



SDG indicator metadata

(Harmonized metadata template - format version 1.0)

0. Indicator information

0.a. Goal

Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

0.b. Target

Target 4.6: By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy

0.c. Indicator

Indicator 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

0.d. Series

Not applicable.

0.e. Metadata update

March 2020

0.f. Related indicators

1.2, 1.5, 2.1, 2.2, 2.3, 3.1, 3.3, 3.4, 3.7, 4.5, 5.3, 5.4, 5.5, 5.6, 8.5, 8.6, 8.b, 10.2, 12.8, 13.3, 13.b

0.g. International organisations(s) responsible for global monitoring

UNESCO Institute for Statistics (UNESCO-UIS)

1. Data reporter

1.a. Organisation

UNESCO Institute for Statistics (UNESCO-UIS)

2. Definition, concepts, and classifications

2.a. Definition and concepts

Definition:

The proportion of youth (aged 15-24 years) and of adults (aged 15 years and above) who have achieved or exceeded a fixed level of proficiency in (a) literacy and (b) numeracy.

Concepts:

The **fixed level of proficiency (FLP)** is the benchmark of basic knowledge in a domain (literacy or numeracy) measured through learning assessments. Currently, the FLP for global reporting is PIAAC level 2 descriptor. 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 he/she can engage in all those activities in which literacy is required for the effective functioning of his/her group and community and also which enables them to continue to use reading, writing and calculation for his/her own and the community's development.

2.b. Unit of measure

This indicator is expressed as proportion of youth and of adults who have achieved or exceeded a fixed level of proficiency in (a) literacy and (b) numeracy.

2.c. Classifications

Fixed levels of proficiency in literacy and numeracy:

Literacy:

At this level, the medium of texts may be digital or printed, and texts may comprise continuous, non-continuous, or mixed types. Tasks at this level require respondents to make matches between the text and information, and may require paraphrasing or low-level inferences. Some competing pieces of information may be present. Some tasks require the respondent to

- cycle through or integrate two or more pieces of information based on criteria;
- compare and contrast or reason about information requested in the question; or
- navigate within digital texts to access and identify information from various parts of a document.

Numeracy:

Tasks at this level require the respondent to identify and act on mathematical information and ideas embedded in a range of common contexts where the mathematical content is fairly explicit or visual with relatively few distractors. Tasks tend to require the application of two or more steps or processes involving calculation with whole numbers and common decimals, percents and fractions; simple measurement and spatial representation; estimation; and interpretation of relatively simple data and statistics in texts, tables and graphs.

Level 2 of PIAAC was adopted as the global definition of Fixed Level of Proficiency (FLP) in literacy and numeracy as presented in the following tables.

Table: Description of proficiency levels in literacy

Level	Types of tasks completed successfully at each level of proficiency	FLP
Below Level 1	The tasks at this level require the respondent to read brief texts on familiar topics to locate a single piece of specific information. There is seldom any competing information in the text and the requested information is identical in form to information in the question or directive. The respondent may be required to locate information in short continuous texts. However, in this case, the information can be located as if the text were non-continuous in format. Only basic vocabulary knowledge is required, and the reader is not required to understand the structure of sentences or paragraphs or make use of other text features. Tasks below Level 1 do not make use of any features specific to digital texts.	
Level 1	Most of the tasks at this level require the respondent to read relatively short digital or print continuous, non-continuous, or mixed texts to locate a single piece of information that is identical to or synonymous with the information given in the question or directive. Some tasks, such as those involving non-continuous texts, may require the respondent to enter personal information onto a document. Little, if any, competing information is present. Some tasks may require simple cycling through more than one piece of information. Knowledge and skill in recognising basic vocabulary determining the meaning of sentences, and reading paragraphs of text is expected.	
Level 2	At this level, the medium of texts may be digital or printed, and texts may comprise continuous, non-continuous, or mixed types. Tasks at this level require respondents to make matches between the text and information and may require paraphrasing or low-level inferences. Some competing pieces of information may be present. Some tasks require the respondent to <ul style="list-style-type: none"> • cycle through or integrate two or more pieces of information based on criteria; • compare and contrast or reason about information requested in the question; or • navigate within digital texts to access and identify information from various parts of a document. 	Yes

Level	Types of tasks completed successfully at each level of proficiency	FLP
Level 3	Texts at this level are often dense or lengthy, and include continuous, non-continuous, mixed, or multiple pages of text. Understanding text and rhetorical structures become more central to successfully completing tasks, especially navigating complex digital texts. Tasks require the respondent to identify, interpret, or evaluate one or more pieces of information, and often require varying levels of inference. Many tasks require the respondent to construct meaning across larger chunks of text or perform multi-step operations in order to identify and formulate responses. Often tasks also demand that the respondent disregard irrelevant or inappropriate content to answer accurately. Competing information is often present, but it is not more prominent than the correct information.	
Level 4	Tasks at this level often require respondents to perform multiple-step operations to integrate, interpret, or synthesise information from complex or lengthy continuous, non-continuous, mixed, or multiple type texts. Complex inferences and application of background knowledge may be needed to perform the task successfully. Many tasks require identifying and understanding one or more specific, non-central idea(s) in the text in order to interpret or evaluate subtle evidence-claim or persuasive discourse relationships. Conditional information is frequently present in tasks at this level and must be taken into consideration by the respondent. Competing information is present and sometimes seemingly as prominent as correct information.	
Level 5	At this level, tasks may require the respondent to search for and integrate information across multiple, dense texts; construct syntheses of similar and contrasting ideas or points of view; or evaluate evidence-based arguments. Application and evaluation of logical and conceptual models of ideas may be required to accomplish tasks. Evaluating reliability of evidentiary sources and selecting key information is frequently a requirement. Tasks often require respondents to be aware of subtle, rhetorical cues and to make high-level inferences or use specialised background knowledge.	

Source: OECD-PIAAC (2013): OECD Skill Outlook 2013

Note: STEP uses the same methodology as PIAAC

Table: Description of proficiency levels in numeracy

Level	Types of tasks completed successfully at each level of proficiency	MLP
Below Level 1	Tasks at this level require the respondents to carry out simple processes such as counting, sorting, performing basic arithmetic operations with whole numbers or money, or recognising common spatial representations in concrete, familiar contexts where the mathematical content is explicit with little or no text or distractors.	
Level 1	Tasks at this level require the respondent to carry out basic mathematical processes in common, concrete contexts where the mathematical content is explicit with little text and minimal distractors. Tasks usually require one-step or simple processes involving counting, sorting, performing basic arithmetic operations, understanding simple percents such as 50%, and locating and identifying elements of simple or common graphical or spatial representations.	
Level 2	Tasks at this level require the respondent to identify and act on mathematical information and ideas embedded in a range of common contexts where the mathematical content is fairly explicit or visual with relatively few distractors. Tasks tend to require the application of two or more steps or processes involving calculation with whole numbers and common decimals, percents and fractions; simple measurement and spatial representation; estimation; and interpretation of relatively simple data and statistics in texts, tables and graphs.	Yes
Level 3	Tasks at this level require the respondent to understand mathematical information that may be less explicit, embedded in contexts that are not always familiar and represented in more complex ways. Tasks require several steps and may involve the choice of problem-solving strategies and relevant processes. Tasks tend to require the application of number sense and spatial sense; recognising and working with mathematical relationships, patterns, and proportions expressed in verbal or numerical form; and interpretation and basic analysis of data and statistics in texts, tables and graphs.	
Level 4	Tasks at this level require the respondent to understand a broad range of mathematical information that may be complex, abstract or embedded in unfamiliar contexts. These tasks involve undertaking multiple steps and choosing relevant problem-solving strategies and processes. Tasks tend to require analysis and more complex reasoning about quantities and data; statistics and chance; spatial relationships; and change, proportions and formulas. Tasks at this level may also require understanding arguments or communicating well-reasoned explanations for answers or choices.	
Level 5	Tasks at this level require the respondent to understand complex representations and abstract and formal mathematical and statistical ideas, possibly embedded in complex texts. Respondents may have to integrate multiple types of mathematical information where considerable translation or interpretation is required; draw inferences; develop or work with mathematical arguments or models; and justify, evaluate and critically reflect upon solutions or choices.	

Source: OECD-PIAAC (2013): OECD Skill Outlook 2013

Note: STEP uses the same methodology as PIAAC

3. Data source type and data collection method

3.a. Data sources

This indicator is collected via skills' assessment surveys of the adult population (e.g., PIAAC, STEP, LAMP, RAMAA) and national adult literacy surveys.

3.b. Data collection method

Data are collected from the respective organizations responsible for each assessment.

3.c. Data collection calendar

Various depending on survey and country.

3.d. Data release calendar

Data is released by the UIS in February/March and September every year.

3.e. Data providers

This indicator is collected via skills national or international assessment surveys of youth and adult populations. 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) measurement programme, both based on the PIAAC framework and scale, and bodies responsible for conducting national learning assessments (including Ministries of Education, National Statistical Offices and other data providers) are sources of data of this indicator.

3.f. Data compilers

UNESCO Institute for Statistics

3.g. Institutional mandate

The UNESCO Institute for Statistics (UIS) is the statistical branch of the United Nations Educational, Scientific and Cultural Organization (UNESCO). The Institute produces internationally comparable data and methodologies in the fields of education, science, culture and communication for countries at all stages of development.

The [Education 2030 Framework for Action 100](#) has clearly states that: *"In recognition of the importance of harmonization of monitoring and reporting, the UIS will remain the official source of cross-nationally comparable data on education. It will continue to produce international monitoring indicators based on its annual education survey and on other data sources that guarantee international comparability for more than 200 countries and territories. In addition to collecting data, the UIS will work with partners to develop new*

indicators, statistical approaches and monitoring tools to better assess progress across the targets related to UNESCO's mandate, working in coordination with the SDG-Education 2030 SC"

4. Other methodological considerations

4.a. Rationale

The indicator is a direct measure of the skill levels of youth and adults in the two areas: literacy and numeracy.

4.b. Comment and limitations

Functional literacy and numeracy are related to context thus survey programs need further development in order to frame questions in a way that are meaningful to different economic and social-settings and could be more efficient to reflect population level of skills.

4.c. Method of computation

Proportion of youth and adults who have achieved at least a fixed level of proficiency as defined for large-scale (sample representative) adult literacy and numeracy assessments:

$$PFLP_{t,a,d} = \frac{FLP_{t,a,d}}{P_{t,a,d}}$$

where:

$PFLP_{t,a,d}$ = the proportion of people in a skills survey in age group **a**, in year **t**, who have achieved or exceeded the fixed level of proficiency in domain **d**.

$FLP_{t,a,d}$ = the number of people in a skills survey in age group **a**, in year **t**, who have achieved or exceeded the fixed level of proficiency in domain **d**.

$P_{t,a,d}$ = the total number of people in age group **a**, in year **t**, who participated in the skills survey of domain **d**.

a = 16-65 years (youth and adults)

d = the domain which was assessed (literacy or numeracy)

4.d. Validation

In each data update period, surveys of recent publications of results of national and international assessments are carried out. Then, consultations are made with national references and UIS technical focal points to verify the availability and validity of the data.

4.e. Adjustments

Not applicable

4.f. Treatment of missing values (i) at country level and (ii) at regional level

- At country level
None by data compiler.
- At regional and global levels
None by data compiler.

4.g. Regional aggregations

Regional and global aggregates are not currently available for this indicator.

4.h. Methods and guidance available to countries for the compilation of the data at the national level

The UIS has elaborated guidance for the countries regarding the contents, the procedures and the reporting in the Global Alliance to Monitor Learning [microsite](#).

4.i. Quality management

The UIS maintains a global database on learning assessments. The inclusion of a data point in the database to show transparency is completed by following a protocol and is reviewed by UIS technical focal points to ensure consistency and overall data quality, based on objective criteria to ensure that only the most recent and reliable information are included in the database.

4.j Quality assurance

OECD is the data compiler for PIAAC and the World Bank Group is the compiler for STEP, both used the PIAAC framework and skills level descriptors.

4.k Quality assessment

The criteria to ensure the quality and standardization of the data are: the data sources must include adequate documentation; data values should be representative at the national population level and should otherwise be included in a footnote; data values are based on a sufficiently large sample; and the data are plausible and based on trends and consistency with previously published or reported estimates for the indicator.

5. Data availability and disaggregation

Data availability:

45 countries with at least one data point for the period 2010-2017.

Time series:

2006 onwards.

Disaggregation:

Indicators are published disaggregated by age group, sex, socio-economic status, and immigration status, as available. Parity indexes are estimated in the reporting of Indicator 4.5.1. Information on the disaggregation of variable for Indicator 4.6.1 are presented in the following table.

Assessment	Definition	Categories	Item and component description	Parity index (PI)	Relevant Link
Sex					
PIAAC	Sex of respondent	2	Is the respondent male or female? Answer options: Female, Male	Female/Male	https://www.oecd.org/skills/piaac/Complementary%20information%20from%20the%20Background%20Questionnaire.pdf
STEP	Sex of respondent	2	Is the respondent male or female? Answer options: Female, Male	Female/Male	http://documents.worldbank.org/curated/en/516741468178736065/STEP-skills-measurement-surveys-innovative-tools-for-assessing-skills

Assessment	Definition	Categories	Item and component description	Parity index (PI)	Relevant Link
Socio-economic status					
PIAAC	Education parents. Reporting categories	Two categories	<p>What was the highest level of education your father/mother or male/female guardian ever completed? Primary or lower secondary education, Upper secondary education and Tertiary education.</p> <p>Two categories are tabulated for this indicator: i) Neither parents has attained tertiary and ii) At least one parent has attained tertiary</p>	Neither parents has attained tertiary/At least one parent has attained tertiary	https://www.oecd.org/skills/piaac/PIAAC(2011_11)MS_BQ_ConceptualFramework_1%20Dec%202011.pdf
STEP	Education parents. Reporting categories	Two categories	<p>What was the highest level of education your father/mother or male/female guardian ever completed? Primary or lower secondary education, Upper secondary education and Tertiary education.</p> <p>Two categories are tabulated for this indicator: i) Neither parents has attained tertiary and ii) At least one parent has attained tertiary</p>	Neither parents has attained tertiary/At least one parent has attained tertiary	

Assessment	Definition	Categories	Item and component description	Parity index (PI)	Relevant Link
Immigration status					
PIAAC	Country of birth	Country specific	Were you born in... Country Name?	Foreign-born/Native-born	http://www.oecd.org/skills/piaac/Background%20Questionnaire%2015DEC10.pdf https://www.oecd.org/skills/piaac/PIAAC(2011_11)MS_BQ_ConceptualFramework_1%20Dec%202011.pdf
STEP	Country of birth	Country specific	Were you born (country)?	Non native/native born	http://documents.worldbank.org/curated/en/516741468178736065/STEP-skills-measurement-surveys-innovative-tools-for-assessing-skills

PIAAC: Programme for the International Assessment of Adult Competencies

STEP: Skills Towards Employment and Productivity

6. Comparability / deviation from international standards

Sources of discrepancies:

None.

7. References and Documentation

URL:

<http://www.uis.unesco.org/Pages/default.aspx>

References:

Programme for the International Assessment of Adult Competencies (PIAAC):

<http://www.oecd.org/site/piaac/>

STEP Skills Measurement Programme: <http://microdata.worldbank.org/index.php/catalog/step/about>

Action Research: Measuring Literacy Programme Participants' Learning Outcomes (RAMAA):

<https://uil.unesco.org/literacy-and-basic-skills/assessment-and-monitoring-ramaa>