

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

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OUTLINE

- ❖ Why measure - ICT in education statistics
- ❖ Regional survey on ICT in education
 - ❖ 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**

THE QUESTIONNAIRE - Data sources

Section E1

Gen. information

Section E2

Policy

Curriculum

Section E3

ICT Infrastructure

Section E4

Enrolment

Section E5

Computers

Section E6

Teachers

Questionnaires A

2014 SURVEY OF FORMAL EDUCATION
Students and teachers (ISCED 0-4)

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					
<i>Of which:</i>						
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					
<i>Of which:</i>						
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>

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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

This questionnaire is designed to collect internationally comparable data on information and communication technology (ICT) in education at the primary and secondary levels necessary for the evaluation and monitoring of education systems worldwide. The data form a central part of the database of communication and information 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 ICT in education indicators used in the monitoring of progress towards regional and global goals, including the World Summit on the Information Society, Education for All, and the Millennium Development Goals.

Instructions for completing the questionnaire

Please refer to the Instruction Manual: Survey of Information and communication technology (ICT) in 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 primary and secondary education system in both public and private institutions within the borders of your country. The data provided should include 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 2015 or a more recent year. If data are not available for 2015, please report the latest year for which data are available.

Using the Excel questionnaire


This questionnaire has been designed for optimal functionality in Microsoft Excel 2010 but can also be used with other versions of Excel. The questionnaire has been locked to preserve the layout and the integrity of the automatically calculated totals (shaded in blue) and validations. To the extent possible, data should be entered in the white cells only. If data are not available for a given category please use the missing codes described below.

Validation checks

The questionnaire contains validation checks using conditional formatting to highlight errors or invalid data entries. If further input is required, for example when a comment is needed to explain a missing code or if an error is detected in the data, the cell will turn yellow and/or a pop-up message will appear.

Structure of data items

In order to ensure the provision of complete data and metadata, each data item is composed of three distinct cells which accept numeric data (including zeros to indicate nil or negligible data), missing data codes and comments, respectively. Countries are requested to make every effort to provide complete data in the numeric cell, if data are not available please use the appropriate codes described below. Please note that the Excel commenting feature has been disabled. Comments should be entered in the appropriate comment cell.



Numeric data

These cells only accept numeric values, including zeros (to indicate nil or negligible data). Please note that an error message will appear if a non-numeric value is entered.

Codes

These cells only accept the letters Z, X, W or M and are located to the right of the numeric data cells. The correct use of codes is an essential condition to ensure cross-national comparability and completeness of data. The codes are used in statistical analyses and reports to indicate the coverage of the data and to explain why data are not available. Please explain any data coverage issues using the following codes:

Z - category not applicable (previously denoted as 'a')

If a data item or table refers to a category which does not apply or exist in your national education system, please leave the numeric data cell blank and enter 'Z' in the related codes cell. The use of this code indicates that data for these categories do not even hypothetically exist.

X - data included elsewhere

If a data item or category exists in your national education system but cannot be disaggregated from another category, please leave the numeric data cell blank and enter 'X' in related codes cell. Please also indicate in the comment cell, in which cell data are included, by using the Excel column and row identifiers or free text. Where appropriate, please also use the code 'W' described below.

W - includes data from another category (new code)

If data include other categories (e.g. primary data also include pre-primary data) and are therefore over-covered, please enter the value in the numeric data cell and 'W' in the related codes cell. Please also indicate in the comment cell which data are included by using the Excel column and row identifiers or free text. Where appropriate, please also use the 'X' code described above.

M - data not available or missing

If a category exists in your national education system but the related data are not available, cannot be estimated and are not included in any other cells of the questionnaire, please leave the numeric data cell blank and enter 'M' in the related codes cell. In such cases, please note that the total is considered to be missing or incomplete with respect to these categories. If possible, please provide a comment to indicate why data are not available.

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

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

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
<i>Of which:</i>						
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

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

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
<i>Of which:</i>						
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

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



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.

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



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.

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



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	ISCO	500	W	ISC3		X	ISC2	100			1100	W	
	Female	250	W	ISCO	300	W	ISC3		X	ISC2	25			575	W	
<i>Of which:</i>																
Teaching basic computer skills or computing (courses)	Both sexes	200	W	ISCO	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	ISCO	75	W	ISC3		X	ISC2	25			150	W	
	Female	25	W	ISCO	35	W	ISC3		X	ISC2	20			80	W	
Using ICT to support teaching other subjects	Both sexes	400	W	ISCO	450	W	ISC3		X	ISC2	100			950	W	
	Female	200	W	ISCO	200	W	ISC3		X	ISC2	10			410	W	
Trained to use ICT to support teaching other subjects	Both sexes	20	W	ISCO	30	W	ISC3		X	ISC2	60			110	W	
	Female	10	W	ISCO	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. <i>(refer to questionnaire item D.1.3)</i> (T) Number of teachers in primary and secondary schools regardless of subject(s) taught at ISCED levels 1-3. <i>(refer to questionnaire item D.1)</i>	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.

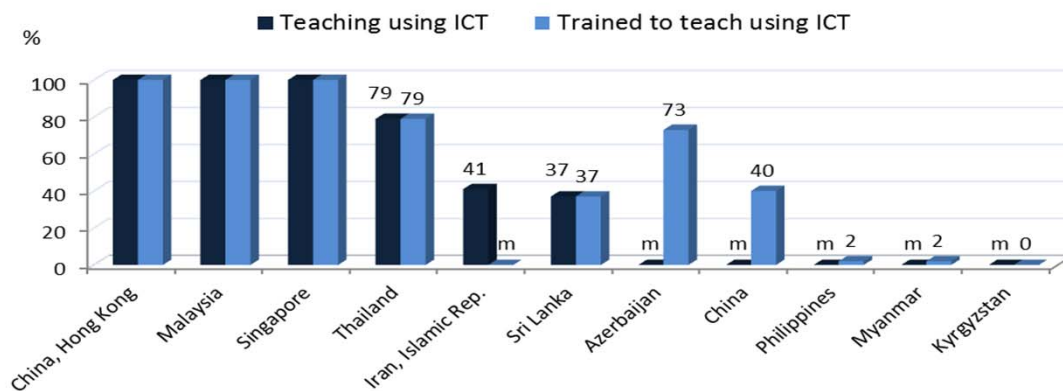
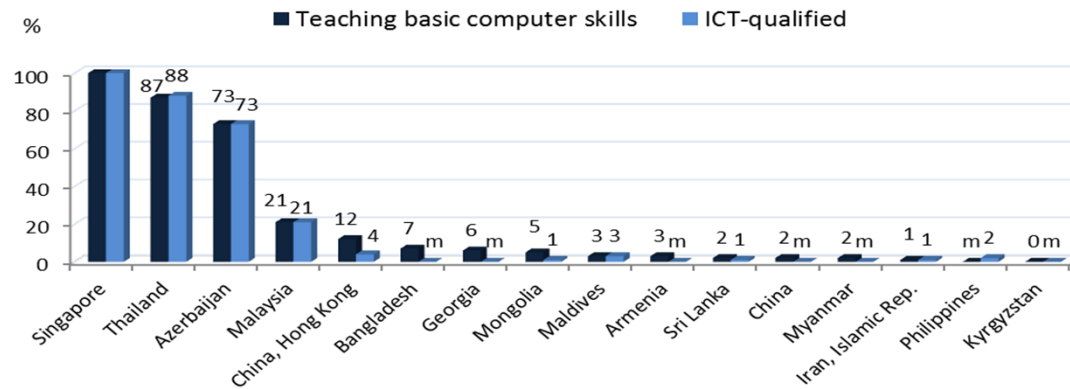
Methodological and definition issues or operational limitations:

- 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.

WHAT IS MEASURED ?

❖ Indicator prioritization :

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



QUESTIONS ?



Thank you

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