

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

Target 4.c: By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States

[Indicator 4.c.1: Proportion of teachers with the minimum required qualifications, by education level](#)

Institutional information

Organization(s):

UNESCO Institute for Statistics (UNESCO-UIS)

Concepts and definitions

Definition:

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

Rationale:

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 well-qualified in the subject(s) they are expected to teach. This indicator measures the share of the teaching work force which is pedagogically well-trained.

A high value indicates that students are being taught by teachers who are pedagogically well-trained to teach.

Concepts:

A teacher is trained if they 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.

Comments and limitations:

It is important to note that national minimum training requirements can vary widely from one country to the next. This variability between countries lessens the usefulness of global tracking because the indicator would only show the percent reaching national standards, not whether teachers in different countries have similar levels of training. Further work would be required if a common standard for teacher training is to be applied across countries.

Methodology

Computation Method:

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

$$PTT_n = \frac{TT_n}{T_n}$$

T_n

where:

PTT_n = percentage of trained teachers at level n of education

TT_n = trained teachers at level n of education

T_n = total teachers at level n of education

n = 02 (pre-primary), 1 (primary), 2 (lower secondary), 3 (upper secondary) and 23 (secondary)

Disaggregation:

By sex, level of education and type of institution (public/private).

Treatment of missing values:

- [At country level](#)

The UIS estimates certain key items of data that may be missing or incomplete in order to have publishable estimates at the country level. Where this is not possible the UIS imputes missing values for use only for calculating regional and global aggregates.

For the purposes of calculating the percentage of trained teachers, the UIS may make one or more of the following:

- An adjustment to account for over- or under-reporting, for example:
 - o To include teachers in a type of education – such as private education or special education – not reported by the country; and/or
 - o To include teachers in a part of the country not reported by the country.
- An estimate of the number of trained teachers in each level of education if the country only reported data for combined levels (eg total secondary rather than lower and upper secondary separately).

In all cases estimates are based on evidence from the country itself (eg information from the data provider on the size of the missing component, via correspondence, publications or data on the Ministry's or National Statistical Office's Webpage, or via surveys conducted by other organizations) or on data from the country for a previous year. These figures may be published: (i) as observed data if the missing items are found in a national source; (ii) as national estimates

if the country is persuaded to produce estimates and submit them in place of missing data; or (iii) as UIS estimates, if the estimates are made by the UIS.

- **At regional and global levels**

Regional and global aggregates are derived from both publishable and imputed national data. Publishable data are the data submitted to the UIS by Member States or the result of an explicit estimation made by the Institute based on pre-determined standards. In both cases, these data are sent to Member States for review before they are considered publishable by the UIS.

When data are not available for all countries, the UIS imputes national data for the sole purpose of calculating regional averages. These imputed data are not published nor otherwise disseminated.

Where data are available for a country for both an earlier and a more recent year than the missing year, a simple linear interpolation is made. Where data are only available for an earlier year, the most recent value is used as an estimate. Similarly, where data are only available for a more recent year, the last value is used as an estimate.

Where the relevant data are not available at all for a country, estimates may be based on another variable which is clearly linked to the item being estimated. For example, trained teachers may be based on total teachers.

Where no data are available for the country in any year that can inform the estimate, the unweighted average for the region in which the country lies is used.

Regional aggregates:

Regional and global aggregates are calculated as weighted averages using the denominator of the indicator as the weight. As described previously, where publishable data are not available for a given country or year, values are imputed for the purpose of calculating the regional and global aggregates.

Sources of discrepancies:

Nationally-published figures may differ from the international ones because of differences between national education systems and the International Standard Classification of Education (ISCED); or differences in coverage (i.e. the extent to which different types of education – e.g. private or special education – are included in one rather than the other).

Data Sources

Description:

Administrative data from schools and other organized learning centres.

Collection process:

The UNESCO Institute for Statistics produces time series based on teachers' data reported by Ministries of Education or National Statistical Offices. The data are gathered through the annual Survey of Formal Education. Countries are asked to report data according to the levels of education defined in the

International Standard Classification of Education (ISCED) to ensure international comparability of resulting indicators.

The data received are validated using electronic error detection systems that check for arithmetic errors and inconsistencies and trend analysis for implausible results. Queries are taken up with the country representatives reporting the data so that corrections can be made (of errors) or explanations given (of implausible but correct results). During this process countries are also encouraged to provide estimates for missing or incomplete data items.

In addition, countries also have an opportunity to see and comment on the main indicators the UIS produces in an annual “country review” of indicators.

Data Availability

Description:

111 countries for pre-primary education, 129 countries with data for primary education, 92 countries for lower secondary education and 78 countries for upper secondary education with at least one data point in the period 2010-2019.

Time series:

1998-2019 in UIS database; 2000-2019 in the SDG global database.

Calendar

Data collection:

Annual UIS survey (latest launched in October 2019) and UOE survey (latest launched in June 2019).

Data release:

Biannual UIS data release (February and September).

Data providers

Ministries of Education and/or National Statistical Offices.

Data compilers

UNESCO Institute for Statistics

References

URL:

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

References:

The Survey of Formal Education Instruction Manual

http://www.uis.unesco.org/UISQuestionnaires/Documents/UIS_ED_M_2016.pdf

UIS Questionnaire on Students and Teachers (ISCED 0-4)

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

Related indicators as of February 2020

1.2, 1.4, 1.a, 2.1, 2.2, 2.3, 3.7, 3.c, 3.d, 5.1, 5.5, 5.b, 8.6, 8.7, 10.2, 12.8, 13.3, 13.b