METHODOLOGY SHEET FOR GLOBAL PARTNERSHIP FOR EDUCATION (GPE) INDICATORS

Indicator title	**Indicator (12)** Proportion of DCPs with pupil/trained teacher ratio below threshold (<40) (at the primary level)
Result measured (from GPE Results Framework):	**Strategic Goal (3)** Effective and efficient education systems delivering equitable, quality educational services for all

JUSTIFICATION FOR INDICATOR

Background/context for indicator:

The last target of Sustainable Development Goal 4 is: "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." This target was devised based on the recognition that (suitably qualified) teachers play a crucial role in the delivery of quality education, and ultimately meet target 1 of SDG 4, i.e.: "By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes."

The importance of teachers, and teaching, in the delivery of quality education is widely recognized. For example, according to a 2003 meta-analysis by John Hattie[1], teachers "account for about 30% of the variance" in learner test scores, concluding that: "It is what teachers know, do, and care about which is very powerful in this learning equation." For its part, in its 2012 General Education Quality Assessment Framework, UNESCO recognizes quality teachers and teaching as 'core resources' for delivering general quality education[2]. Two parameters are considered to play a key role in making teachers support quality education: *pupil to teacher ratios* (PTRs) and *teacher qualification*.

In respect of PTRs, although there has been an overall decrease in the average number of primary students for each teacher from 2008 to 2012 among GPE's developing country partners (DCPs), from 40[3] in 2008 to 37.3 in 2012, there are also wide disparities across DCPs. For example, in 2012, the national-level PTRs in DCPs ranged from 8 to 80, with Central African Republic and Malawi registering PTRs between 75 and 80. In 26 DCPs (12 of them FCACs) the PTR was higher than 40, and in 8 DCPs it was higher than 50 (half of them FCACs). In addition, national averages generally mask regional inequalities; PTRs often exceed 80 within some areas of these DCPs[4].

[1] J Hattie, *Teachers Make a Difference: What is the research evidence*? Paper presented at: Australian Council for Educational Research Annual Conference on: Building Teacher Quality (2003), 2.
[2] UNESCO, *General Education Quality Analysis / Diagnosis Framework (GEQAF)* (Paris: UNESCO, 2012), retrieved 11 May 2016 from: http://www.ibe.unesco.org/sites/default/files/resources/geqaf-2012_eng.pdf P.7
[3] While officially PTRs are expressed as a ratio (for example, 1:40), throughout this report they will be expressed as the average number of pupils per teacher, in this case, for example, '40'.
[4] Global Partnership for Education, *Results for Learning Report 2014/15: Basic education at risk* (Washington DC: GPE, 2015), retrieved 18 May 2016 from: http://www.globalpartnership.org/2014-2015-results-for-learning-report

	In respect of teacher qualification, out of the existing supply of teachers in DCPs, there was an increase in the percentage of trained teachers[5] at primary level between 2008 and 2012, from 77.5 percent to 81.3 percent. Across DCPs, the average percentage for trained teachers in 2012 was 78 percent with countries like Uzbekistan, Mauritania, Cambodia, Vietnam, Côte d'Ivoire, Mongolia, Lao, Niger, Kenya, Tanzania, Djibouti, and Rwanda registering above 95 percent of trained teachers, and 25 other countries under 95, but above 50 percent. Still, the proportion of trained teachers in primary education varied widely among DCPs, ranging between 36 and 100 percent in 2012 (id.: 42). Countries like Benin, Guinea-Bissau, Honduras, São Tomé and Principe, Senegal and South Sudan have less than 50 percent of trained teachers according to UIS data.
Rationale for indicator selection:	This indicator is included so as to capture the availability of a core resource to deliver quality education in DCPs: trained teachers. It measures qualified human resources (trained teachers) in relation to the pupil population, at the primary level, which has, in the early days of the UNESCO Education for All movement, been taken as a proxy measure of quality of education. The 40 pupil threshold originated in a research that points to the adverse impact on student learning when average class size exceeds the range of 40 – 45 pupils per teacher[6]. In addition, it is supported by the norm defined in UIS' policy paper 15 / fact sheet 30 'Trained Teachers to Ensure Every Child's Right to Primary Education'[7], according to which not more than 40 pupils per teacher are recommended.
DEFINITION	
Indicator definition:	The Pupil to Trained Teacher Ratio (PTTR) is the average number of pupils (students) per trained teacher, as per the national standards, and which may refer to pre-service or in-service training, at the primary level in a given school year. This indicator refers to the percentage of DCPs with a PTTR at primary education (ISCED 1) below a threshold of 40. According to UIS[8], teachers are defined as persons whose professional activity involves the transmitting of knowledge, attitudes and skills that are stipulated in a formal curriculum program to students enrolled in a formal educational Institution. Trained teachers refers to teachers who have received the minimum organized teacher training (pre-service or in-service) required for teaching at the primary level according to the relevant national policy or law.
Unit of measurement:	Percentage
Disaggregation:	By fragile/conflict-affected (FCAC) and non-fragile and conflict-affected countries
Year for data reported (select only one and mark an "x")	__ fiscal year _X_ calendar year

[5] UIS reports the percentage of teachers who are trained according to national standards, but standards vary from country to country, so data are not internationally comparable. In this analysis trained teachers refers to teachers who have received the minimum organized teacher training (pre-service or in-service) required for teaching at the primary level according to the relevant national policy or law. For more information on trained teachers please refer to indicator definition section and also, data limitation.

[6] B Bruns, A Mingat and R Rakotomalala, *Achieving Universal Primary Education by 2015: A Chance for Every Child* (Washington DC: The World Bank, 2003) retrieved 18 May 2016 from: http://siteresources.worldbank.org/EDUCATION/Resources/278200-1089739404514/achieving_efa_full.pdf

[7] UNESCO Institute for Statistics, *Wanted: Trained Teachers to Ensure Every Child's Right to Primary Education*. Policy Paper 15 / Fact Sheet 30 (Montreal/Paris: UNESCO Institute for Statistics/EFA Global Monitoring Report, 2014)

[8] UNESCO Institute for Statistics, *Glossary,* Retrieved 18 May 2016 from: http://uis.unesco.org/en/glossary

Frequency of data collection:		Official request to UIS submitted twice a year (beginning and mid-calendar year), following UIS releases of education data
DATA TREATMENT		
Source of information for collecting data:	Source document, template, etc.:	UIS
	Source agency:	UIS
Formula:		At the country level, the Pupil to Trained Teacher Ratio (PTTR) at the primary level is calculated by dividing the total number of pupils by the total number of trained teachers at the primary level for country ***j*** for a given year: $\mathrm{PTTR}_{\mathrm{pri,j,t}} = \frac{\mathrm{E}_{\mathrm{pri,j,t}}}{\mathrm{TT}_{\mathrm{pri,j,t}}}$ where: $\mathrm{PTTR}_{\mathrm{pri,j,t}}$ *= Pupil / trained-teacher ratio at the primary level, for country* ***j*** $\mathrm{E}_{\mathrm{pri,j,t}}$ *= Total number of pupils or (students) at the primary level, for country* ***j*** in year t $\mathrm{TT}_{\mathrm{pri,j,t}}$*= Total number of trained teachers at the primary level, for country* ***j*** in year t ***Note:*** *Country-level PPTRs were calculated using data on the number of trained teachers and number of pupils provided directly by UIS to the GPE Secretariat. When data were not available, estimations for the total number of pupils and trained teachers were performed by the GPE Secretariat.*
Aggregation formula:		The corporate level indicator is calculated as follows: **Step 1:** For a given year t , assess whether the pupil/trained teacher ratio for country ***j*** is below the threshold (<40) $THPTTR_{pri,j,t} = \begin{cases} 1, & \text{if } \mathrm{PTTR}_{\mathrm{pri,j,t}}\ is\ below\ 40 \\ 0, & otherwise \end{cases}$ where: $THPTTR_{pri,j,t}$ *reflects whether the pupil / trained-teacher ratio in primary education for country* ***j*** in year t $(\mathrm{PTTR}_{\mathrm{pri,j,t}})$ *is below the threshold (<40) – 1 if yes, 0 otherwise-.* **Step 2:** For a given year, calculate the proportion of DCPs with pupil/trained teacher ratio below threshold (<40) at the primary level by dividing the total number of DCPs with PPTRs below 40 by the total number of DCPs: $PROP(THPTTR_{pri,j,t} = 1)_t = \frac{\sum_{j=1}^{n} THPTTR_{pri,j,t}}{N} * 100$ where: $PROP(THPTTR_{pri,j,t} = 1)_t$ *is the proportion of DCPs that, for a given year*

	t, *have a pupil/trained teacher ratio below threshold (<40) at the primary level* *N = total number of DCPs in sample*
Data limitations (if any known / anticipated):	UIS reports the percentage of teachers who are trained according to national standards, but standards vary from country to country, so that data on teacher qualification are not internationally comparable. In addition, the data published by UIS include both pre-service and in-service training. For this reason, it is not possible to distinguish teachers without initial training from others. In interpreting this indicator, one should take into account the existence of part-time teaching, school-shifts, multi-grade classes and other practices that may affect the precision and meaningfulness of pupil to trained teacher ratios. Care should be exercised to not include all staff involved in teaching. Country-level PTTRs for 2013 were calculated using data for the number of trained teachers and number of pupils provided by UIS. When data were not available, estimations by the GPE Secretariat were performed. Six DCPs (out of which four are classified as FCAC) did not have available data, so the PTTR could not be calculated for these countries; thus, the sample size is 55 DCPs rather than 61.
Interpretation	The lower the PTTR, the higher the relative access of pupils to trained teachers. A higher proportion in this indicator value suggests a greater number of DCPs with smaller classes (i.e. less than 40 pupils per trained teacher) which generally enable the teacher to pay more attention to individual students, and which in turn may in the long run result in a better performance of the pupils.

REFERENCES

- Bruns, B., Mingat, A., and Rakotomalala, R.. *Achieving Universal Primary Education by 2015: A Chance for Every Child*. Washington DC: The World Bank, 2003. Retrieved 18 May 2016 from: http://siteresources.worldbank.org/EDUCATION/Resources/278200-1089739404514/achieving_efa_full.pdf
- Global Partnership for Education. *Results for Learning Report 2014/15: Basic education at risk*. Washington DC: GPE, 2015. Retrieved 18 May 2016 from: http://www.globalpartnership.org/2014-2015-results-for-learning-report
- Hattie, J.. *Teachers Make a Difference: What is the research evidence*? Paper presented at: Australian Council for Educational Research Annual Conference on: Building Teacher Quality, 2003.
- UNESCO. *General Education Quality Analysis / Diagnosis Framework (GEQAF)*. Paris: UNESCO, 2012. Retrieved 11 May 2016 from: http://www.ibe.unesco.org/sites/default/files/resources/geqaf-2012_eng.pdf
- UNESCO Institute for Statistics. *Wanted: Trained Teachers to Ensure Every Child's Right to Primary Education*. Policy Paper 15 / Fact Sheet 30. Montreal/Paris: UNESCO Institute for Statistics/EFA Global Monitoring Report, 2014.
- UNESCO Institute for Statistics. *Glossary*. Retrieved 18 May 2016 from: http://uis.unesco.org/en/glossary

ANNEXES

Annex 1- Data Collection tool

Data collection tool utilized for collecting the data, if any:	GPE Data request file sent to UIS, including:

	1. Updated list of GPE countries; 2. Fragile and Conflict-Affected Countries categorization; 3. List of indicators. The Fragile and Conflict-Affected Countries (FCAC) categorization is updated by the GPE Secretariat on the basis of: • The most recent list of conflict-affected countries from the GEMR (formerly EFA GMR) • The list of countries in fragile situations from the World Bank.

Annex 2- Standard Operating Procedure

Process Name: Data Collection, Quality Assurance, & Storage for Indicators # 4-8, 12 & 14	**Owner:** R&P Team	**Updated:**
Function: Measuring GPE Impact	**Version #:** 1	**Review:**

Material changes from prior version of SOP

None; this is the first version.

Summary

This SOP describes the process for data collection, quality assurance, and storage for indicators:

4. Proportion of children who complete: (a) primary education; (b) lower secondary education

5. Proportion of GPE DCPs within set thresholds for gender parity index of completion rates for: (a) primary education; (b) lower secondary education

6. Pre-primary gross enrolment ratio

7. Out-of-school rate for: (a) children of primary school age; (b) children of lower secondary school age

8. Gender parity index of out-of-school rate for: (a) primary education; (b) lower secondary education

12. Proportion of DCPs with pupil/trained teacher ratio below threshold (<40) at the primary level

14. Proportion of DCPs reporting at least 10 of 12 key international education indicators to UIS (including key outcomes, service delivery and financing indicators as identified by GPE)

of the GPE results framework.

Results / Outputs

This process should result in the results framework being updated with quality assured data on indicators# 4-8, 12 & 14.

Interim outputs of the Secretariat:

Completed data collection template

Final Output:

Updated results framework database

Scope

- Begins: The process begins with the M & E Data Manager sending GPE data request file to UIS.
- Ends: The process ends with updated data being integrated into the results framework database by the Monitoring and Evaluation Data Manager.

- Includes: All procedural aspects
- Excludes: Methodological aspects of calculating the indicator value. These can be found in the methodology sheet.
- Note: Official requests to UIS are submitted twice a year (beginning and mid-calendar year), following releases of education data.

Standards (Policies, Approvals, Deadlines, etc.):

- Policies: GPE 2020, Monitoring Sheet for GPE Results Framework Indicators #4-8, 12 & 14
- Deadlines: M & E Data Manager updates results framework database with the Indicators # 4-8, 12, & 14 data by 30th April
- Approval: The completed data template is prepared by the M & E Data Manager and includes final approval from the Head of M & E

Issues /Risks:

- UIS may not send the data to GPE in good time.

Overview:



By 15th Jan | By 20th February | By 30th March

Steps in the Process	Roles / Responsibilities	Outputs / Deliverables	Tools / Templates
1. Data Request Typically by 15th Jan			
• Request the UNESCO Institute for Statistics for data as per the updated list of FCACs prior to the December release of UIS data	• M & E Data Manager	Data request file	Data request file
• Review data received from UIS	• M & E Data Manager		
• Report any discrepancies to the UIS and request revised/updated data	• M & E Data Manager		
2. Aggregate Data Typically by 20th February			
• Enter data into the template provided by the M&E Data Manager	• M & E Data Manager		Data Collection Template
• Compute indicator values using the completed data collection template, based on the latest available classification of countries affected by Fragile and Conflict and forward to M & E data Manager.	• M & E Data Manager	Completed Data Collection Template	List of countries affected by Fragile and Conflict from the GPE Intranet

3. Update Results Framework Database **Typically by 30th March**			
• Forward data collection template to the Head of M & E for review and approval.	• M & E Data Manager		
• Review & approve completed data collection template	• Head of M & E	Approved data collection template	
• Update results framework database using completed template	• M & E Data Manager	Updated results framework database	N/A
• Notify the secretariat on the availability of data in the results framework database through the intranet	• M & E Data Manager	Notification on GPE intranet	