United Nations Educational, Scientific and Cultural Organization

UNESCO INSTITUTE FOR STATISTICS

SUSTAINABLE DEVELOPMENT GOALS

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

METADATA

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

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

Percentage of youth and of adults who have achieved or exceeded a given level of proficiency in (a) literacy and (b) numeracy.

The **fixed level of proficiency (FLP)** is the minimum 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 (please see Protocol for reporting Indicator 4.6.1 Section).

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 also which enables them to continue to use reading, writing and calculation for their own and the community's development.

Purpose

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

Calculation method

Percentage of youth and adults who have achieved at least the minimum threshold of proficiency as defined for large-scale (representative sample) adult literacy and numeracy assessment:

$$MPL_{t,a,d} = \frac{MP_{t,a,d}}{P_{t,a,d}}$$

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where:
$MP_{t,a,d}$ = the number of people in a learning assessment in age group **a**, in year **t**, who have achieved or exceeded the minimum proficiency level in domain **d** in a given learning assessment

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

a = 16-65 years (youth and adults)
d = the domain which was assessed (literacy or numeracy)

Interpretation
There is one threshold that divides youth and adults into below or above the fixed or minimum proficiency level.

i. Below the fixed proficiency level is the percentage of youth and adults who have not achieved the minimum proficiency level.
ii. At or above the fixed proficiency level is the percentage of youth and adults who have achieved at least the minimum proficiency level.

Due to heterogeneity of performance levels set by national and cross-national assessments, the performance levels, including the fixed or minimum proficiency level, will be based on a global competency or skills framework.

Type of data source
For global reporting, the source of data are population-based surveys with a learning assessment component.

This indicator is collected via skills 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, based on the PIAAC framework, are potential sources of data of this indicator. Both PIAAC and STEP surveys can be put on a common scale, as they are linked psychometrically by design.

Domain	Type of assessment		Which age group to select
	Cross-national	National	
Literacy	PIACC STEP	Yes	15 or 16 to 64 or 65 years old population
Numeracy	PIACC STEP	Yes	15 or 16 to 64 or 65 years old population

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					
PIACC	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

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Assessment	Definition	Categories	Item and component description	Parity index (PI)	Relevant Link
Socio-economic status					
PIACC	Education parents. Reporting categories	Two categories	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. Two categories are tabulated for this indicator: i) Neither parents has attained tertiary and ii) At least one parent has attained tertiary	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	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. Two categories are tabulated for this indicator: i) Neither parents has attained tertiary and ii) At least one parent has attained tertiary	Neither parents has attained tertiary/At least one parent has attained tertiary	

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Assessment	Definition	Categories	Item and component description	Parity index (PI)	Relevant Link
Immigration status					
PIACC	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

PIACC: Programme for the International Assessment of Adult Competencies
STEP: Skills Towards Employment and Productivity

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Protocol for reporting Indicator 4.6.1

1. Fixed levels of proficiency in literacy and numeracy

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
Bellow 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 • 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

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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-PIACC (2013): OECD Skill Outlook 2013
Note: STEP uses the same methodology as PIACC

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Table: Description of proficiency levels in numeracy

Level	Types of tasks completed successfully at each level of proficiency	MLP
Bellow 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-PIACC (2013): OECD Skill Outlook 2013
Note: STEP uses the same methodology as PIACC

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2. Metadata points

Footnotes are added to data points to indicate the data source (name of the assessment) and the sample coverage when sample is not nationally-representative.

Limitations and comments

Using household-based assessment surveys to measure literacy and numeracy can be costly and difficult to administer and may underestimate functional skills in areas that are critical to daily life but are harder to assess in standardised approaches. The result may be inaccurate representations of what youth and adults know and can do, especially in relation to foundational skills that may vary widely across cultural contexts and orthography. Other alternative estimates could be considered.