be disaggregated by urban or rural (location parity index) or socioeconomic status (SES parity index).

**How are countries calculating this indicator?**

The gender parity index (GPI), for instance, represents the ratio of the indicator value for girls to the value for boys. Therefore, the GPI for 4.1.1b results from the division of the indicator’s value among girls by the value among boys. A value between 0.97 and 1.03 would reflect gender parity, while values below 0.97 show an advantage for boys and values above 1.03 reflect an advantage for girls.

The sources for parity indices are the very indicators calculated for each of the other targets. However, not all data used by the global and thematic indicators allow the types of disaggregation required for the calculation of the parity indices.

**4.6.1 Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex**

**Definition:**

The percentage of youth (aged 15 to 24 years) and of adults (aged 15 years and above) who have achieved or exceeded a given level of proficiency in (a) literacy and (b) numeracy. The fixed or minimum level of proficiency will be measured relative to literacy and numeracy scales defined according to national, regional and international learning assessments.

The *fixed level of proficiency* is the minimum benchmark of basic knowledge in a domain (literacy or numeracy) measured through learning assessments. Currently, no common standards to determine the fixed level of proficiency have been validated by the international community or countries. The indicator shows data published by

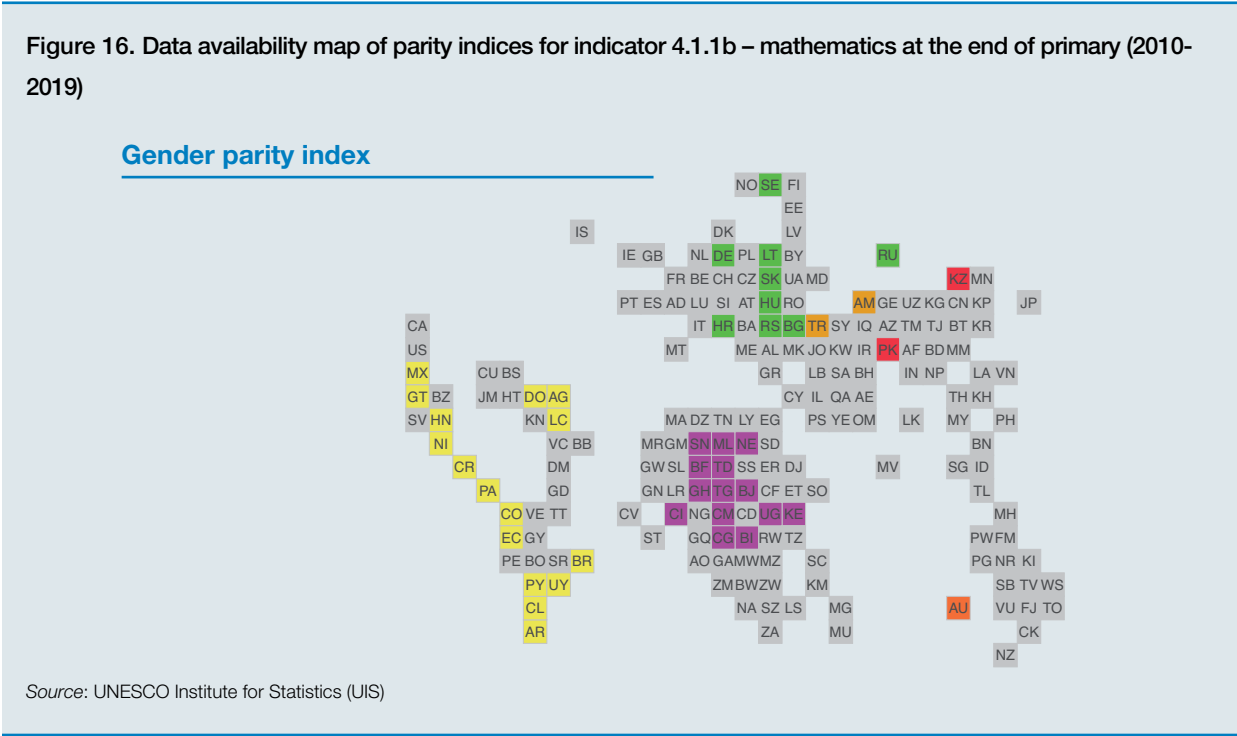
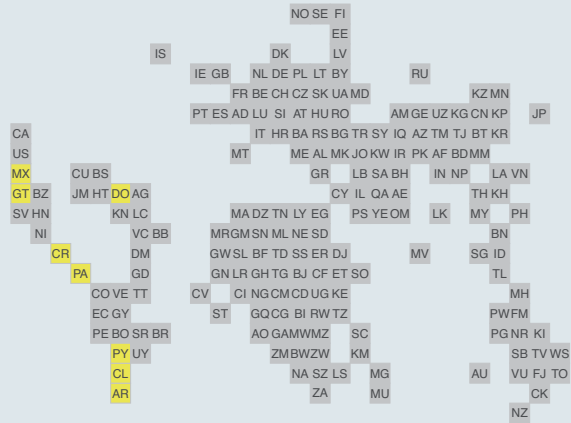


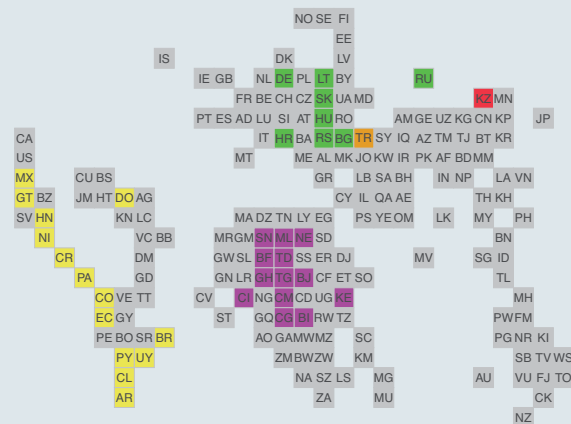


Figure 16 (cont.). Data availability map of parity indices for indicator 4.1.1b – mathematics at the end of primary (2010-2019)

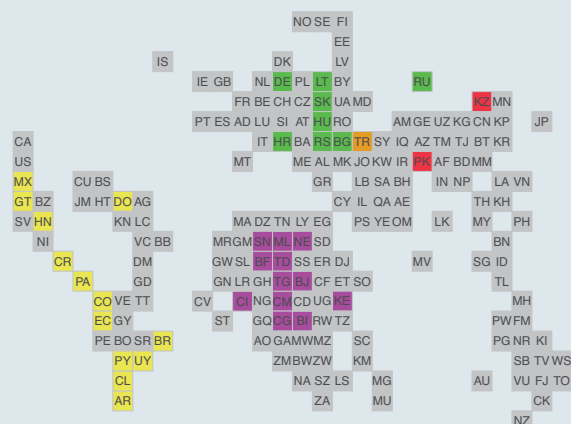
### Immigration parity index



### Location parity index



### SES parity index



Source: UNESCO Institute for Statistics (UIS)

each of the agencies and organizations specialised in cross-national household-based assessment surveys of youth and adult populations.

The concepts of *functional literacy* and *functional numeracy* are based on the UNESCO definitions, which cover a continuum of proficiency levels rather than a dichotomy. A person is *functionally literate* if they can engage in all those activities in which literacy is required for the effective functioning of their group and community, and enables them to continue to use reading, writing and calculation for their own and the community's development.

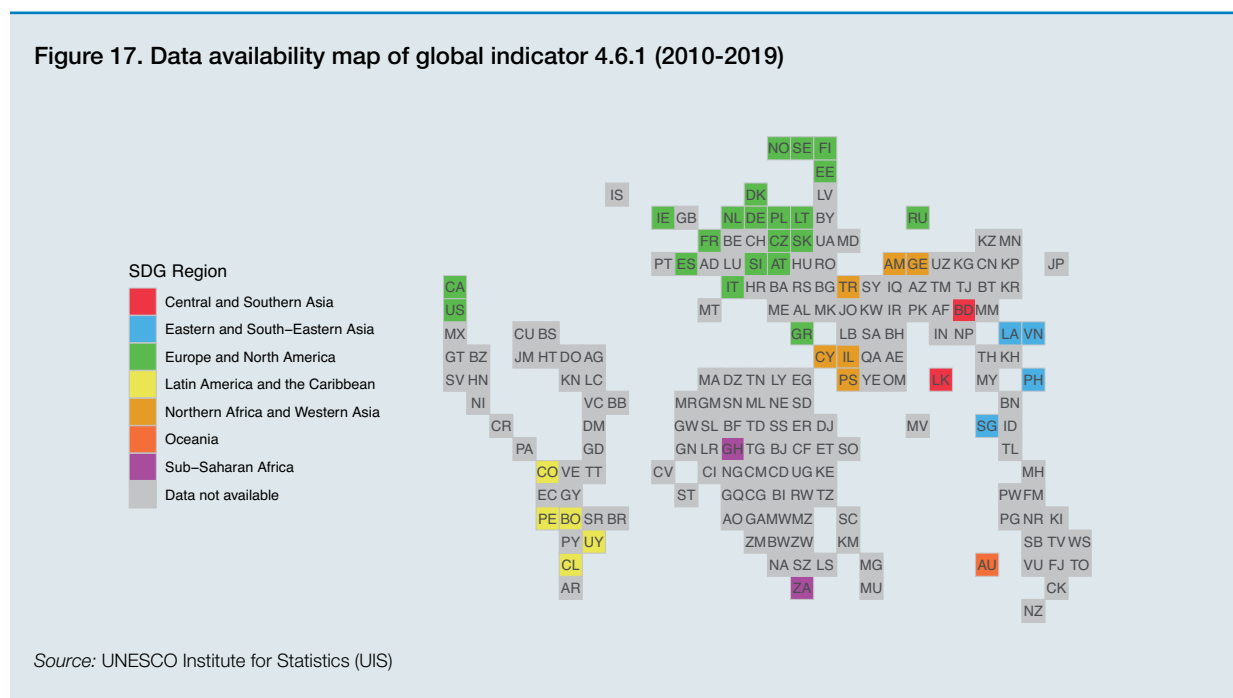
### How are countries calculating this indicator?

Data for this indicator are collected through literacy and numeracy assessment surveys among youth and adult populations. Several countries report data based on cross-national projects such as the OECD's Survey of Adult Skills in its Programme for the International Assessment of Adult

Competencies (PIAAC) and the World Bank's Skills Towards Employment and Productivity (STEP).

The administration of these surveys involves a direct assessment of the respondents' literacy and numeracy skills. Participants in PIAAC, for instance, can take either a computer or a paper-based test comprising a series of tasks designed to resemble activities that an individual would normally carry out in everyday life. The results of this test provide an assessment of the literacy and numeracy proficiency level of the respondents. Both PIAAC and STEP surveys can be put on a common scale as they are linked psychometrically by design.

Figure 18 shows the distribution of the countries' values for this indicator using the latest year available since 2010. The indicator varies from 46% to 99% among countries with available data, and in half of them more than 84% of the youth and adult population have achieved or exceeded a minimum level of proficiency in literacy.



## How can my country calculate this indicator?

### Household surveys

For operational reasons, literacy levels have often been monitored in very limited terms, such as the ability to read and write a simple statement. This is usually done using the following dichotomous question in household surveys: “Do you know how to read and write?” However, this approach does not adequately encompass the complexity of literacy and numeracy.

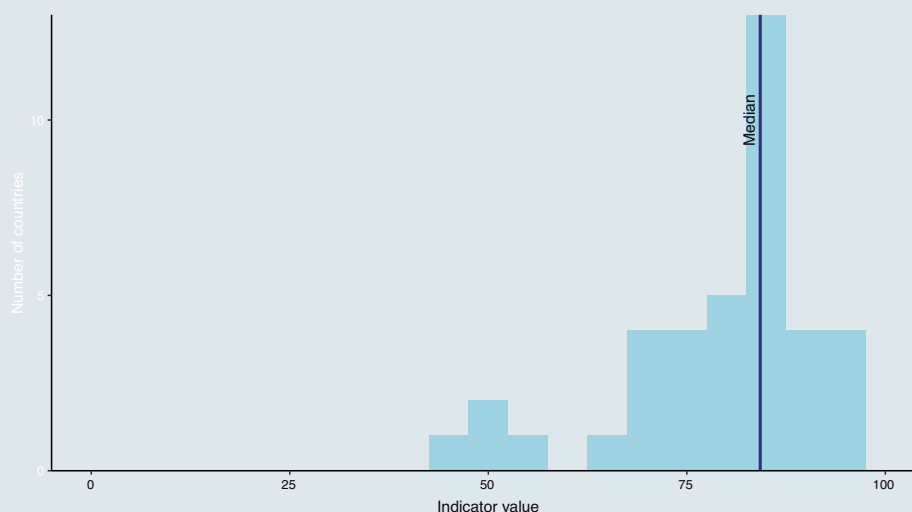
As an alternative method for collecting comparable data in literacy and numeracy skills, the UIS has developed a shorter version of its Literacy Assessment and Monitoring Programme (LAMP). The original LAMP was developed by the UIS to respond to the pressing need to measure literacy and numeracy. It provides a sound methodology and tools to help countries, especially low- and middle-income countries, to monitor and improve literacy skills. LAMP was field-tested in ten countries: Afghanistan,

El Salvador, Jordan, Lao PDR, Mongolia, Morocco, Niger, Palestine, Paraguay and Viet Nam. While the testing demonstrated the value of the LAMP methodological approach, it also highlighted the challenges of implementing assessments across a range of diverse locations and linguistic settings. Based on this experience, the UIS has created Mini-LAMP, which can be adapted to meet specific needs of countries.

### How can my country report this indicator?

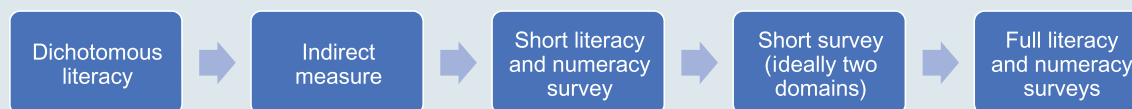
The UIS works directly with international organizations that are administering data collections related to this indicator. These organizations send countries’ data to the UIS following the standards and procedures of the monitoring framework. Therefore, countries participating in relevant projects administered by these organizations do not need to complete any additional survey to report data to the UIS. Countries that are not involved in such projects can also take part in the [UIS Mini-LAMP](#), which

Figure 18. Distribution of indicator 4.6.1 (literacy) among countries (2010-2019)



Source: UNESCO Institute for Statistics (UIS)

Figure 19. Strategies to assess literacy and numeracy for indicator 4.6.1



Source: UNESCO Institute for Statistics (UIS)

is designed to enable countries to reduce the operational and technical costs associated with learning assessments and at the same time produce reliable and comparable data.<sup>12</sup>

As previously noted, there is no common definition of a “fixed level of proficiency” for functional literacy and numeracy; this poses a challenge for global measurement and monitoring. Therefore, until a common definition is reached, the definition adopted for the countries with available data depends on the characteristics of each literacy assessment and may differ among them.

#### 4.7.1 Extent to which (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights, are mainstreamed at all levels in: (a) national education policies (b) curricula (c) teacher education and (d) student assessments

##### Definition:

This indicator measures the extent to which countries mainstream global citizenship education

(GCED) and education for sustainable development (ESD), including climate change education, human rights and gender equality, in their education systems, specifically in policies, curricula, teacher education and student assessments. It seeks to assess the quantity and quality of country inputs as well as whether the quality of GCED and ESD provision is adequate to fulfil their transformational potential.

The indicator is intended to go beyond the level of “existence” or “mentioning” of GCED and ESD in policy, curricula, teacher education and student assessment.

ESD empowers learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society, for present and future generations, while respecting cultural diversity. It is about lifelong learning and is an integral part of quality education.

GCED nurtures respect for all, building a sense of belonging to a common humanity and helping learners become responsible and active global citizens. GCED aims to empower learners to assume active roles to face and resolve global challenges and to become proactive contributors to a more peaceful, tolerant, inclusive and secure world.

<sup>12</sup> More information about the UIS Mini-LAMP can be obtained on the UIS website or in the following link [http://uis.unesco.org/sites/default/files/documents/uis\\_minilamp\\_brochure\\_v5web.pdf](http://uis.unesco.org/sites/default/files/documents/uis_minilamp_brochure_v5web.pdf)

The methodology of this indicator is still being developed and no data are currently available. However, some thematic indicators already provide information about the progress on target 4.7 (see **Chapter 2**).

#### **4.a.1 Proportion of schools with access to: (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) single-sex basic sanitation facilities; and (g) basic handwashing facilities (as per the WASH indicator definitions)**

---

##### **Definition:**

Percentage of schools by level of education (primary, lower secondary and upper secondary education) with access to the given facility or service.

- *Electricity*: Regularly and readily available sources of power (e.g. grid/mains connection, wind, water, solar and fuel-powered generator, etc.) that enable the adequate and sustainable use of ICT infrastructure for educational purposes.
- *Internet for pedagogical purposes*: Internet that is available for enhancing teaching and learning and is accessible by pupils. Internet is defined as a worldwide interconnected computer network, which provides pupils access to a number of communication services including the World Wide Web and carries e-mail, news, entertainment and data files, irrespective of the device used (i.e. not assumed to be only via a computer and thus can also be accessed by mobile telephone, tablet, personal digital assistant, games

machine, digital TV, etc.). Access can be via a fixed narrowband, fixed broadband or mobile network.

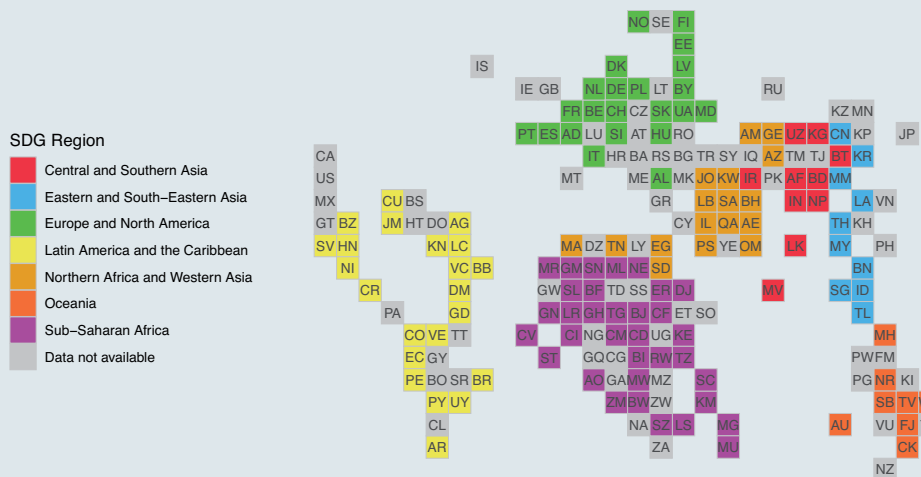
- *Computers for pedagogical use*: Use of computers to support course delivery or independent teaching and learning needs. This may include activities using computers or the Internet to meet information needs for research purposes; developing presentations; performing hands-on exercises and experiments; sharing information, and participating in online discussion forums for educational purposes. A computer is a programmable electronic device that can store, retrieve and process data, as well as share information in a highly structured manner. It performs high-speed mathematical or logical operations according to a set of instructions or algorithms. Computers include the following types:
  - A desktop computer usually remains fixed in one place; normally the user is placed in front of it, behind the keyboard.
  - A laptop computer is small enough to carry and usually enables the same tasks as a desktop computer; it includes notebooks and netbooks but does not include tablets and similar handheld devices.
  - A tablet (or similar handheld computer) is a computer that is integrated into a flat touch screen, operated by touching the screen rather than using a physical keyboard.
- *Adapted infrastructure* is defined as any built environment related to education facilities that are accessible to all users, including

those with different types of disability, to be able to gain access to and exit from them. Accessibility includes ease of independent approach, entry, evacuation and/or use of a building and its services and facilities (such as water and sanitation), by all of the building's potential users, with an assurance of individual health, safety and welfare during the course of those activities.

- *Adapted materials* include learning materials and assistive products that enable students and teachers with disabilities/functional limitations to access learning and to participate fully in the school environment. Accessible learning materials include textbooks, instructional materials, assessments and other materials that are available and provided in appropriate formats such as audio, braille, sign language and simplified formats that can be used by students and teachers with disabilities/functional limitations.

- *Basic drinking water* is defined as a functional improved drinking water source on or near the premises and water points accessible to all users during school hours. An improved drinking water source is a water delivery point that by nature of its design protects the water from external contamination, particularly of faecal origin. Examples of improved drinking water facilities include piped water, protected wells, tube wells and boreholes, protected springs and rainwater, purchased bottled water and tanker trucks. Unimproved water sources include unprotected wells, springs and surface water (e.g. rivers, lakes).
- *Basic sanitation facilities* are defined as functional improved sanitation facilities separated for males and females on or near the premises. Improved sanitation facilities include pit latrines with slab, ventilated improved pit latrines, flush toilets, pour flush toilets or composting toilets. Unimproved

Figure 20. Data availability map of global indicator 4.a.1 – electricity in primary schools (2010-2019)



Source: UNESCO Institute for Statistics (UIS)

facilities include pit latrines without a slab, hanging toilets and bucket toilets.

- *Basic handwashing facilities* are defined as functional handwashing facilities, with soap and water available to all girls and boys.

### Which countries already have data for this indicator?

This indicator has a comparatively high coverage as it is part of the consolidated [UIS Survey of Formal Education](#).<sup>13</sup>

### How are countries calculating this indicator?

Countries usually collect information for this indicator as part of their regular administration of schools and other providers of education or training. In countries with a highly decentralised educational system or with a high participation of the private sector, there may also be challenges coordinating different administrative data. In these cases, it is crucial for the central education authority to encourage cooperation among education providers in order to have reliable data at the national level.

### How can my country report this indicator?

The UIS works regularly with national statistical offices and statistical units within ministries of education to gather information on school infrastructure. The data for indicator 4.a.1 are collected through the UIS education survey, which is designed to collect internationally comparable data on formal education at the early childhood, primary, secondary and post-secondary non-tertiary levels. The survey is administered every year and its data form a central part of the database of education statistics maintained by the UIS.

13 <http://uis.unesco.org/en/uis-questionnaires>

## 4.b.1 Volume of official development assistance flows for scholarships by sector and type of study

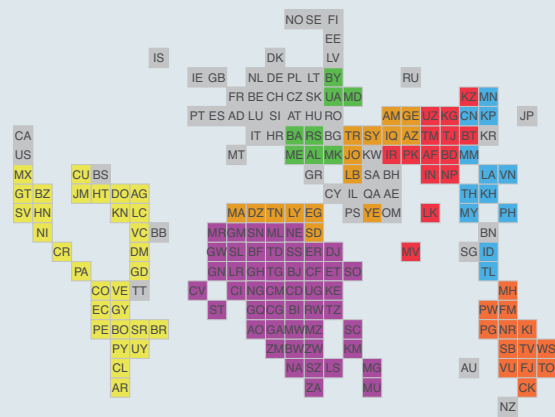
### Definition:

Gross disbursements of total official development assistance (ODA) for scholarships in donor countries expressed in US dollars at the average annual exchange rate.

Scholarships are financial aid awards for individual students and contributions to trainees. The beneficiary students and trainees are nationals of developing countries. Financial aid awards include bilateral grants to students in institutions of higher education following full-time studies or training courses in the donor country.

### Which countries already have data for this indicator?

Figure 21. Data availability map of global indicator 4.b.1: Total official flows for scholarships, by recipient country (constant 2017 US\$, millions)



Source: UNESCO Institute for Statistics (UIS)

### How are countries calculating this indicator?

This indicator is based on administrative data provided by donor countries and other aid agencies regarding gross disbursements of total official development assistance to education. Data are compiled by the Development Assistance Committee (DAC) of the OECD from returns submitted by its member countries and other aid providers.

### How can my country report this indicator?

The UIS receives data directly from the OECD, which is the organization managing data on development assistance among its member countries.

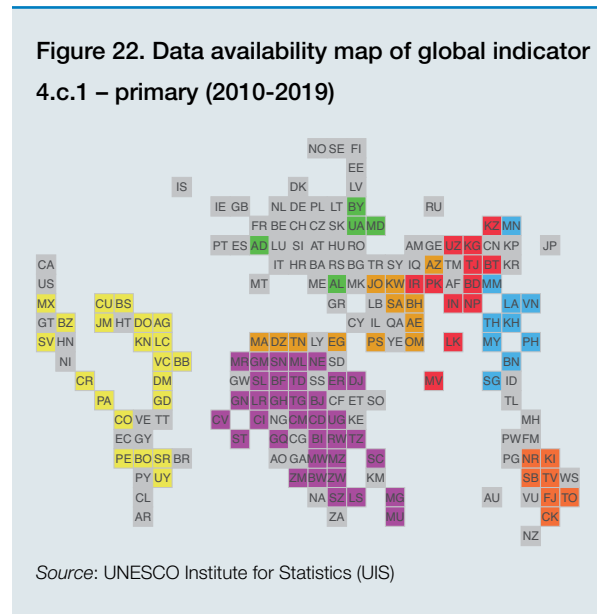
### 4.c.1 Proportion of teachers in: (a) pre-primary education; (b) primary education; (c) lower secondary education; and (d) upper secondary education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre-service or in-service required for teaching at the relevant level in a given country, by sex

#### Definition:

This indicator measures the percentage of teachers by level of education taught (pre-primary, primary, lower secondary and upper secondary education) who have received at least the minimum organized pedagogical teacher training, pre-service and in-service, required for teaching at the relevant level in a given country. Ideally, the indicator should be calculated separately for public and private institutions.

The measurement of teacher training and qualifications poses several challenges for international comparability. For this reason, the UIS is implementing a new project, ISCED-T (see **Box 1**), to better characterize teacher training programmes across countries and allow for the production of more meaningful indicators on teaching personnel.

### Which countries already have data for this indicator?



### How are countries calculating this indicator?

Data for this indicator are collected via administrative records of teachers in schools and other providers of education and training.

### How can my country report this indicator?

The UIS works regularly with national statistical offices and statistical units within ministries of education to gather information on classroom teachers. The data for the indicator 4.c.1 are collected by the UIS through the [UIS Survey of Formal Education](#), which is designed to collect internationally comparable data on formal education at the early childhood, primary, secondary and post-secondary non-tertiary levels.<sup>14</sup> The survey is administered every year and its data form a central part of the database of education statistics maintained by the UIS.

14 <http://uis.unesco.org/en/uis-questionnaires>



## ISCED-T

*An international classification of teacher training programmes and pathways to the teaching profession*

The definition of minimum level of organized teacher training poses a difficult challenge for comparability. As every country has its own definitions and standards for minimum teacher training, comparing the proportion of teachers who are trained has limitations. For instance, some countries may consider a six-month programme for secondary-level graduates as the minimum training, whereas other countries may require a one-year programme for tertiary-level graduates. Therefore, the indicator only describes the extent to which the teaching force in a country is meeting national standards.

In order to improve the comparability of this indicator, the UIS is developing an International Standard Classification for Teacher Training Programmes (ISCED-T). This classification extends the current ISCED to teacher-specific education programmes.

The ISCED-T proposal enables the classification of teacher education and training programmes according to entry requirements, duration and target education level for the programme that it is designed to teach, which are the three dimensions that are already available and measurable.

The UIS, as the custodian agency for Target 4.c.1, is coordinating efforts among Member States and other international organizations to further develop this proposal. ISCED-T is an initial step towards the establishment of sound global data collection on teachers. It aims to foster initiatives to produce and respond to teacher-related surveys in countries and among the global education community.

## 2. Thematic indicators

In addition to the 11 global indicators described in Chapter 1, the UIS, together with partner organizations and experts from Member States and civil society, has developed a supplementary set of 32 indicators. These indicators will provide countries with monitoring guidance around a set of education-related concepts linked to the global targets.

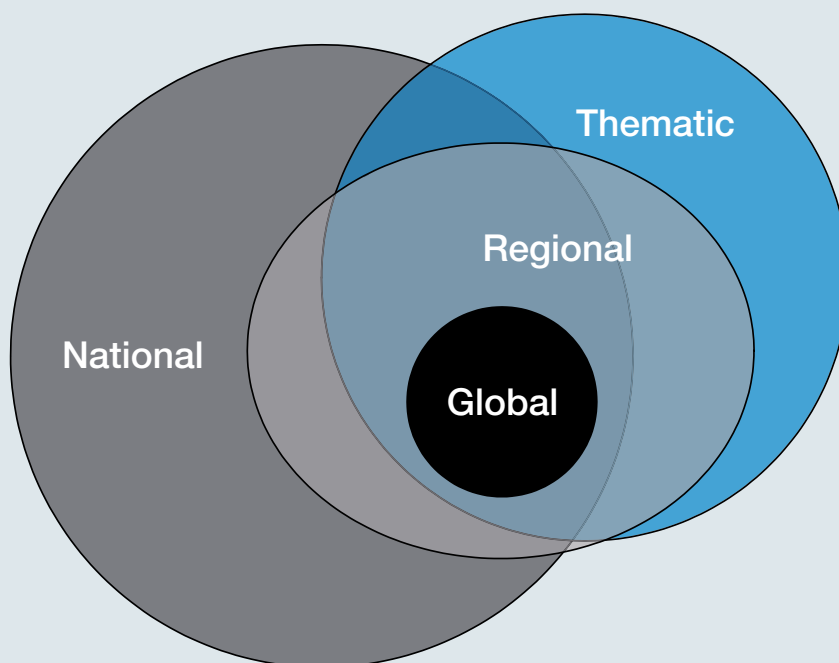
These additional 32 indicators form the thematic monitoring framework and cover aspects of SDG 4 that could not be addressed with the limited number of global indicators. The thematic monitoring follows the guidelines established by the

Education 2030 Framework for Action, which was adopted by 184 UNESCO Member States in 2015.

This section describes the following characteristics of each thematic indicator: concept measured, definition, calculation method, interpretation, data sources and methodological challenges. Many of the thematic indicators are based on data that are already being regularly collected by countries.

One of the main concerns in the implementation of the thematic monitoring framework is to ensure the best use of the statistical capacity countries already

**Figure 23. Thematic indicators and the four levels of SDG 4 monitoring**



Source: UNESCO Institute for Statistics (UIS)

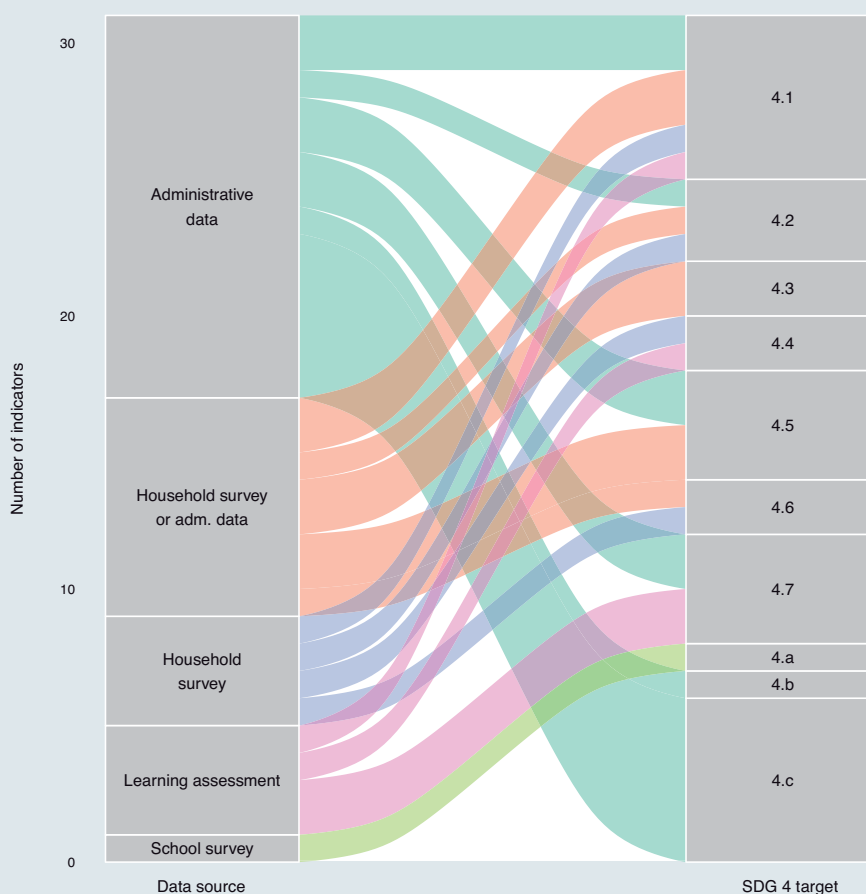
have, prioritising the use of existing official data sources. As **Figure 24** shows, most of the thematic indicators can be calculated using administrative data or household survey data, which are usually part of the national statistical system.

At present, not all thematic indicators have established fully developed methodologies. The UIS relies on the work of the TCG to develop and approve the methodologies and reporting

protocols for each thematic indicator. Since 2016, the TCG has worked on and approved the methodologies for several thematic indicators, but there is still a small set of indicators whose methodologies are being developed. The progress on the methodological development of these remaining indicators is reported regularly on the [TCG website](http://tcg.uis.unesco.org/).<sup>1</sup>

1 <http://tcg.uis.unesco.org/>

**Figure 24. Potential data sources for global and thematic indicators for each SDG 4 target**



Source: UNESCO Institute for Statistics (UIS)

## TARGET 4.1

### 4.1.2 Administration of a nationally-representative learning assessment (a) in Grade 2 or 3; (b) at the end of primary education; and (c) at the end of lower secondary education



#### Concept

The reference to ensuring that boys and girls complete an “equitable and quality primary and secondary education” in target 4.1 is also related to the tools available to countries to assess the quality of education for all. This indicator measures whether countries have large-scale national assessments to monitor the quality and equity of learning.



#### Definition

Whether a national or cross-national assessment of learning outcomes was conducted in the last five years in (a) reading, writing or language and (b) mathematics at the relevant stages of education.

An *assessment of learning outcomes* is a test or examination that measures the achievement of students at a particular age or grade in selected subjects.



#### Calculation method

The indicator is expressed as a simple “yes” or “no” answers for each subject area and stage of education within a 5-year period.



#### Interpretation

✓ **“Yes” values indicate...**

that the country is monitoring learning outcomes regularly at a given stage of education and in given subject areas. This enables the country to review and adapt its national policies on education and learning as necessary to ensure that all children and young people have the opportunity to acquire basic skills at each education level and in each subject area.



#### Data sources

Large-scale learning assessments of a nationally representative sample that provides information on each subject area and stage of education. The main existing source of data for this indicator is available at national curriculum and assessment offices, ministries of education or, in some instances, at international organizations running learning assessments (e.g. CONFEMEN, EQAP, IEA, OECD, SACMEQ, and LLECE).

### 4.1.3 Gross intake ratio to the last grade (primary education, lower secondary education)



#### Concept

As the global indicator focuses on completing a primary and secondary education that “leads to relevant and effective learning outcomes”, the objective of thematic indicator 4.1.3 is to measure the impact of policies on access and the progression of students to the final grade of that educational level. The number produced is an indication of the capacity of the education system to enable students to progress to their final grade and complete the given level of education.



#### Definition

The total number of new entrants into the last grade of primary education or lower secondary general education, regardless of age, expressed as a percentage of the population at the intended entrance age to the last grade of primary education or lower secondary general education.

The *intended entrance age to the last grade* is the age at which pupils would enter the grade if they had started school at the official primary entrance age, had studied full-time and had progressed without repeating or skipping a grade.



#### Calculation method

$$\text{Gross intake ratio} = \frac{\text{Number of new entrants into the last grade of a given level of education}}{\text{Population of the entrance age to the last grade of that level of education}}$$

The indicator is calculated as the number of new entrants into the last grade of a given level of education expressed as a percentage of the population of the intended entrance age to the last grade of that level of education.



#### Interpretation



**A higher ratio indicates...**

a higher degree of completion of primary or lower secondary education.



#### Data sources

Information on new entrants to the last grade of each level of education (or enrolment minus repeaters in the last grade), population of the intended entrance age to the last grade of each level of education and data on the structure (entrance age and duration) of each level of education are needed for this indicator. The main existing source of data for this indicator is available from administrative data from schools on enrolment and repeaters or new entrants by grade, population censuses on population estimates by single year of age and administrative data from ministries of education on the structure of the education system.

#### 4.1.4 Completion rate (primary education, lower secondary education, upper secondary education)



##### Concept

This indicator indicates how many persons in a given age group have completed the relevant level of education. Furthermore, in choosing an age group that is slightly higher than the standard age group for completing each level of education, thematic indicator 4.1.4 measures how many children and adolescents enter school more or less on time and progress in their educational attainment without excessive delays.



##### Definition

Percentage of a cohort of children or young people who are 3 to 5 years older than the intended age for the last grade of each level of education who have completed that grade.

The *intended age for the last grade* of each level of education is the age at which pupils would enter the grade if they had started school at the official primary entrance age, had studied full-time and had progressed without repeating or skipping a grade.



##### Calculation method

$$\text{Completion rate} = \frac{\text{Number of persons in age group X who have completed the level Y}}{\text{Population of the same age group}}$$

This indicator is calculated as the number of persons in the relevant age group who have completed the last grade of the given level of education. This is expressed as a percentage of the total population of the same age group.



##### Interpretation

 **A higher rate indicates that...**

more or all (if 100%) children and adolescents have completed a level of education by the time they are 3 to 5 years older than the official age of entry into the last grade of the given level of education. A low completion rate indicates low or delayed entry into a given level of education, high level of drop-out, high level of repetition, late completion, or a combination of these factors.

When disaggregated by sex, location and other characteristics, this indicator can identify excluded population groups.



## Data sources

The information required for this indicator can be collected from population censuses and household surveys that collect data on the highest level of education or grade completed by children and young people in a household, through self or household declarations. The survey completed by one person or head of the household (i.e. reference person) indicates the highest grade and/or level of education completed by that person or each member of the household. Administrative data from ministries of education and/or relevant state agencies on the structure of the education system are also needed.

Labour force surveys can serve as a source of data for lower and upper secondary completion if they collect information for the age groups concerned. International sample surveys, such as Demographic and Health and Education Surveys (e.g. DHS)<sup>2</sup> or Multiple Indicator Cluster Surveys (MICS)<sup>3</sup> are also potential data sources. These surveys are designed to meet commonly agreed international data needs while providing data for national policy information purposes. Furthermore, the surveys are implemented on a regular basis in selected countries, on average every 3 to 5 years, and allow for cross-national comparability.

### 4.1.5 Out-of-school rate (primary education, lower secondary education, upper secondary education)



#### Concept

The completion of “free, equitable and quality primary and secondary education” referred to in target 4.1 is directly related to reducing the out-of-school rate of students. This indicator identifies the size of the population, within the official age range for the given level of education, not enrolled in school.



#### Definition

Children and young people in the official age range for the given level of education who are not enrolled in primary, secondary or higher levels of education.



#### Calculation method

$$\text{Out-of-school rate} = \frac{\text{Number of children not in pre-primary, primary, secondary or higher education}}{\text{Population of the same age group}}$$

2 <http://dhsprogram.com/>

3 <http://mics.unicef.org/>

This indicator is calculated as the number of students of the official age for the given level of education enrolled in primary, secondary or higher levels of education. This number is then subtracted from the total population of the same age.



## Interpretation

 **The higher the number...**

the greater the need to focus on improving access to education. Some children have never been in school or may not eventually enrol as late entrants. Other children may have initially enrolled but dropped out before reaching the intended age of completion of the given level.



## Data sources

Information is needed on enrolment by single year of age in each level of education, population estimate by single year of age and data on the structure (entrance age and duration) or each level of education. The main sources of information for this indicator can be obtained from administrative data contained in school or household survey data on enrolment by single year of age. The population censuses and surveys from the population estimates by single year are useful sources if using administrative data on enrolment.

Another source for administrative data on the structure (entrance age and duration) of the education system can be obtained from ministries of education and relevant state agencies.

### 4.1.6 Percentage of children over-age for grade (primary education, lower secondary education)



## Concept

This indicator measures the progress towards ensuring that all girls and boys complete a full cycle of quality primary and secondary education. Furthermore, this indicator aims to ensure that students achieve at least minimum levels of proficiency in reading and mathematics at each level. Children may be over-age for a grade because they started school late and/or they have repeated one or more previous grades.



## Definition

Percentage of pupils in each level of education (primary and lower secondary general education) who are at least 2 years above the intended age for their grade.

The *intended age for a given grade* is the age at which pupils would enter the grade if they had started school at the official primary entrance age, had studied full time and had progressed without repeating or skipping a grade.





## Calculation method

$$\text{Over-age} = \frac{\text{Sum of enrolments which are 2 or more years older than the intended age}}{\text{Population of the same age group}}$$

This indicator calculates the sum of enrolments across all grades in the given level of education which are 2 or more years older than the intended age for the given grade. The total sum is expressed as a percentage of the total enrolment at the given level of education.



## Interpretation

↓ **Low values indicate...**

that the majority of students start school on time and progress with minimum levels of grade repetition. Over-age progression and significant repetition should be discouraged as both are associated with lower levels of student learning achievement.



## Data sources

Information is needed on enrolment by single year of age at each level of education, population estimate by single year of age and data on the structure (entrance age and duration) of each level of education. The main sources of information for this indicator can be obtained from administrative data contained in schools or household survey data on enrolment by single year of age. The population censuses and surveys from the population estimates by single year are useful sources if using administrative data on enrolment.

Another source for administrative data on the structure (entrance age and duration) of the education system can be obtained from ministries of education and relevant state agencies.

### 4.1.7 Number of years of (a) free and (b) compulsory primary and secondary education guaranteed in legal frameworks



## Concept

The target is explicit about including all boys and girls in education. To support this, indicator 4.1.7 measures the government's commitment to guaranteeing the right to education for all.



## Definition

The number of years of primary and secondary education to which children and young people are legally entitled that are either free from tuition fees or compulsory or both. The number of years of primary and secondary education to which children are legally entitled should ideally be the

number of grades of primary and secondary education which young people are expected to have completed before leaving school.

Years of pre-primary education covered by the legal entitlement are not included in this indicator (the pre-primary level is assessed by thematic indicator 4.2.5).



### Calculation method

Record the number of grades of primary and secondary education that are guaranteed. If using ages rather than grades, subtract from the upper age, either the lower age if it is an age at which a child should be in primary school or, if not, subtract the official entrance age for primary school. If the upper age is the age at the start of the last year of free or compulsory education, it will be necessary to add 1 to the result.



### Interpretation

**↑ The greater the number...**

the more likely that children and young people will remain in school longer and have the opportunity to acquire the necessary skills and competencies at each level of education.



### Data sources

Most countries have legislation and norms on access to schooling specifying the ages and the level of education (typically pre-primary or primary education) at which children should start school. Such legislation usually also specifies either the number of years of education that are guaranteed or the age at which young people may leave education or, in some cases, both.

The indicator relies on administrative data on the structure of the education system from ministries of education.

## TARGET 4.2

### 4.2.3 Percentage of children under 5 years experiencing positive and stimulating home learning environments



#### Concept

Within the home, caregivers are tasked with establishing a safe, stimulating and nurturing environment and providing direction and guidance in daily life. Interactions with responsible caregivers who are sensitive and responsive to children's emerging abilities are central to social, emotional and cognitive development. This type of positive caregiving can help children feel valued and accepted, promote healthy reactions, provide a model for acceptable social relationships, and contribute to later academic and employment success.

This indicator provides a broad measure of the ways in which adults in the household interact with children in meaningful and stimulating ways to promote learning and school readiness.

Further methodological developmental work will be needed to ensure that the proposed measure is relevant to children in all parts of the world.



#### Definition

The percentage of children aged 36 to 59 months who live in households where their mother, father or other adult household members engage with them in the following types of activities: reading or looking at picture books; telling stories; singing songs; taking children outside the home; playing; and naming, counting and/or drawing.



#### Calculation method

$$\text{Indicator} = \frac{\text{Number of children aged 36-59 months participating in relevant activities}}{\text{Population of the same age group}}$$

The indicator is calculated as the percentage of children aged 36 to 59 months participating in activities in the areas being measured.



#### Interpretation



**A high value indicates...**

a large number of young children live in households that are supportive and provide stimulating learning environments.



## Data sources

Developed by UNICEF since 2002, Multiple Indicator Cluster Surveys (MICS) define four domains of family care: 1. Responsiveness and acceptance; 2. Support for learning; 3. Disciplinary methods; and 4. Responsiveness during feeding. In addition, it defines three domains of resources for care: 1. Availability and use of alternate caregivers; 2. Father's involvement with child; 3. Maternal depression symptoms.

## 4.2.4 Gross early childhood education enrolment ratio in (a) pre-primary education and (b) early childhood educational development



### Concept

Thematic indicator 4.2.4 measures the capacity of the education system to enrol children of early childhood education age. The indicator addresses the general level of participation in two categories of early childhood education: pre-primary education and early childhood educational development.



### Definition

Total enrolment in (a) pre-primary education [ISCED 02] and (b) early childhood educational development [ISCED 01] regardless of age, expressed as a percentage of the population of the official age for the respective ISCED category.



### Calculation method

$$\text{Indicator} = \frac{\text{Number of students enrolled in early childhood education development}}{\text{Population of the official age (2-5 years) for early childhood education development}}$$

$$\text{Indicator} = \frac{\text{Number of students enrolled in pre-primary education}}{\text{Population of the official age for pre-primary education}}$$

The number of students enrolled in each of the two categories of early childhood education is expressed as a percentage of the population of the official age for each corresponding group.



### Interpretation

 **A high value generally indicates...**

a greater degree of participation, whether the pupils belong to the official age group or not. If countries achieve full participation (100%), this indicates that the education system is able to accommodate all of its early childhood education-age population, but it does not indicate the proportion already enrolled.



## Data sources

To measure this indicator, information is needed on enrolment in pre-primary education and early childhood educational development, population estimates by single year of age (if using administrative data) and data on the structure (entrance age and duration) of early childhood education. The main sources of information for this indicator can be obtained from administrative data compiled by schools or household survey data on enrolment. The population censuses and surveys from the population estimates by single year are useful sources if using administrative data on enrolment. Other sources for administrative data on the structure (entrance age and duration) of early childhood education are ministries of education and relevant state agencies.

### 4.2.5 Number of years of (a) free and (b) compulsory pre-primary education guaranteed in legal frameworks



#### Concept

Target 4.2 indicates that “all girls and boys” should have access to pre-primary education so that they are ready for primary education. The universal access to this level of education is directly related to the cost to families of enrolling their children as well as the legal provision regarding the right to education at this level. Therefore, this indicator aims to address the legal frameworks in place to guarantee the achievement of SDG Target 4.2.



#### Definition

The number of years of pre-primary education to which children are legally entitled that are either free from tuition fees or compulsory or both.

Most countries have legislation specifying the ages and the level of education (typically pre-primary or primary education) at which children should start school. Such legislation usually also specifies either the number of years of education that are guaranteed or the age at which young people may leave education or, in some cases, both.

The number of years of pre-primary education to which children are legally entitled should ideally be the number of grades of pre-primary education that children are expected to have completed before entering primary education.



#### Calculation method

The number of grades of pre-primary education that are guaranteed is recorded. If using ages rather than grades, subtract the lower age from the official entrance age to primary school. If the result is 0 or negative, no years of pre-primary education are guaranteed.



### **Interpretation**

The greater the guaranteed number of years of pre-primary education, the more likely children are to have access to this level of education and the better prepared they will be for entry into primary education at the appropriate time.



### **Data sources**

National legislation and formal education standards and norms on access to schooling and, in particular, the legal entitlement or obligation to attend school, and administrative data from ministries of education on the structure of the education system.

## TARGET 4.3

### 4.3.2 Gross enrolment ratio for tertiary education, by sex



#### Concept

Target 4.3 indicates that “all women and men” should have access to “affordable and quality technical, vocational and tertiary education”. The emphasis on affordable access to education is directly related to the capacity of the education system to enable participation and enrol students (of a particular age group) into tertiary education. Note that the “gross enrolment ratio” is a broad measure of participation in tertiary education and does not reflect differences in the duration of educational programmes (between countries or different levels of education and/or field of study). While this indicator measures a 5-year age group for all countries, participation levels may be underestimated due to some countries having poorly developed tertiary education systems or where provision is limited to first tertiary programmes (i.e. shorter than 5 years in duration).



#### Definition

This indicator is defined as the total enrolment of students in tertiary education regardless of age and is expressed as a percentage of the population in the 5-year age group immediately following upper secondary education.



#### Calculation method

$$\text{Indicator} = \frac{\text{Number of students enrolled in tertiary education}}{\text{Population of the 5-year age group immediately following upper secondary education}}$$

The number of students enrolled in tertiary education is expressed as a percentage of the 5-year age group immediately following upper secondary education.

If the official entrance age to upper secondary education is 15 years and the duration is 3 years, then the 5-year age group immediately following upper secondary education is 18 to 22 years.



#### Interpretation



**A high value shows...**

a high degree of participation in tertiary education by students of all ages.



#### Data sources

Information is needed on enrolment in tertiary education, population estimates by single year of age and data on the structure (entrance age and duration) of upper secondary education.

The main sources of information for this indicator can be obtained from administrative data (disaggregated by sex, age and income). These data are compiled by schools and/or universities and household survey data on enrolment. Population censuses and surveys from population estimates by single year are useful sources if using administrative data on enrolment. Administrative data on the structure of upper secondary education can be obtained from ministries of education and relevant state agencies.

### 4.3.3 Participation rate in technical and vocational programmes (15- to 24-year-olds), by sex



#### Concept

Thematic indicator 4.3.3 measures the level of youth participation in technical and vocational education and training, which can be offered in a variety of settings such as schools, universities, workplace environments and others. Note that focusing solely on “participation rates” will not reflect the intensity or quality of provision nor the outcomes of the education and training on offer. Furthermore, administrative data sources may only capture the “provision” of formal education and training settings (e.g. schools and universities).



#### Definition

This indicator can be defined as the percentage of young people aged 15 to 24 years participating in technical or vocational education either in formal education, work-based or other settings, on a given date or during a specified period.



#### Calculation method

$$\text{Indicator} = \frac{\text{Number of young people (15-24 years) participating in technical and vocational education}}{\text{Population of the same age group}}$$

The number of young people aged 15 to 24 years participating in technical and vocational education at secondary, post-secondary or tertiary levels of education is expressed as a percentage of the population of the same age group.



#### Interpretation

↑ **A high value indicates...**

that a large share of the 15- to 24-year-old population is participating in education and training designed specifically to lead to a job.





## Data sources

Information on the numbers of participants aged 15 to 24 years in technical and vocational education and training and population estimates for this age group are needed for this indicator. Data can be obtained from administrative data (disaggregated by age, sex, location and income) on enrolment contained in household surveys and schools and other places of education and training. The population censuses and surveys from the population estimates for the 15- to 24-year-old age group are useful sources if using administrative data on enrolment.

## TARGET 4.4

### 4.4.2 Percentage of youth/adults who have achieved at least a minimum level of proficiency in digital literacy skills



#### Concept

Accessing, analysing and communicating information takes place through the use of digital devices and applications (computers, smart phones and the Internet). The capacity to use these devices intelligently to manage information is important in many aspects of life. Literacy and numeracy are important for using ICT applications effectively to manage information. This indicator is a direct measure of the digital literacy skills of youth/adults.



#### Definition

Percentage of youth/adults achieving at least a minimum proficiency level in digital literacy skills. The minimum proficiency level will be measured within a common framework according to a common metric.

Only one threshold divides students or youth into below minimum or above minimum proficiency levels:

- (a) Below minimum is the proportion or percentage of students who do not achieve a minimum standard as established by countries according to the globally defined minimum competencies.
- (b) At or above minimum is the proportion or percentage of students or youth who have achieved at least the minimum standard.



#### Calculation method

$$\text{Indicator} = \frac{\text{Individuals who have achieved or exceeded the minimum proficiency level}}{\text{Population of the same age group}}$$

The indicator is calculated as the percentage of students or youth at the relevant stage of education who have achieved or exceeded the minimum proficiency level in the given subject area.

**Note on data availability:** this indicator is still in development, therefore data are not available in the UIS database.



## Interpretation



**A high value indicates...**

that a large proportion of youth/adults have achieved at least a minimum level of proficiency in digital literacy skills.



## Data sources

This indicator requires performance-level data and information about how these performance levels are set from the national and cross-national assessments (e.g. IEA's ICILS, OECD's PIAAC).

Potential sources include data from national learning assessment offices, ministries of education or international organizations engaged in learning assessments. IEA's ICILS (at Grade 8, thus not covering the target population) and OECD's PIAAC (at ages 15 to 65) have collected data on 9th- and 10th-graders, youth and adults.

### 4.4.3 Youth/adult educational attainment rates by age group, economic activity status, levels of education and programme orientation



## Concept

The acquisition of “relevant skills” referred to in target 4.4 is directly associated with the educational attainment of the population. Based on this premise, the indicator aims to address the level of educational attainment by observing the relevance of different programme orientations and the coverage among different age groups as well as individuals engaging in different economic activities.



## Definition

Cumulative distribution of the population of a given age group according to the minimum level of education completed. This indicator is usually presented for age groups of at least 25 years and older in order to ensure that most of the population has completed their education. Younger age groups are often still enrolled in the education system.



## Calculation method

For the cumulative distribution of the population by level of education, the number of persons in the relevant age group who completed at least a given level of education is expressed as a percentage of the total population of the same age, excluding persons with unknown educational attainment.



## Interpretation

The greater the level of educational attainment, the more likely it is that the individual will have the relevant skills, including technical and vocational skills, for employment, decent work and entrepreneurship. Persons with higher educational attainment are also assumed to be better equipped to make well-informed decisions, for example, about their personal health or the environment.



## Data sources

Population censuses and household surveys that collect data on the highest levels of education completed by members of a household, through self or household declaration. Labour force surveys are the most common source of data on educational attainment. International sample surveys, such as Demographic and Health Surveys (DHS)<sup>4</sup> or Multiple Indicator Cluster Surveys (MICS),<sup>5</sup> are another source. These surveys are designed to meet commonly agreed upon international data needs while providing data for national policy purposes.

For this indicator, additional information regarding the programme orientation (general or vocational) is also relevant.

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4 <http://dhsprogram.com/>

5 <http://mics.unicef.org/>

## TARGET 4.5

### 4.5.2 Percentage of students in primary education whose first or home language is the language of instruction



#### Concept

The indicator seeks to measure the extent to which children in primary education are learning in a language with which they are familiar and in which they are likely to be proficient.



#### Definition

Percentage of primary students whose first or home language is the language of instruction. First or home language is defined as the student's main language of communication outside the school environment. It is usually either the first language students learn or the language of their family or local community.



#### Calculation method

$$\text{Indicator} = \frac{\text{Number of pupils whose first language is the language of instruction}}{\text{Number of pupils in primary education}}$$

The number of pupils in primary education whose first or home language is the language of instruction is expressed as a percentage of all primary pupils.

**Note on data availability:** this indicator is still in development, therefore data are not available in the UIS database.



#### Interpretation



**A high value indicates...**

a large number of primary pupils are being taught in a language in which they are proficient, thus making it easier for them to adapt to the school learning environment.



#### Data sources

Number of primary pupils by first or home language and information on the language of instruction. This information can be obtained via administrative data from schools on the language of instruction and the first or home languages of pupils.

### 4.5.3 Extent to which explicit formula-based policies reallocate education resources to disadvantaged populations



#### Concept

The general aim of the indicator is to capture the effort countries make to equalise education opportunities through their financing system. The specific formulation reduces the scope of the indicator in two ways. First, it refers to “education” resources, while other resources (e.g. cash transfers under the social protection budget) can also help equalise education opportunities. Second, it refers to “formula-based” resource reallocation, while other approaches can also be used for this purpose.



#### Definition

The indicator includes both (a) a medium-term perspective approach; and (b) a longer-term one:

- (a) Degree of commitment of national financing policy to equalise education opportunity for primary and secondary education could be rated by four levels: (i) very low; (ii) low (e.g. policies to provide more resources to disadvantaged schools/students); (iii) medium (e.g. policies that reallocate at least x% of the education budget); (iv) high (e.g. policies are well-targeted and effectively monitored).
- (b) Percentage of public expenditure on education that is explicitly allocated to disadvantaged populations such as disadvantaged populations, members of ethnic, linguistic and religious minorities, indigenous peoples or other groups, depending on the national context.



#### Calculation method

- (a) A qualitative indicator derived from policy documents and/or qualitative exercises such as the World Bank’s SABER (Systems Approach for Better Education Results) school finance module.
- (b) The indicator uses detailed budget lines to identify public spending directed towards vulnerable populations. This will require a detailed reference classification of education expenditures and an agreed list of vulnerable groups.

**Note on data availability:** this indicator is still in development, therefore data are not available in the UIS database.



#### Interpretation

- (a) Self-explanatory categories.
- (b) The higher the proportion of public spending directed towards the vulnerable, the more effort governments make to provide equitable education.



## Data sources

National policy documents or existing qualitative data collections and detailed budget documents. Two examples could inform the definition of such an indicator:

The World Bank's SABER comes closest to a potential source. Under the domain "School Finance" and Policy Goal 5, "Providing more resources to students who need them", it asks questions such as: "Are public resources available to students from disadvantaged backgrounds?" and "Are there policies to provide more resources to schools or households with other disadvantaged students (ethnicity, gender, native language, urban/rural)?"

Data are collected in-country by local experts who ensure cross-country comparability. Policies are evaluated and scored at four levels, and results are verified with governments before publication.

The United Nations Economic Commission for Latin America and the Caribbean (ECLAC/CEPAL) has carried out country reviews of social protection systems that collect similar data that are used for regional comparisons.

### 4.5.4 Education expenditure per student by level of education and source of funding



#### Concept

This indicator highlights the resources invested on average on a single student, going beyond government sources so that an actual unit cost can be calculated. Using a per student basis is useful for comparison, whether between levels of education, over time, or between countries. Expressing the indicator either as a percentage of GDP per capita, or in PPP\$, allows comparisons between countries, and using constant values when looking at time-series data is necessary to evaluate how real resources (eliminating the effects of inflation) are evolving over time.



#### Definition

Total initial funding from government (central, regional, local), private (households and other private) and international sources for a given level of education (pre-primary, primary, lower secondary, upper secondary, post-secondary non-tertiary and tertiary education) per student enrolled at that level in a given year. The results should be expressed:

- (i) As a percentage of GDP per capita; and
- (ii) In PPP\$ (constant).

Unless an additional disaggregation is proposed, this indicator considers funding for public and private institutions together.



## Calculation method

$$\text{Indicator} = \frac{\text{Initial funding from government, private or international sources}}{\text{Number of students enrolled}}$$

The indicator is calculated by dividing total initial funding (i.e. including transfers paid but excluding transfers received) from government (central, regional, local), private (households and other private) or international sources for a given level of education (pre-primary, primary, lower secondary, upper secondary, post-secondary non-tertiary and tertiary education) by the number of students enrolled at that level in a given year, and again dividing (i) by GDP per capita; and (ii) by the PPP\$ conversion factor.



## Interpretation

*Government funding:* When considered as a percentage of GDP per capita, a higher value would indicate a greater priority given by public authorities to the specific level of education. When considered in PPP\$, the indicator can show the “real” amount of resources invested in one student.

*Private/household funding:* a higher value would signify a greater burden on households, and potential implications for equity and access to education.

*For international sources:* a higher value would signify a greater commitment from donors to a level of education in a given country, but also potentially a greater degree of aid dependency for governments in terms of education funding.

*For all sources combined:* the indicator would show the real, total value of resources invested in one student, and therefore the real unit cost. Since the indicator is constructed on a comparable scale (i.e. for one student, and relative to GDP per capita or using a common currency), all its sub-components can be compared to other levels of education, over time, or between countries.



## Data sources

Central, regional and local government expenditure data on education by level of education and type of institution; household and (ideally) other private expenditure on education by level of education and type of institution; international expenditure on education by level of education and type of institution; number of students enrolled by level of education and type of institution.

At the national level, ministries of finance and/or ministries of education financial management systems are the sources of government expenditure on education, although disaggregation by level often implies estimations using data on students and/or teachers by level. Data on expenditure by lower levels of government can be centralised or collected directly from local authorities.



Household expenditure on education is collected through consumption/expenditure surveys, although few surveys disaggregate spending by level of education, type of school and/or nature of expenditure. School censuses in some countries also collect data on financial/in-kind contributions by households/students.

Data on other private sources of funding for education (e.g. corporations, local NGOs) are rarely collected systematically and would often require additional surveys preceded by significant analytical, preparatory and advocacy work.

International sources may be available through governmental financial systems when they are recorded on-budget, and off-budget international funding may sometimes be available through governmental aid management systems, although rarely with the disaggregation needed (e.g. by level of education). Data sources for international funding, such as the OECD-DAC database or the International Aid Transparency Initiative (IATI), may be used as a complement, but these often present problems of compatibility with other sources, such as government records.

#### 4.5.5 Percentage of total aid to education allocated to least developed countries



##### Concept

ODA is the accepted measure of international development cooperation. The data thus cover official international assistance to education, including the provision of education places for developing country nationals in donor country educational institutions.



##### Definition

Total gross ODA for education in least developed countries (including early childhood, primary, secondary and tertiary education), as well as scholarships and student costs in donor countries, expressed as a percentage of total gross official development assistance to education. Least developed countries are those defined by the [UN Office of the High Representative for Least Developed Countries, Landlocked States and Small Island Developing States \(UN-OHRLLS\)](#).<sup>6</sup> Only donor countries will be required to report this indicator.

ODA is defined as grants or loans to countries and territories and to multilateral institutions provided by state and local governments, or their executive agencies, with the objective of promoting the economic development and welfare of developing countries and territories. Such grants or loans are provided on concessional financial terms and, in the case of loans, contain a grant element of at least 25%.

6 [http://www.un.org/en/development/desa/policy/cdp/lcd/lcd\\_list.pdf](http://www.un.org/en/development/desa/policy/cdp/lcd/lcd_list.pdf)



## Calculation method

$$\text{Indicator} = \frac{\text{Total gross ODA for education allocated to least developed countries}}{\text{Total gross ODA for education}}$$

Total gross disbursements for the education sector allocated to least developed countries are expressed as a percentage of total bilateral aid for education.



## Interpretation



**A high value indicates...**

that least developed countries are being prioritised to receive aid for education.



## Data sources

Total aid to education and aid to education allocated to least developed countries.

Other sources include administrative data from donor countries and other aid providers on gross ODA to education. Data are compiled by the DAC of the OECD from returns submitted by its member countries and other aid providers.

## TARGET 4.6

### 4.6.2 Youth/adult literacy rate



#### Concept

The literacy rate indicates the proportion of a given population that has a minimum basic level of reading and writing skills, crucial to achieving higher levels of literacy and numeracy as aspired to by target 4.6.



#### Definition

Percentage of youth (aged 15 to 24 years) and adults (aged 15 years and older) who have the ability to both read and write, with understanding, a short, simple statement about everyday life.

The literacy rate as defined here is a binary indicator: persons are either literate (meaning they have at least a minimum of reading and writing skills) or illiterate. In fact, there is a continuum of literacy skills that is not captured by literacy rates, based on a division of the population into literate and illiterate persons. The binary literacy rate also conveys no information on functional literacy skills, i.e. the application of reading and writing in daily life.



#### Calculation method

$$\text{Indicator} = \frac{\text{Number of literate persons}}{\text{Population of the same age group}}$$

The literacy rate is calculated by dividing the number of literate persons by the total number of persons in the same age group, excluding persons with unknown literacy status.



#### Interpretation

The literacy rate measures the ability to read and write a “simple statement about everyday life” and is therefore an indicator of the presence or lack of minimum literacy skills in a population. Literacy rates at or near 100% indicate that (nearly) every adult or youth is able to read and write, at least at a basic level.



#### Data sources

National data on literacy are typically collected through self or household declaration in household surveys or population censuses that rely on the “able to read and write a simple statement” definition of literacy, although the questions asked in surveys vary between countries. Household surveys such as the [DHS](#)<sup>7</sup>

7 <http://dhsprogram.com/>

and MICS<sup>8</sup> have moved from self or household declaration to simple assessments in the form of a reading test, in which respondents are asked to read a simple sentence written in their language.

### 4.6.3 Participation rate of illiterate youth/adults in literacy programmes



#### Concept

As the global indicator focuses on youth and adult proficiency in literacy and numeracy, the emphasis of thematic indicator 4.6.3 is on participation in literacy programmes instead of literacy proficiency. The indicator provides a more dynamic measure of the country's efforts to improve the global indicator.



#### Definition

Number of youth (aged 15 to 24 years) and adults (aged 15 years and older) participating in literacy programmes expressed as a percentage of the illiterate population of the same age.



#### Calculation method

$$\text{Indicator} = \frac{\text{Number of persons participating in literacy programmes}}{\text{Number of illiterate persons of the same age group}}$$

The indicator is calculated as the number of illiterate persons in the relevant age group participating in literacy programmes expressed as a percentage of the illiterate population of the same age.



#### Interpretation

↑ **A high value indicates...**

a high degree of coverage of the illiterate population by the programmes designed to reach that specific group. The theoretical maximum value is 100%. Increasing trends can be considered as reflecting improved coverage by the literacy programmes of their target population.



#### Data sources

Administrative or household data on participation in literacy programmes for the defined age groups, combined with illiterate population estimates for the same age groups. The UIS has already developed and implemented a methodology to collect and compare national data for this indicator with the UIS survey on literacy programmes in Latin America and the Caribbean (UIS/LAC).

8 <http://mics.unicef.org/>

## TARGET 4.7

### 4.7.2 Percentage of schools that provide life skills-based HIV and sexuality education



#### Concept

This indicator tracks the proportion of schools that provide life skills-based HIV and sexuality education within the formal curriculum or as part of extra-curricular activities. It reflects curriculum delivery in support of national HIV prevention programmes.

The indicator potentially provides a good measure of coverage, considering which schools have provided life skills-based HIV and sexuality education, at the minimum required levels, due to the range of topics and the set minimum package of topics. However, this indicator is quite complex to calculate using the method of measurement suitable for school-based surveys.



#### Definition

Percentage of schools providing life skills-based HIV and sexuality education within the formal curriculum or as part of extra-curricular activities.



#### Calculation method

$$\text{Indicator} = \frac{\text{Number of schools providing life skills-based HIV and sexuality education}}{\text{Total number of schools}}$$

The number of schools at each level of education providing life skills-based HIV and sexuality education is expressed as a percentage of all schools at the given level of education.



#### Interpretation

 **A high value indicates...**

that a large number of schools at the given level of education provide life skills-based HIV and sexuality education to students.



#### Data sources

The indicator requires data on the number of schools at each level of education providing life skills-based HIV and sexuality education and the total number of schools at the same level. These numbers can be obtained from administrative data from schools and other providers of education and training.

### 4.7.3 Extent to which the framework on the World Programme on Human Rights Education is implemented nationally (as per the UNGA Resolution 59/113)



#### Concept

The indicator is a measure of government commitment to ensuring that learners at all levels of education have the opportunity to gain the required knowledge and skills in the area of human rights in order to promote sustainable development.



#### Definition

The extent to which countries have implemented the World Programme on Human Rights Education and, specifically, the 5-year action plans for each phase of its implementation. The action plan for the 2015 to 2019 period focuses on:

- (i) Consolidating actions in the previous two stages: human rights education in primary and secondary schools (2005-2009); and human rights education for higher education and human rights training programmes for teachers and educators, civil servants, law enforcement officials and military personnel (2010-2014); and
- (ii) Promoting human rights training for media professionals and journalists.

It seeks to measure the quantity and quality of country actions and commitment to mainstreaming human rights education.



#### Calculation method

The method of reporting this indicator has still to be defined. It will be based on an evaluation of reports submitted by countries describing how they are implementing the World Programme on Human Rights Education.

**Note on data availability: this indicator is still in development, therefore data are not available in the UIS database.**



#### Interpretation

To be determined.



#### Data sources

National evaluation reports and other evaluations of the implementation of the action plan for each stage of the World Programme on Human Rights Education submitted periodically to the Office of the High Commissioner for Human Rights (OHCHR).

#### 4.7.4 Percentage of students by age group (or education level) showing adequate understanding of issues relating to global citizenship and sustainability



##### Concept

The indicator is a direct measure of the learning outcomes achieved in global citizenship education (GCED) and education for sustainable development (ESD), critical for the promotion of sustainable development. Furthermore, GCED and ESD encompasses all the other subjects, including climate change education, human rights and gender equality, that are covered by the target. It can be argued that the indicator will measure these items as well.



##### Definition

Percentage of students of a specific age group or level of education (to be determined) showing an adequate understanding of issues relating to global citizenship and sustainability.



##### Calculation method

The indicator is calculated as the number of students of a given age/education level achieving or exceeding the minimum level of understanding of issues relating to global citizenship and sustainability, expressed as a percentage of all students of that age/education level.

**Note on data availability:** this indicator is still in development, therefore data are not available in the UIS database.



##### Interpretation



**A high value indicates...**

a large number of students in the relevant age group have at least a given level of understanding of issues relating to global citizenship and sustainability.



##### Data sources

This indicator can be collected through skills assessment surveys. The main existing source of data for this indicator is the IEA's International Civic and Citizenship Education Study (ICCS). In 2015, the IEA General Assembly endorsed and encouraged efforts to work towards the inclusion of the global dimension of citizenship and sustainable development in future cycles. The ICCS questionnaire is currently being revised to meet this objective in the 2022 round.

Other sources of data could be explored such as the [World Values Survey](http://www.worldvaluessurvey.org/), with the long-term goal of collecting comparable information about students' knowledge, skills, values and attitudes in multiple assessment formats.<sup>9</sup>

9 <http://www.worldvaluessurvey.org/>



## Methodological challenges

The subjects assessed are considered key for the promotion of sustainable development. Further developmental work will also be needed to ensure that the knowledge being measured and the proficiency levels are relevant in all parts of the world. Currently, the indicator is only calculated for those in formal education and school settings.

### 4.7.5 Percentage of 15-year-old students showing proficiency in knowledge of environmental science and geoscience



## Concept

The indicator is a direct measure of the learning outcomes achieved in the two key subjects relevant to the promotion of sustainable development. A first step towards meaningful measurement is agreement on a Global Content Framework to serve as an umbrella to guide teaching and learning, while respecting differences in context and user cases. This will ensure that the knowledge being assessed and the proficiency levels are relevant in all parts of the world. It will also form the basis for reporting national assessments. The age group is another possibility for adjustment, taking into account secondary education.



## Definition

Percentage of 15-year-old students achieving at least a minimum proficiency level in environmental science and geoscience.



## Calculation method

$$\text{Indicator} = \frac{\text{Number of 15-year-old students achieving or exceeding the minimum proficiency level in environmental science and geoscience}}{\text{Total number of 15-year-old students}}$$

The indicator is calculated as the number of 15-year-old students achieving or exceeding the minimum proficiency level in environmental science and geoscience expressed as a percentage of all 15-year-old students.

**Note on data availability:** this indicator is still in development, therefore data are not available in the UIS database.



## Interpretation

 **A high value indicates...**

a large number of students aged 15 years have at least a given level of proficiency and knowledge of environmental science and geoscience.





### Data sources

This indicator is collected through skills assessment surveys. One possible source is OECD's PISA. TIMSS 2015 and 2019 provide a framework for measuring the indicator although the focus is on other age groups. Once the policy descriptors have been defined, national assessments could be used for reporting.

Other sources should also be explored, with the long-term goal of collecting comparable information about students' knowledge in multiple assessment formats.

## 4.a.2 Percentage of students experiencing bullying



### Concept

This indicator provides information on the extent of self-reported violence and bullying in schools. The indicator is based on self-reporting by students of their experiences of bullying in or near school. There may be instances when some students feel sufficiently intimidated not to report incidents that have taken place. This results in an over-estimate of the safety of the school environment.



### Definition

Percentage of students who experienced bullying during a school year.



### Calculation method

$$\text{Indicator} = \frac{\text{Number of students reporting that they have experienced bullying}}{\text{Total number of students}}$$

The number of students at a given level of education reporting that they have experienced bullying is expressed as a percentage of all students at the same level of education.



### Interpretation

**↑ A high value indicates...**

a large number of students at the given level of education are experiencing bullying in or near school and thus the school is not a safe environment in which to promote learning.



## Data sources

The main source for this indicator are the [Global School-based Student Health Survey \(GSHS\)](#)<sup>10</sup> developed by the World Health Organization (WHO) and the US Centers for Disease Control and Prevention (CDC) in collaboration with UNICEF, UNESCO and UNAIDS, and the [Health Behaviour in School-aged Children study \(HBSC\)](#)<sup>11</sup> also administered by the World Health Organization. GSHS and HBSC are both school-based surveys conducted primarily among students aged 13 to 17 years (GSHS) and students aged 11, 13 and 15 years (HBSC). GSHS covers mainly developing countries while the HBSC covers Europe and North America.

### 4.a.3 Number of attacks on students, personnel and institutions



#### Concept

The indicator is a broad measure of the safety of learning environments, particularly in relation to armed conflict and political violence.



#### Definition

The number of violent attacks, threats or deliberate use of force in a given time period (e.g. the last 12 months, a school year or a calendar year) directed against students, teachers and other personnel or against education buildings, materials and facilities, including transport. The indicator focuses on attacks carried out for political, military, ideological, sectarian, ethnic or religious reasons by armed forces or non-state armed groups.

Attacks on education include the following sub-categories:

- *Attacks on schools:* targeted violent attacks on preschool, kindergarten, primary, and secondary school buildings or infrastructure by state military forces or non-state armed groups in the form of arson; suicide, car, or other bombs aimed at a school; artillery fire directed at a school. In addition, this category includes indiscriminate attacks that result in the damage or destruction of school infrastructure as well as explosions that occur in close proximity to a school.
- *Attacks on students, teachers, and other education personnel:* killings, injuries, torture, abductions, forced disappearances, or threats of violence, including coercion or extortion involving violent threats directed towards students and education staff who work at the primary and secondary levels. Since it is sometimes difficult to identify why a teacher or school staff member is killed if the assassination occurs outside of school, this category also includes such attacks in cases where there is an established pattern of that kind of violence. The

<sup>10</sup> <https://www.who.int/ncds/surveillance/gshs/en/>

<sup>11</sup> <http://www.hbsc.org/>

category of attacks on students, teachers, and other education personnel also includes cases where police or state security forces violently repress student protests that either occur at school, or, if they occur off-campus, focus on education-related policies and laws.

- *Military use of schools and universities*: cases in which armed forces or non-state armed groups take over schools or universities as bases, barracks and temporary shelters to house soldiers or fighters, fighting positions, weapons storage facilities, detention and interrogation centres, or for other military purposes.
- *Recruitment of children at schools or along school routes*: cases in which armed forces or non-state armed groups use schools or school routes as locales for recruiting children under the age of 18 into their fighting forces in violation of international standards.
- *Sexual violence by parties to the conflict*: incidents of sexual abuse and harassment perpetrated at schools or universities or along school routes.
- *Attacks on higher education*: these include targeted violent attacks on universities in the form of bombings, airstrikes, arson, or other means, as well as targeted killings, abductions, or threats directed at university students, faculty or staff. The category includes cases of violent repression of student protests that either occur at institutions of higher education, or, if they occur off-campus, focus on education-related policies and laws.



### Calculation method

The indicator is calculated based on the reported number of incidents in which students, education personnel or educational facilities are attacked, as defined above.



### Interpretation



#### **A high value indicates...**

a large number of attacks on education are reported more frequently. In some cases, only multi-year information is available. In these cases, the total for the multi-year period is replicated across years, with a footnote indicating that it is not comparable to other annual totals.



### Data sources

This indicator is based on data compiled by the Global Coalition to Protect Education from Attack (GCPEA) for its report *Education Under Attack*.<sup>12</sup> Information is gathered from three types of data sources: reports released by UN agencies, development and humanitarian NGOs, human rights organizations, government bodies, and think tanks; media reports; and information shared with GCPEA by staff members of international and national organizations working in the countries profiled in the report.

12 <http://www.protectingeducation.org/>

## 4.b.2 Number of higher education scholarships awarded by beneficiary country



### Concept

The indicator is a direct measure of scholarships for study abroad as defined in the target.

Beneficiary countries typically will not have access to all the data on scholarships to study abroad awarded to their inhabitants. Similarly, in most countries in which such students study there is no central source of data on scholarships awarded to students from abroad as they may be offered by many different sources including universities, foundations, private donors and others. There may also be problems with identifying the countries of origin of students.



### Definition

Number of higher education scholarships for study abroad awarded to students from the reporting (i.e. beneficiary) country in a given period (e.g. the last 12 months).



### Calculation method

The sum of all scholarships awarded in a given academic year by donor or host countries to students from the given beneficiary country for study abroad.

**Note on data availability:** this indicator is still in development, therefore data are not available in the UIS database.



### Interpretation

 **A high value indicates...**

that a large number of students from the given beneficiary country are being supported financially to study abroad. This does not indicate the amount of financial support or whether this is sufficient to cover all the students' costs.



### Data sources

Administrative data from providers of higher education scholarships and recipient higher education institutions.

## 4.c.2 Pupil-trained teacher ratio by education level



### Concept

To measure trained teacher workloads and human resource allocations in educational institutions and to give a general indication of the average amount of time and individual attention a pupil is likely to receive from trained teachers.

Since well-trained teachers play a key role in ensuring the quality of education provided, the pupil/trained teacher ratio is considered an important determinant of learning outcomes and an indicator of the overall quality of an education system.



### Definition

Average number of pupils per trained teacher at each level of education (pre-primary, primary, lower and upper secondary education).

A trained teacher is one who has received at least the minimum organized pedagogical teacher training pre-service and in-service required for teaching at the relevant level in a given country.



### Calculation method

$$\text{Indicator} = \frac{\text{Number of pupils and students}}{\text{Number of trained teachers}}$$

The total number of pupils and students in the relevant level is divided by the number of trained teachers in the same level.



### Interpretation



**A high value indicates...**

the lower the relative access of pupils to trained teachers. Results can be compared with established national norms on the number of pupils per trained teacher for each level of education.



### Data sources

Administrative data from schools and other organized learning centres.

## 4.c.3 Percentage of teachers qualified according to national standards by education level and type of institution



### Concept

Teachers play a key role in ensuring the quality of education provided. Ideally, all teachers should receive adequate, appropriate and relevant pedagogical training to teach at the chosen level of education and be academically qualified in the subject(s) they are expected to teach. This indicator measures the share of the teaching work force that is academically well-qualified.



### Definition

Percentage of teachers by level of education taught (pre-primary, primary, lower secondary and upper secondary education) who have at least the minimum academic qualifications required for teaching their subjects at the relevant level in a given country. Ideally, the indicator should be calculated separately for public and private institutions.



### Calculation method

The number of teachers in a given level of education who are qualified is expressed as a percentage of all teachers in that level of education.



### Interpretation

 **A high value indicates...**

that students are being taught by teachers who are academically well qualified in the subjects they teach.



### Data sources

Administrative data from schools and other organized learning centres.

## 4.c.4 Pupil-qualified teacher ratio by education level



### Concept

This indicator seeks to measure qualified teacher workloads and human resource allocations in educational institutions, and to give a general indication of the average amount of time and individual attention a pupil is likely to receive from qualified teachers.

Since qualified teachers play a key role in ensuring the quality of education, the pupil/qualified teacher ratio is considered an important determinant of learning outcomes and an indicator of the overall quality of an education system.



### Definition

Average number of pupils per qualified teacher at each level of education (pre-primary, primary, lower and upper secondary education).

A qualified teacher is one who has at least the minimum academic qualifications required for teaching their subjects at the relevant level in a given country.



## Calculation method

$$\text{Indicator} = \frac{\text{Number of pupils and students}}{\text{Number of qualified teachers}}$$

The total number of pupils and students in the relevant level is divided by the number of qualified teachers in the same level.



## Interpretation



**A high value indicates...**

the lower the relative access of pupils to qualified teachers. Results can be compared with established national norms on the number of pupils per qualified teacher for each level of education.



## Data sources

Administrative data from schools and other organized learning centres.

## 4.c.5 Average teacher salary relative to other professions requiring a comparable level of qualification



## Concept

This indicator aims to provide an assessment of the relative attractiveness of the teaching profession compared to other professions requiring a similar level of qualification. The rationale is that if salaries in the teaching profession are attractive, it is more likely to attract high quality candidates.



## Definition

The annual gross statutory starting salary for a qualified primary or secondary teacher in public institutions relative to the average annual gross statutory starting salary for a basket of professions requiring a similar level of qualifications. This indicator could be presented as a ratio.



## Calculation method

$$\text{Indicator} = \frac{\text{Annual gross statutory starting salary for a qualified teacher}}{\text{Annual gross statutory starting salary for a basket of professions}}$$

Annual gross statutory starting salary for a qualified primary or secondary teacher in public institutions, divided by the annual gross statutory starting salary for a basket of professions which require a comparable level of education.

**Note on data availability: this indicator is still in development, therefore data are not available in the UIS database.**



### Interpretation

If this indicator is presented as a ratio, a value above 1 would indicate that, from a starting salary perspective, the teaching profession is relatively attractive. A value below 1 would suggest that, relative to other professions requiring a similar level of qualifications, the teaching profession is less attractive. Assuming that relative salary is an important motivating factor to recruit high quality teachers (and that is a fair assumption), an indicator with a higher value (above 1) could be considered a positive sign for the recruitment of candidates.



### Data sources

At the national level, salary scales are usually available in ministries of education, and if the basket of comparable professions is for other government employees, salary scales would also be available in their respective ministries (e.g. ministry of health for nurses' salary scale, ministry of interior for police salary scale).

Labour force and/or socio-economic surveys carried out by statistical offices may collect some information about occupation and wages, but it may not be collected in a way appropriate for the calculation of this indicator.

## 4.c.6 Teacher attrition rate by education level



### Concept

Teacher shortage is a significant contributing factor that widens equity gaps in education access and learning. Assessing and monitoring teacher attrition is essential to ensuring a sufficient supply of qualified and well-trained teachers as well as to their effective deployment, support and management.



### Definition

The percentage of teachers at a given level of education leaving the profession in a given school year.





### Calculation method

The number of leavers is estimated by subtracting the number of teachers in year t from those in year t-1 and adding the number of new entrants to the teaching workforce in year t. The attrition rate is the number of leavers expressed as a percentage of the total number of teachers in year t-1.



### Interpretation

**↑ A high value indicates...**

high levels of teacher turnover, which can be disruptive for learners. Where teachers teach for 30 to 40 years, the attrition rate will be well below 5%. Attrition rates above 10% indicate that the average teaching career lasts only ten years.



### Data sources

Administrative data from schools and human resources records on educational personnel.

## 4.c.7 Percentage of teachers who received in-service training in the last 12 months by type of training



### Concept

In-service teacher training programmes usually aim to improve the quality of classroom instruction. Besides pre-service qualification and training requirements, from time to time teachers should receive relevant in-service training for the level of education they teach in order to enhance their teaching proficiency. This indicator measures the share of the teaching work force which received in-service training during the last academic year.



### Definition

Percentage of teachers by level of education taught (pre-primary, primary, lower secondary and upper secondary education) who, during the last academic year, have received the in-service training required for teaching at the relevant level in a given country, by type of training received.



### Calculation method

$$\text{Indicator} = \frac{\text{Number of teachers who received in-service training}}{\text{Total number of teachers}}$$

The number of teachers in a given level of education who received in-service training in the last year of a given type is expressed as a percentage of all teachers at that level of education.

**Note on data availability:** this indicator is still in development, therefore data are not available in the UIS database.



## Interpretation



*A high value indicates...*

that teachers are receiving additional training during their working careers in the given area of training thus enhancing their ability to teach.



## Data sources

Surveys of head teachers or administrative data from schools, other organized learning centres and national teacher training centres.



# 3. Regional monitoring frameworks

SDG 4 monitoring is based on universal principles and emphasises a participatory framework in which all stakeholders (including civil society, business, academia and government) recognise their shared responsibility in achieving the SDGs.

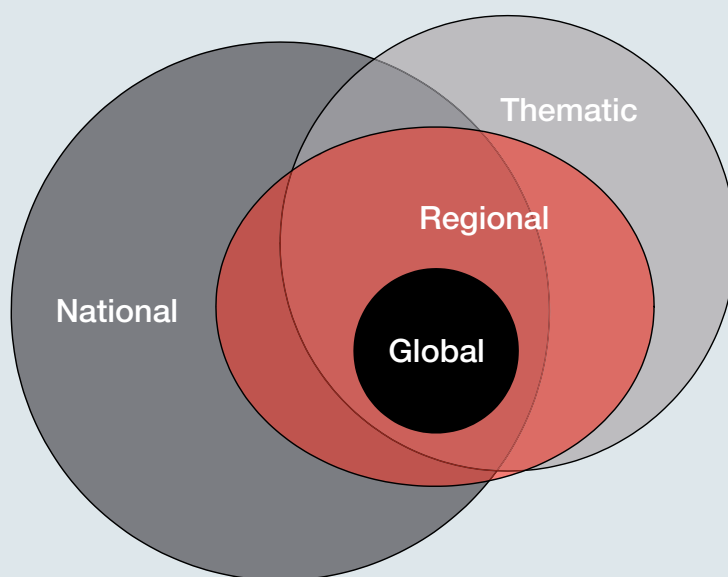
**Figure 25** illustrates the multi-tiered, multi-purpose framework, which is composed of four monitoring levels – global, thematic, regional and national.

**Chapter 1** described the indicators comprising the global monitoring framework, which relies on a limited and carefully selected group of leading indicators to provide an overview of progress towards each target. **Chapter 2** presented the thematic indicators designed to provide a comprehensive perspective on each target,

expanding the thematic coverage of the global indicators. This section provides an overview of the efforts of regional organizations to harmonise their monitoring frameworks.

At the regional level of monitoring, different sets of indicators were developed (or are in process of development) to consider the priorities and issues of common interest that are shared by countries in a particular region, as outlined in regional planning documents or frameworks. Different regions and sub-regions reached agreements on certain goals and targets even before the approval of the SDGs. A crucial step to promote efficiency and to avoid the duplication of efforts is to map the global and regional strategies.

Figure 25. Regional indicators and the four levels of SDG 4 monitoring



Source: UNESCO Institute for Statistics (UIS)

**Table 1. SDG 4 targets and the goals established in each regional plan, regional report or indicator framework**

Target	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.a	4.b	4.c
Africa Union	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CARICOM	Yes		Yes	Yes	Yes	Yes	Yes			Yes
Central American	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes
CEPAL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Commonwealth	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EU	Yes	Yes	Yes	Yes		Yes				
OEI	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes
Pacific Community	Yes	Yes	Yes		Yes	Yes	Yes	Yes		Yes
PacREF	Yes	Yes	Yes	Yes		Yes	Yes			Yes
SAARC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SEAMEO	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: UNESCO Institute for Statistics (UIS)

Worldwide, there are several regional or sub-regional organizations that generate information and promote consensus among countries in the field of education based on common goals. These institutions differ in their organizational structure and level of engagement with educational monitoring. In some agencies, member countries are represented by ministries of education. Others include representatives of civil society or officials appointed by member countries or governments. These entities can also be part of a supra-regional organization. In general, the member countries of these organizations are linked by common features, such as geographic territory (EU, SEAMEO), language (CONFEMEN), or a cultural or historical characteristic (OEI, CARICOM). These organizations

have reached agreements on common educational targets in the medium and long term. Their transnational commitments require national and regional coordination and monitoring mechanisms to identify progress and obstacles. At the same time, they have articulated or begun to articulate their regional objectives with the SDG 4 targets and the Education 2030 Agenda. **Table 1** shows the alignment between the SDG 4 targets and the goals established in each regional plan, regional report or indicator framework developed by these selected organizations.

The following sections briefly describe the SDG 4-related work of these organizations by SDG region. Some share countries located across multiple

SDG regions. In these cases, the organizations are described in the region with the highest number of member countries.

### **Central and Southern Asia**

#### **South Asian Association for Regional Cooperation (SAARC)**

The eight countries of South Asia, which are members of the South Asian Association of Regional Cooperation (SAARC), have jointly formulated the SAARC Framework for Action for Education 2030 (SFFA) affirming their commitment to work together in advancing SDG 4 in the region.

The Framework provides a roadmap for strengthening regional collaboration in education in order to achieve SDG 4-Education 2030 targets. The SAARC Framework for Action constitutes a comprehensive education agenda. It identifies key priorities in each sub-sector of education and training covering all 10 targets of SDG 4, including a number of cross-cutting themes. It is accompanied by a more detailed Action Plan that consists of 13 key thematic areas prioritized for regional collaboration. The SAARC Framework underscores the importance of a regional monitoring mechanism for joint review, monitoring and the evaluation of progress. The draft monitoring framework was developed in consultation with several stakeholders and includes relevant indicators for the region to ensure effective monitoring of progress on SDG 4 in the region.

### **Eastern and South-Eastern Asia**

#### **Southeast Asia Ministers of Education Organization (SEAMEO)**

SEAMEO promotes regional cooperation in education, science and culture. The SEAMEO Council is composed of 11 Ministers of Education who oversee the organization's mandate to

explore the maximum potential of the people of the region through the promotion of quality and equity in education, preventive health, culture and the preservation of tradition, training, research, information and ICT. Its seven priorities for the 2015-2030 Action Agenda presented at the 48th SEAMEO Council Conference are: (i) achieving universal early childhood care and education; (ii) addressing barriers to inclusion; (iii) promoting resiliency in the face of emergencies, (iv) promoting technical and vocational education and training (TVET); (v) revitalizing teacher education; (vi) harmonisation in higher education and research; (vii) adopting a 21st century curriculum.

### **Europe and North America**

#### **European Union**

In 2017, the European Council, Member States and the European Parliament adopted the Consensus on Development, *Our world, our dignity, our future*, in which Member States aligned the development policy of the Union with the 2030 Agenda for Sustainable Development. By contributing to the achievement of the 2030 Agenda, the EU and Member States are seeking to promote a stronger and more sustainable and inclusive approach. The Consensus also offers guidance for the implementation of the Education 2030 Agenda in partnership with all developing countries. The objective is to provide a framework for a common approach to development policy that will be applied by EU institutions and Member States.

### **Latin America and the Caribbean**

#### **Economic Commission for Latin America and the Caribbean (ECLAC)**

ECLAC presents a proposal that contributes to stimulating and sustaining intergovernmental dialogue, with the contribution of specialized bodies, to reach a consensus among Member

Countries on the regional framework of indicators for monitoring the SDGs in Latin America and the Caribbean.

#### **Organización de los Estados Iberoamericanos (OEI)**

The 2021 educational goals of the OEI were adopted by Ibero-American countries in 2008. This framework is linked to several SDG 4 targets, but the OEI is in the process of aligning its goals with the Education 2030 Agenda.

#### **Caribbean Community (CARICOM)**

The CARICOM 2030 Human Resources Development (HRD) Strategy is a regional framework developed to ensure the successful participation of the Caribbean community in the economy and society of the 21st century. The CARICOM 2030 HRD Strategy is articulated in the CARICOM Strategic Plan (2015-2019). Following the global assessment of the Millennium Development Goals and the Post-2015 Development Agenda, the strategy focuses on the SDGs.

#### **Sistema de la Integración Centroamericana**

The *Política Educativa Centroamericana* (PEC) is a set of guidelines to provide the eight Member Countries of the *Sistema de la Integración Centroamericana* with a general framework of action in education based on regional priorities.

This framework was adapted and aligned to the SDG 4-Education 2030 Agenda considering the regional priorities. Currently PEC 2030 establishes the way forward on education development for Central America and a specific indicator framework was also developed to monitor that implementation.

#### **Oceania**

##### **Pacific Community (SPC)**

The Pacific Community is an international development organization owned and governed by

its 26 country and territory members. The Pacific Community Strategic Plan 2016-2020 proposes goals and priorities. The SPC recognizes that national programmes and services must adapt to the new development landscape at the national, regional and global levels. These programmes should reflect the strategic direction established in the Framework for Pacific Regionalism, the regional priorities identified in the Small Island Developing States (SIDS) Accelerated Modalities of Action (SAMOA) Pathway and the commitments of the SDGs.

##### **Pacific Regional Education Framework (PacREF)**

The PacREF promotes a human rights approach to education and seeks to empower the people of the Pacific Islands. The PacREF is based on six targets: regionalism and mutually beneficial partnerships; the application of tests to policies and practices; efficiency in the use of resources; equity in access and opportunity and relevant and high-quality contributions, and high-quality and sustainable results. The PacREF has a programme of strategies and activities in four policy areas: (i) quality and relevance; (ii) learning pathways; (iii) student welfare and outcomes, and (iv) the teaching profession.

#### **Sub-Saharan Africa**

##### **African Union**

In 2016, the African Union adopted the Continental Education Strategy for Africa (CESA 16-25) as the framework for transforming education systems in Africa. CESA 16-25 is designed to involve the broadest coalition possible for education and training in Africa. This approach implies the acceptance and adaptation of the global Education 2030 Agenda linked to SDG 4 to focus on Africa's specific priorities. The CESA 16-25 comprises 12 strategic objectives that are easily mapped to the SDG 4 targets, and therefore both frameworks require similar data points to track countries' progress on their achievements. At the sub-regional level, countries are grouped within

development communities that meet regularly, but their education-related objectives are in alignment with the CESA 16-25.

#### Commonwealth Secretariat

The Commonwealth is a voluntary association of 53 independent and equal sovereign states. The

Commonwealth Secretariat provides guidance on policymaking, technical assistance and advisory services to Commonwealth Member Countries. In 2018, the Secretariat produced a status report on the indicators relating to SDG 4 among Member States of the Commonwealth of Nations.





# Summary

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Sustainable Development Goal 4 and its associated targets represent an ambitious vision of inclusive and equitable education for the world. The challenge of monitoring countries' progress to achieve this goal is both important and urgent.

The monitoring framework described in this report is the result of unprecedented efforts made by the global education community to provide information on key elements surrounding educational change within countries. In its efforts, the UIS and its partners have emphasised the importance of facilitating the greater participation of countries in the monitoring process at the global, regional and national levels.

As some countries are at the starting point for national monitoring, ensuring that “no one will be left behind” requires that all national collaborators have full access and knowledge of the entire monitoring process. This involves several aspects described in this report such as data availability; consistency in data collection and learning assessments; reporting consistency; implementation of quality assurance, and procedural alignment mechanisms aimed at ensuring data integrity.

In this report, the UIS provides a panoramic view of the current stage of implementation of SDG 4 global monitoring as well as the various alternatives for data collection and reporting associated with SDG 4 at the international level. In terms of data sources, multiple stakeholders collect data relevant to SDG 4 monitoring. Some of these data sources include international organizations, national statistics offices, schools and line ministries, and other relevant state

agencies. The multiplicity of existing methods and/or sources involved in the data collection process reinforce the importance of ensuring that minimum standards are adopted in each country to ensure quality and comparability as well as monitoring countries' progress towards the targets of SDG 4. In the case of target 4.1, for instance, a common protocol has been created to address the two main challenges encountered in the reporting process: consistency and quality. In terms of reporting consistency, the UIS has adopted an approach that allows flexibility in reporting, but with an emphasis on growing alignment over time. Procedural alignment is also imperative in the context of ensuring the comparability of data as a means of maximising data quality and minimising variations in the results reported. Defining minimum procedures ensures data integrity and allows for the comparison of results from different countries and assessment contexts.

In addition to the 11 global indicators, this report presented the supplementary set of 32 thematic indicators developed by the UIS, together with partner organizations and others, to provide countries with monitoring guidance around a specific set of education-related concepts. This thematic indicator framework was created with the overall objective of monitoring the education goal contained in the 2030 Agenda for Sustainable Development: “Ensure inclusive and equitable quality education and promote lifelong learning for all”. Thus, the supplementary thematic indicators cover detailed aspects of SDG 4 that could not be addressed within a limited number of global indicators and provides an overview of the progress towards each target. Some key educational indicators monitored across countries include the

administration of a nationally representative learning assessment; the completion rate of students across all levels of educational attainment; the out-of-school rate, and the gross early childhood enrolment ratio.

The UIS has demonstrated in this report that the monitoring of SDG 4 indicators is based on universal principles with an emphasis on establishing a participatory framework where all stakeholders (i.e. civil society, business, academia and government) recognise their shared responsibility in achieving the global indicators. In this regard, the monitoring of SDG 4 indicators at a regional level is an important domain in which countries can improve their data collection and assessment processes as well as identifying their data capacity needs.

Several sets of indicators were developed (or are in process of being developed) to consider the priorities and issues of common interest to countries in a particular region. This represents a crucial

step towards advancing efficiency and avoiding a duplication of efforts in the roll-out of global and regional strategies directed at achieving the SDG 4 targets. In a context where several regional or sub-regional organizations are seeking to generate information and promote consensus among countries on common education goals, it is now clear that these entities need to come together and be part of a supra-regional organization.

The potential for such collaboration becomes all the more probable when examining the common features shared by organizations in UNESCO Member States, such as a common geographical territory (i.e. EU). Already, countries have begun to articulate their regional objectives with respect to the SDG 4 – Education 2030 Agenda alongside existing agreements reached on medium and long-term education targets. However, these trans-national agreements require national and regional coordination as a means of identifying progress and difficulties in the SDG 4 monitoring and reporting processes.

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# Appendix A.

## Global indicators' survey questions

Indicator	Item	Question	Categories	Sources
4.3.1	F1	<b>Formal education:</b> During the last 12 months, that is since [specify: month, year] Have you been a student or apprentice in formal education or training?	[Yes/No]	TCG/UIS
4.3.1	F2	<i>If yes in F1</i> What was the level of the most recent formal education or training activity?	[ISCED 1-8]	TCG/UIS
4.3.3	F3	<i>If yes in F1</i> Was any formal education or training activity during the last 12 months a technical or vocational programme?	[Yes/No]	TCG/UIS
4.6.3	F4	<i>If yes in F1</i> Was the focus of any formal education or training activity during the last 12 months to improve your literacy skills?	[Yes/No]	TCG/UIS
4.3.1	NF1	<b>Non-formal education:</b> During the last 12 months, that is since [specify: month, year] Have you participated in any of the following activities with the intention to improve knowledge or skills in any area (including hobbies) either in leisure time or in working time? · a course? · a workshop or seminar? · guided on-the-job training? · a private lesson?	[Yes/No]	TCG/UIS
4.3.3	NF2	<i>If any yes in NF1</i> Was any of these education or training activities a technical or vocational programme?	[Yes/No]	TCG/UIS
4.6.3	NF3	<i>If any yes in NF1</i> Was the focus of any of these education or training activities to improve your literacy skills?	[Yes/No]	TCG/UIS
4.4.1		Which of the following computer-related activities have you carried out in the last three months? Please tick all that apply:  (1) Copying or moving a file or folder; (2) using copy and paste tools to duplicate or move information within a document; (3) sending e-mails with attached files for example, a document, picture, video; (4) using basic arithmetic formulas in a spreadsheet; (5) connecting and installing new devices for example, a modem, camera, printer; (6) finding, downloading, installing and configuring software; (7) creating electronic presentations with presentation software including text, images, sound, video or charts; (8) transferring files between a computer and other devices; (9) writing a computer program using a specialized programming language.	[Question]	ITU



# SDG 4 Data Digest

## How to Produce and Use the Global and Thematic Education Indicators

This edition of the *SDG 4 Data Digest* from the UNESCO Institute for Statistics (UIS) aims to help countries develop and report the indicators needed to deliver on the promise of Sustainable Development Goal 4 – a quality education for all by 2030.

It stresses the urgency: every child in the generation that should finish secondary education by the deadline should be in a primary classroom right now. Yet if current trends continue, and without a rapid shift from “business as usual”, one in six children aged 6 to 17 will still be out of school in 2030 while just six in ten youth will be completing secondary education. Moreover, there is an urgent need to improve the quality of education on offer. According to UIS estimates, 55% of children and adolescents of primary and lower secondary school age are not achieving minimum proficiency levels in reading and 60% are not acquiring critical skills in mathematics

The investment case for education is clear and has been repeated time and time again: education reduces poverty, improves health and nutrition, advances equity and drives national prosperity. But education systems cannot function effectively without a clear picture of progress – or the lack of it – and without knowing who is missing out on education and why.

To help fill such gaps, the *Digest* focuses on new methodologies to help countries build a full and accurate understanding of their own education successes and challenges while generating the internationally comparable data needed for global monitoring. Through these methodological tools, countries can track and accelerate progress on their own education priorities and contribute to the global achievement of SDG 4.