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 (aged 15-24 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, there are no common standards to determine the fixed level of proficiency that have been validated by the international community or countries. The indicator shows data published by 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 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 the two areas: 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:

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

where:

$\mathbf{MP_{t,a,d}}$ = 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 = 15-24 years (youth) or 15 years and older (adults)

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

Interpretation:

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

(a) Below the fixed proficiency level is the percentage of youth and adults who have not achieved the minimum proficiency level as established by countries according to the global competency or skills framework.
(b) 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, these performance levels will be based on a global competency or skills framework. Once the performance levels are established, the global education community will be able to identify for each country the percentage of youth and adults who achieved at least the minimum proficiency level.

Type of data source:

Learning assessments in household surveys.

Disaggregation:

By age group, sex, location, income, type of skill, and others as available.

Data required:

Performance level data from national and cross-national adult literacy and numeracy assessments.

Data sources:

This indicator is collected via skills assessment surveys of the 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 this indicator. Both PIAAC and STEP surveys can be put on a common scale as they are linked psychometrically by design. A new short literacy and numeracy module based on LAMP has recently been developed to offer a less costly

and technically demanding option for countries. Of the cross-national surveys, only PIAAC and the new short LAMP measure both skills. STEP only measures literacy.

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.

4.6.2 Youth/adult literacy rate

Definition:

Percentage of youth (aged 15-24 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.

Purpose:

The literacy rate indicates the proportion of a given population that has a minimum level of reading and writing skills. The interpretation of the indicator is strongly linked to the method of data collection.

Calculation method:

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.

$$LR_{AGi} = \frac{LP_{AGi}}{P_{AGi}}$$

where:

LR_{AGi} = literacy rate of population in age group **i**

LP_{AGi} = literate population in age group **i**

P_{AGi} = population in age group **i**, 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.

Type of data source:

Population censuses, household surveys.

Disaggregation:

By age group, sex, location, and others as available in survey or census data, for example by household wealth or a variety of other demographic and socio-economic characteristics.

The options for disaggregation may be limited by the sample size in a survey.

Data required:

Population in the relevant age group by literacy status (literate/illiterate).

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 like the Demographic and Health Surveys (DHS, http://dhsprogram.com) and Multiple Indicator Cluster Surveys (MICS, http://mics.unicef.org) 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.

Limitations and comments:

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.

In most high-income economies, but also many other countries, the adult and youth literacy rates are near 100% because most persons are able to read and write, but a certain proportion of the population may be at the lower end of the continuum of literacy skills.

Some countries derive literacy rates from data on educational attainment. This approach is not recommended because literacy skills can be obtained without participation in formal education. Moreover, reading and writing skills obtained in school can be lost later in life if they are not regularly applied.

Data from more sophisticated assessments of literacy, for example the Survey of Adult Skills that is carried out as part of the Programme for the International Assessment of Adult Competencies (PIAAC) by the OECD, are not directly comparable with the results of simple self- or household-declaration of the ability to read and write in a household survey or census. The data from PIAAC and similar assessments are therefore not suitable to divide the population into literate and illiterate parts.

4.6.3 Participation rate of youth/adults in literacy programmes

Definition:

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

Purpose:

To show the level of participation of illiterate youth and adults in literacy programmes.

Calculation method:

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.

$$\mathbf{PRLP}^{t}_{a} = \frac{\mathbf{PartLit}^{t}_{a}}{\mathbf{IllitPop}^{t}_{a}}$$

where:

$\mathbf{PRLP}^{t}_{a}$ = participation rate of the population of age group **a** in literacy programmes in year **t**

$\mathbf{PartLit}^{t}_{a}$ = participants in literacy programmes of age group **a** in year **t**

$\mathbf{IllitPop}^{t}_{a}$ = Illiterate population of age group **a** in year **t**

a =15-24 years (youth) or 15 years and older (adults)

Interpretation:

A high rate denotes 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 literate programmes of their target population.

Type of data source:

Administrative data, household surveys, and population censuses.

Disaggregation:

By age, sex, location, and income (depending on the data source) and others as available.

Data required:

Number of participants in the relevant age group in literacy programmes; illiterate population estimates for the same age groups.

Data sources:

Administrative or household data on participation in literacy programmes for the age groups defined, combined with illiterate population estimates for the same age groups.

Limitations and comments:

The indicator values must be analysed with caution and together with other indicators reflecting the literacy situation of the population because of its limitations.

The theoretical maximum value of 100% is under the assumption that literate population will not enrol or attend literacy programmes.

The degree of coverage of the illiterate population measured by this indicator might be underestimated because of the exclusion of illiterate population that have decided to attend primary education programmes instead of specifically-designed literacy programmes.

When numerator and denominator are taken from household surveys, special attention should be given to the estimations' standard errors mainly in countries with very high levels of literacy where the sample sizes and design might not be appropriate for producing the indicator. When numerator and denominator are taken from different data sources (e.g. administrative data and household survey or population estimates), there will be possibilities of inconsistencies.