UIS Survey on Statistics of Information and Communication Technology (ICT) in Education:

Building capacity to establish an international statistical framework
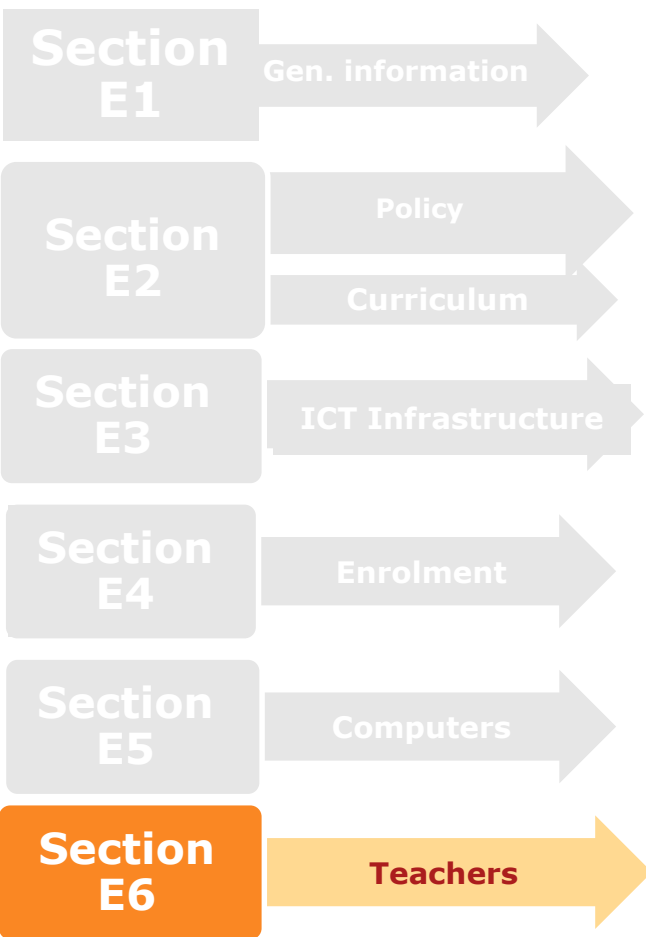
Moscow, Russian Federation, 25-27 November 2015

OUTLINE

- Why measure - ICT in education statistics

- Regional questionnaire on ICT4ED
  - Policy and Curriculum
    - Indicator prioritization
  - Educational Expenditures
    - Indicator prioritization
  - Educational Institutions & ICT infrastructure
    - Indicator prioritization
  - Enrolment
    - Indicator prioritization
  - **Computers**
    - Indicator prioritization
  - **Teachers**
    - Indicator prioritization

- **Sources of Information**

- **Data collection and Dissemination**

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INSTITUTE FOR STATISTICS

THE QUESTIONNAIRE - Data sources

Questionnaires A

Section E1	Gen. information
Section E2	Policy
	Curriculum
Section E3	ICT Infrastructure
Section E4	Enrolment
Section E5	Computers
Section E6	Teachers

2014 SURVEY OF FORMAL EDUCATION

Students and teachers (ISCED 0-4)

UNESCO INSTITUTE for STATISTICS
United Nations Educational, Scientific and Cultural Organization

Data for the academic year ending in 2013

Deadline for returning the completed questionnaire: 30 June 2014

This questionnaire is designed to collect internationally comparable data on formal education at the early childhood, primary, secondary and post-secondary non-tertiary levels, necessary for the evaluation and monitoring of education systems worldwide. The data form a central part of the database of education statistics maintained by the UNESCO Institute for Statistics (UIS). They are disseminated widely to the user community and help to inform policymakers at both national and international levels. The data are required for the calculation of many education indicators used in the monitoring of progress towards regional and global goals, including the Education for All and Millennium Development Goals.

Instructions for completing the questionnaire

Please refer to the Instruction Manual: Survey of Formal Education for detailed concepts and definitions used in this survey.

All UIS questionnaires and manuals are available on the Questionnaire Website: http://www.uis.unesco.org/UISQuestionnaires/Pages/country.aspx

Completed questionnaires should be sent by email attachment to: uis.survey@unesco.org

Data from previous surveys are available at: http://www.uis.unesco.org/datacentre

Coverage

This questionnaire covers the entire formal education system in both public and private institutions within the borders of your country. The data provided should include both formal initial education programmes and formal adult education programmes. If data are not available for some part of the education system, please make estimates to ensure full data coverage.

Before completing this questionnaire, education programmes should first be classified by level according to the 2011 revision of the International Standard Classification of Education (ISCED 2011). The UIS will use the ISCED 2011 mapping of your country to validate your data submission. If your country does not have a recent ISCED mapping or if there have been subsequent changes to your national education system, please download and complete or update the questionnaire on National Education Systems (UIS/ED/ISC11) which is available on our Questionnaire Website.

Academic year/reference period for the data collected in this questionnaire

This questionnaire collects data on the academic year ending in 2013 or a more recent year. If data are not available for 2013, please report the latest year for which data are available.

Using the Excel questionnaire

ICT in education (E6) Teachers (headcounts)

E6: TEACHING STAFF

All programmes (general and vocational)

Teaching staff by sex and level of education - public and private institutions (excluding Adult Education programmes)

		Primary (ISCED 1)		Lower secondary (ISCED 2)		Upper secondary (ISCED 3)		Not specified		TOTAL (ISCED 1-3)	
Total number of teachers	Both sexes										
	Female										
Of which:											
Teaching basic computer skills or computing (courses)	Both sexes										
	Female										
Trained to teach basic computer skills or computing (courses)	Both sexes										
	Female										
Using ICT to support teaching other subjects	Both sexes										
	Female										
Trained to use ICT to support teaching other subjects	Both sexes										
	Female										
Attended an in-service training on ICT in the past year	Both sexes										
	Females										

Teaching staff by sex and level of education - public institutions only (excluding Adult Education programmes)

		Primary (ISCED 1)		Lower secondary (ISCED 2)		Upper secondary (ISCED 3)		Not specified		TOTAL (ISCED 1-3)	
Total number of teachers	Both sexes										
	Female										
Of which:											
Teaching basic computer skills or computing (courses)	Both sexes										
	Female										
Trained to teach basic computer skills or computing (courses)	Both sexes										
	Female										
Using ICT to support teaching other subjects	Both sexes										
	Female										
Trained to use ICT to support teaching other subjects	Both sexes										
	Female										
Attended an in-service training on ICT in the past year	Both sexes										
	Females										

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

THE QUESTIONNAIRE - Coverage

❖ **Includes the following:**

  ❖ Primary programmes (ISCED 1)

  ❖ Secondary programmes (ISCED 2 and 3)

  - **General and technical/ vocational education and training (TVET)**

  - **Public & private (Total)**

❖ **Excludes the following:**

  ❖ Adult education programmes

2015 SURVEY OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN EDUCATION (ISCED 1-3)

Data for the academic year ending in 2015 or most recent

Deadline for returning the completed questionnaire: 18 December 2015

SECTION E6 : TEACHING STAFF (ISCED LEVELS 1-3)

As in UIS questionnaire A, ICT in education survey collects data on **Total teacher headcounts**

❑ **Teacher headcounts includes all full-time and part-time teachers by sex, sector and level (ISCED levels 1-3)**

  ➢ All programmes (General education & Vocational)

  ➢ Total = Public + Private; and public only

  ➢ Both sexes (MF) = Male (M) + Female (F)

Data should correspond to data provided in UIS Questionnaire A: Statistics of Education. If different, please provide details

Teaching staff by gender and level of education - public and private institutions

Total number of teachers		Primary (ISCED 1)		Lower secondary (ISCED 2)		Upper secondary (ISCED 3)		Not specified		TOTAL (ISCED 1-3)		
	Both sexes	500		500		300		100		1400		
	Female	250		300		150		25		725		

Of which:

		Primary		Lower secondary		Upper secondary		Not specified		TOTAL		
Teaching basic computer skills or computing (courses)	Both sexes	200		300		200		20		720		
	Female	100		200		75		5		380		
Trained to teach basic computer skills or computing (courses)	Both sexes	50		75		100		25		250		
	Female	25		35		75		20		155		
Using ICT to support teaching other subjects	Both sexes	400		450		300		100		1250		
	Female	200		200		150		10		560		
Trained to use ICT to support teaching other subjects	Both sexes	20		30		50		60		160		
	Female	10		15		25		15		65		
Attended an in-service training on ICT in the past year	Both sexes	25		100		75		10		210		
	Females	12		25		45		5		87		

⚠️ *Figures in "Total" column are the sums of ISCED levels 1-3; they sum automatically*

Teaching staff by gender and level of education - public and private institutions

		Primary (ISCED 1)		Lower secondary (ISCED 2)		Upper secondary (ISCED 3)		Not specified		TOTAL (ISCED 1-3)	
Total number of teachers	Both sexes	500		500		300		100		1400	
	Female	250		300		150		25		725	
Of which:											
Teaching basic computer skills or computing (courses)	Both sexes	200		300		200		20		720	
	Female	100		200		75		5		380	
Trained to teach basic computer skills or computing (courses)	Both sexes	50		75		100		25		250	
	Female	25		35		75		20		155	
Using ICT to support teaching other subjects	Both sexes	400		450		300		100		1250	
	Female	200		200		150		10		560	
Trained to use ICT to support teaching other subjects	Both sexes	20		30		50		60		160	
	Female	10		15		25		15		65	
Attended an in-service training on ICT in the past year	Both sexes	25		100		75		10		210	
	Females	12		25		45		5		87	

⚠️ *Total number of teachers is **NOT** the sum of other sub-categories*

TEACHERS (OR TEACHING STAFF): Persons employed full-time or part-time in an official capacity to guide and direct the learning experience of pupils and students, irrespective of their qualifications or the delivery mechanism, i.e. face-to-face and/or at a distance. This definition excludes educational personnel who have no active teaching duties (e.g. headmasters, headmistresses or principals who do not teach) or who work occasionally or in a voluntary capacity in educational institutions.

FULL TIME TEACHERS

Persons engaged in teaching for a number of hours of work statutorily regarded as full-time at the particular level of education in a given country.

PART TIME TEACHERS

Teachers whose statutory working hours are less than those required of full-time teachers in a given country.

TEACHERS TRAINED TO TEACH BASIC COMPUTER SKILLS (OR COMPUTING) refers to teachers considered qualified according to national standards or norms to teach basic computer skills (or computing) courses. At higher ISCED levels, in particular, teachers trained to teach computing should have a nationally required academic credential in an ICT-related field of study, such as computer science.

TEACHERS TRAINED TO TEACH SUBJECT(S) USING ICT FACILITIES are teachers that have received at least a nationally defined minimum of formal training to teach one or various subjects at the relevant level(s) using ICT to support their teaching.

IN-SERVICE TRAINING is training that is concurrent to official teaching responsibilities to improve teachers' qualifications and skills. In-service training can be compulsory relating to official professional development activities to maintain or upgrade professional qualifications or it can also be optional with the sole purpose to improve skills.

SECTION E6 : TEACHING STAFF (ISCED LEVELS 1-3)

		Primary (ISCED 1)			Lower secondary (ISCED 2)			Upper secondary (ISCED 3)			Not specified			TOTAL (ISCED 1-3)		
Total number of teachers	**Both sexes**	500	W	ISC0	500	W	ISC3		X	ISC2	100			1100	W	
	Female	250	W	ISC0	300	W	ISC3		X	ISC2	25			575	W	
Of which:																
Teaching basic computer skills or computing (courses)	**Both sexes**	200	W	ISC0	300	W	ISC3		X	ISC2	20			520	W	
	Female		M	BS		M	BS		M	BS		M	BS		M	BS
Trained to teach basic computer skills or computing (courses)	**Both sexes**	50	W	ISC0	75	W	ISC3		X	ISC2	25			150	W	
	Female	25	W	ISC0	35	W	ISC3		X	ISC2	20			80	W	
Using ICT to support teaching other subjects	**Both sexes**	400	W	ISC0	450	W	ISC3		X	ISC2	100			950	W	
	Female	200	W	ISC0	200	W	ISC3		X	ISC2	10			410	W	
Trained to use ICT to support teaching other subjects	**Both sexes**	20	W	ISC0	30	W	ISC3		X	ISC2	60			110	W	
	Female	10	W	ISC0	15	W	ISC3		X	ISC2	15			40	W	
Attended an in-service training on ICT in the past year	**Both sexes**		M			M			M			M			M	
	Females		M			M			M			M			M	

- Primary data includes pre-primary data
- Lower secondary data includes upper secondary data
- Data not available for in-service training in the past year
- Gender disaggregated data not available for teachers teaching basic computer skills

WHAT IS MEASURED ?

❖ **Indicator prioritization :**

Conceptual domains	Indicator label	Indicator
Teaching staff & Development	**ED8**	Proportion of **ICT-qualified teachers in primary and secondary** schools
	ED35	Proportion of primary and secondary-school **teachers trained via ICT-enabled distance education programmes**
	ED36	Proportion of **primary and secondary-school teachers who teach basic computer skills (or computing)**
	ED37	Proportion of primary and secondary-school **teachers who currently teach subject(s) using ICT facilities**
	ED38	Proportion of primary and secondary-school **teachers trained to teach subject(s) using ICT facilities**
	ED39	Ratio of **pupils-to-teachers of basic computer skills (or computing)**
	ED40	Ratio of **pupils-to-teachers using ICT to teach**

■ **Core indicator**
■ **WSIS target**
■ **WSIS target and Core Indicator**
■ **Additional Indicators**

Indicator prioritization

ED8 – Proportion of **ICT-qualified teachers** in primary and secondary schools (for ISCED levels 1-3)

ED8	Proportion of ICT-qualified teachers in primary and secondary schools (for ISCED levels 1-3)
Definition: Number of teachers trained to teach basic computer skills (or computing) in primary and secondary schools, expressed as a percentage of the total number of teachers at these levels of education.	**Purpose:** To measure the extent to which primary and secondary school teachers have the required ICT training to teach basic computer skills (or computing) classes.
Data requirement: **(TTB)** Number of teachers in primary and secondary schools who have been trained to teach basic computer skills (or computing) at ISCED levels 1-3. *(refer to questionnaire item D.1.3)* **(T)** Number of teachers in primary and secondary schools regardless of subject(s) taught at ISCED levels 1-3. *(refer to questionnaire item D.1)*	**Method of collection:** Administrative data collection through annual school census (or extract data from school records). **Data source(s):** Statistical unit of the Ministry of Education or, alternatively, the national statistical office.

Indicator prioritization

ED8 – Proportion of **ICT-qualified teachers** in primary and secondary schools (for ISCED levels 1-3)

Formula:

$$\frac{\sum_{h=1}^{3} TTB_h^t}{\sum_{h=1}^{3} T_h^t} * 100$$

Where:

TTB_h^t = Number of teachers trained to teach basic computer skills (or computing) at level of education **h** in school-year **t**

T_h^t = Number of teachers at level of education **h** in school-year **t**

Indicator prioritization

ED8 – Proportion of **ICT-qualified teachers** in primary and secondary schools (for ISCED levels 1-3)

Analysis and interpretation:

A high percentage of ICT-qualified teachers among the overall teaching staff in primary and secondary schools of a country suggests that it aims to provide learners with basic ICT skills and to meet emerging and evolving skills requirements in the information economy and society.

This does not automatically mean that basic computer skills (or computing) classes are effectively offered to learners by all teaching staff having received formal training to teach basic computer skills (e.g. if certain pre-requisites - such as computer labs, basic computer skills course syllabus, etc. - are not available in schools).

Besides its use for international comparison, this indicator can also be calculated and analysed at national and sub-national levels (by ISCED levels and grades, geographical regions, urban/rural areas, and by public/private schools) in order to inform policies and help implement measures for training and deploying adequate numbers of ICT-trained teachers in schools.
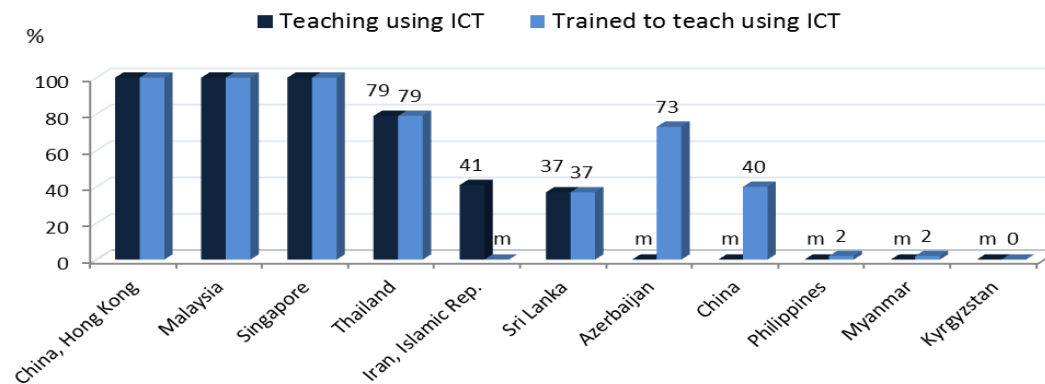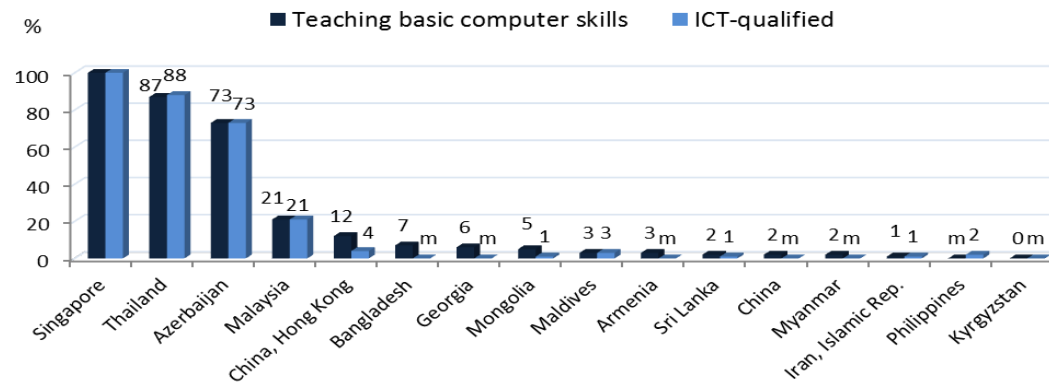
Methodological and definition issues or operational limitations:

- All teachers trained specifically in pre-service or in-service schemes in ICT according to **nationally defined qualification standards** are counted as qualified.

- This indicator only presents the skilled teaching force available to deliver basic ICT skills (or computing) classes. This does not necessarily mean that each of the teachers recorded as qualified does actually teach a basic ICT skills (or computing) course. Furthermore, in schools where there is no ICT equipment or inadequate ICT equipment, course delivery may not be effective even though the schools have teachers qualified to teach ICT.

❖ **Indicator prioritization :**

Proportion of combined primary and secondary teachers teaching basic computer skills and teaching with ICT versus teacher preparedness, 2012 - Asia