4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent work and entrepreneurship

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

Purpose:

ICT skills determine the effective use of information and communication technology. The lack of such skills continues to be one of the key barriers keeping people, and in particular women, from fully benefitting from the potential of information and communication technologies.

Calculation method:

The indicator is calculated as the percentage of people in a given population who have responded 'yes' to a selected number of variables e.g. the use of ICT skills in various subject areas or learning domains, the use of ICT skills inside or outside of school and/or workplace, the minimum amount of time spent using ICT skills inside and outside of school and/or workplace, availability of internet access inside or outside of school and/or workplace, etc.

$$\mathbf{PICT_{a,s}} = \frac{\mathbf{ICT_{a,s}}}{\mathbf{P_a}}$$

where:

$PICT_{a,s}$ = percentage of people in age group **a** who have ICT skill **s**

$ICT_{a,s}$ = number of people in age group **a** who have ICT skill **s**

P_a = population in age group **a**

Interpretation:

This indicator makes the link between ICT usage and impact and helps measure and track the level of proficiency of users. A high value indicates that a large share of the reference population has the ICT skill being measured.

Type of data source:

School or household surveys.

Disaggregation:

By age or age-group, sex, location, socio-economic status, and others as available.

Data required:

Information on the use of ICT skills from school or household surveys.

Data sources:

School or household surveys which collect data on the use of selected ICT skills.

Limitations and comments:

This indicator is relatively new but based on an internationally-agreed definition and methodology, which have been developed under the coordination of the International Telecommunications Union (ITU), through its Expert Groups and following an extensive consultation process with countries. It is also one of the Partnership on Measuring ICT for Development's Core List of Indicators, which was endorsed by the UN Statistical Commission in 2014.

The indicator is based on the responses provided by interviewees regarding certain computer-related activities that they have carried out in a reference period of time. However, it is not a direct assessment of skills nor do we know if those activities were undertaken effectively.

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

Definition:

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

Purpose:

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. Proficiency in literacy and numeracy is important for using ICT applications effectively to manage information. This indicator is a direct measure of the digital literacy skills of youth/adults.

Calculation method:

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.

Percentage of students or youth in year **t** who have achieved at least the minimum threshold of proficiency defined for large-scale (representative sample) ICT skills assessment:

$$MPL_{t,} = \frac{MP_t}{P_t}$$

where:

$MP_{t,}$ = the number of students or youth in year **t**, who have achieved or exceeded the minimum proficiency level in ICT digital skills.

P_t = the total population in the relevant age in year **t**

Interpretation:

There is only one threshold that divides students or youth into below minimum or at 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.

Type of data source:

Learning assessments, household surveys.

Disaggregation:

By age or age-group, sex, location, socio-economic status and others as available.

Data required:

Performance level data and how these performance levels are set up from the national and cross-national assessments (e.g. IEA's ICILS, OECD's PIAAC)

Data sources:

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 15-65) have collected data on 9th and 10th graders, youth and adults.

Limitations and comments:

A common framework, including the target population and content coverage, and further methodological work, including a common reporting metric, are required to develop surveys to assess digital literacy skills for youth and adult age groups. The UIS has developed and consulted on a Digital Literacy Global Framework (DLGF), based on the Digital Competence Framework (DigiComp) by the European Commission, and it is currently mapping the tools that align to this DLGF.

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

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 the majority of the population has completed their education. Younger age groups are often still enrolled in the education system. The indicator can be calculated for youth (15-24 years) if desired.

The indicator measures for each level of education the percentage of the population who completed at least that level of education.

Purpose:

Educational attainment is a measure of the human capital of individuals and entire nations.

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.

$$EA_{nt8,AGi} = \frac{EAP_{nt8,AGi}}{P_{AGi}}$$

where:

$EA_{nt8,AGi}$ = percentage of population in age group **i** who completed at least level **n** of education, up to and including ISCED level 8 (doctoral level)

$EAP_{nt8,AGi}$ = population in age group **i** who completed at least level **n** of education, up to and including ISCED level 8 (doctoral level)

P_{AGi} = population in age group **i**, excluding persons with unknown educational attainment

Interpretation:

Higher levels of attainment in a population are associated with greater personal, household or national wealth and economic growth. The greater the level of attainment of a person, the greater is his or her earnings potential. Persons with higher attainment are also assumed to be better equipped to make well-informed decisions, for example about their personal health or the environment. High levels of attainment in a population are thus assumed to be correlated with sustainable development.

Type of data source:

Population censuses, household surveys.

Disaggregation:

By age, sex, location and socio-economic status, level of education, and others as available in survey or census data. Disability status is not currently available in most household surveys and censuses.

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

Data required:

Populations in the relevant age groups (25 years and older, 15-24 years, other age groups if required) by the highest level of education completed.

Data sources:

Population censuses and household surveys which collect data on the highest levels of education completed by members of a household, through self- or household declaration. In the former case, each household member above a certain age reports his or her own level of educational attainment. In the latter case, one person, usually the head of the household or another reference person, indicates the highest qualification held or level of education completed of each member of the household.

Labour force surveys are the most common source of data on educational attainment. International sample surveys, such as Demographic and Health Surveys (DHS, http://dhsprogram.com) or Multiple Indicator Cluster Surveys (MICS, http://mics.unicef.org), are another source. These surveys are designed to meet commonly agreed upon international data needs while also providing data for national policy purposes. These surveys are implemented on a regular basis in selected countries, on average every 3 to 5 years. They aim to assure cross-national comparability, although they often integrate national modules to suit specific country data needs. Modules from international surveys are sometimes added to other on-going national sample surveys.

Population censuses are another important source of attainment data but they are carried out less frequently than labour force surveys or other sample surveys, often only once per decade.

Data on attainment collected with surveys or censuses are usually mapped to ISCED levels post-enumeration.

Limitations and comments:

National data on educational attainment are often collected and reported in reference to national systems of education. The mapping from a national classification to ISCED is not always straightforward and can cause discrepancies between attainment levels in national and international data.

Aggregate data often combine data for different levels of attainment, for example by combining the percentage of the population with incomplete or complete primary education in a single figure instead of reporting the data for each level of attainment separately. If data for levels n and n+1 are combined, it is only possible to calculate the percentage of the population who completed at least level n, but not the percentage of the population who completed level n+1.

Data on the highest qualification obtained are not very common, partly because the multitude of qualifications that may be obtained in a country and abroad makes data collection difficult.