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TITLE:	Measuring WSIS Targets 2 and 7 on ICTs in Education: Evidence from Latin America & the Caribbean and the Arab States on the digital divide

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Measuring WSIS Targets 2 and 7 on ICTs in Education: Evidence from Latin America & the Caribbean and the Arab States on the digital divide

The 10th World Telecommunications/ ICT Indicators Meeting (WTIM)

Bangkok, Thailand, 23-27 September 2012

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UNESCO Institute for Statistics (UIS)

PRESENTATION OUTLINE

- ☐ History and Role of the UIS
- ☐ ICTs in Education Process/ History
- ☐ WSIS Targets on ICTs in Education
- ☐ Data Collection in LAC and the Arab States
- ☐ Way Forward

WHY MEASURE ICTs IN EDUCATION?

- □ UNESCO sector demands, vision and mission
- □ International Commitments:
  - WSIS (Geneva, 2003) Plan of Action
  - eLAC2010 (Strategy for the Information Society in Latin America and the Caribbean)
  - Education for All (EFA) goals
  - Millennium Development Goals (MDGs)
  - New Partnership for Africa's Development (NEPAD) *e-schools initiative*
- □ Demands from analytical community
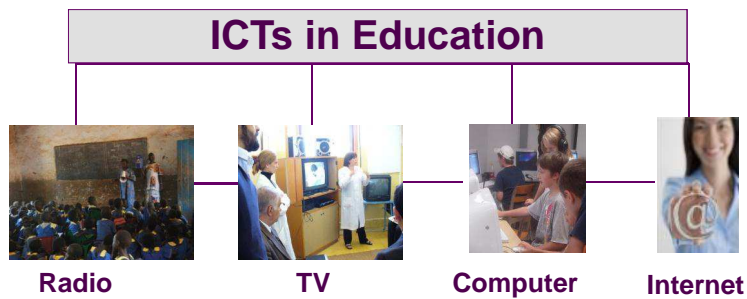- □ Partnership on Measuring ICT for Development (ICT4D)

RISE OF ICTs USED IN EDUCATION:
Country examples

- □ Uruguay (*El Ceibal* project); provides free laptops for all primary school-age pupils and primary teachers by 2009
- □ Malaysia (*Smart School* Project); provides schools with latest ICTs and the required training of teachers
- □ Russia: (Russia e-learning support project); provides greater access to ICTs in education and teacher professional development; also targets rural areas
- □ Belarus (State programmes): Achieved universal connectivity by 2008 by establishing computer labs in all schools
- □ Ghana, Kenya and Uganda (*E-reader* project) funded by WorldReader; provides children with digital textbooks

POLICY ISSUES AND PARTNERSHIPS:
What do we mean by ICTs in education?

ICTs in education refers to education models that employ ICTs to support, enhance and enable the delivery of education. Any, all or combinations of the following types of ICTs are included.

ICTs in Education

Radio   **TV**   **Computer**   **Internet**

PARTNERS

- Korea Education Research and Information Service (KERIS)
- UNESCO (Bangkok)
- UNESCO Communication and Information Sector
- Economic Commission for Latin America and the Caribbean (ECLAC)
- Inter-American Development Bank
- World Bank
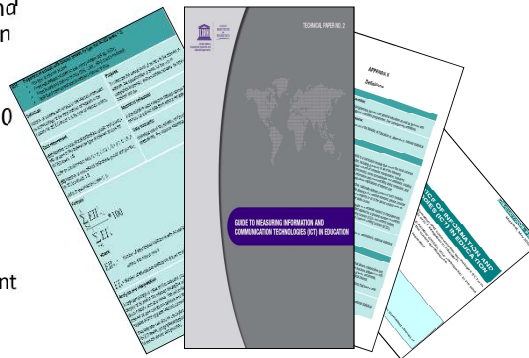- Partnership on Measuring ICT for Development (ICT4D)

WORKING GROUP FOR ICT STATISTICS IN EDUCATION (WISE): CORE INDICATORS

Adopted by the United Nations Statistical Commission (UNSC) through the Partnership on Measuring ICT for Development at its 40th session in February 2009

ED1	Proportion of schools with a radio used for educational purposes (for ISCED level 1-3)
ED2	Proportion of schools with a TV used for educational purposes (for ISCED level 1-3)
ED3	Proportion of schools with a telephone communication facility (for ISCED level 1-3)
ED4	Learner-to-computer ratio in schools with CAI (for ISCED level 1-3)
ED4. bis	Learner-to-computer ratio (for ISCED level 1-3)
ED5	Proportion of schools with Internet access at school, by type (for ISCED level 1-3) • Fixed narrowband Internet access (using modem dial-up, ISDN) • Fixed broadband Internet access (DSL, cable, other fixed broadband) • Both fixed narrowband and broadband Internet access
ED6	Proportion of learners who have access to the Internet at school (for ISCED level 1-3)
ED7	Proportion of learners enrolled by gender at the post-secondary non-tertiary and tertiary level in ICT-related fields (for ISCED level 4 and level 5- 6)
ED8	Proportion of ICT-qualified teachers in primary and secondary schools (for ISCED level 1-3)
EDR1	Proportion of schools with electricity (for ISCED level 1-3) --- *Reference indicator*

WISE: BEYOND THE CORE INDICATORS

□ Development of an international questionnaire and instructional manual for ICTs in education

□ **Guide to Measuring ICTs in Education**, which covers the 10 core indicators as well as an extended 43 indicators covering:

- Political commitment
- Infrastructure
- Teaching staff and development
- Curriculum
- Participation skills and output
- Outcomes and impact

CONTENT OF THE GUIDE ON ICTs IN EDUCATION

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- ❑ Detailed specifications:
  - → Statistical definitions
  - → Purpose
  - → Data requirement
  - → Interpretation
  - → Methodological issues and limitations
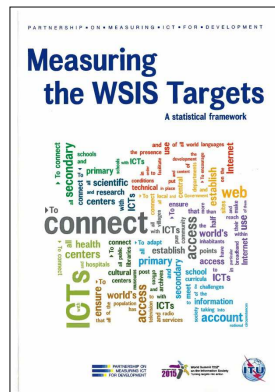- ❑ Serves as methodological reference material and facilitates operational implementation

ED7	Proportion of learners enrolled by gender at the post-secondary non-tertiary and tertiary level in ICT-related fields (for ISCED level 4 and level 5-6)

Definition: Number of learners currently admitted in ICT-related fields by gender as a percentage of all learners enrolled in educational institutions in a given country by gender for ISCED level 4 and level 5-6.	**Purpose:** To measure the share of learners in ICT-related fields of study in tertiary education institutions.
Data requirement: *(LIT)* Total number of learners (by gender) enrolled in ICT-related fields in tertiary education institutions for ISCED level 4 and level 5-6. *(L)* Total number of learners (by gender) enrolled in tertiary education institutions regardless of their fields of study for ISCED level 4 and level 5-6	**Method of collection:** Administrative data collection through annual school census (based on school registers). **Data source(s):** Statistical units of ministries of education or, alternatively, national statistical offices.

Formula :

$$\frac{LIT^{t}_{h=4}}{L^{t}_{h=4}} * 100 \; , \; \frac{\sum_{h=5}^{6} LIT^{t}_{h}}{\sum_{h=5}^{6} L^{t}_{h}} * 100$$

Where:

LIT^{t}_{h} = Enrolment of learners (by gender) in ICT-related field at tertiary education level h in school-year t

L^{t}_{h} = Enrolment of learners (by gender) at tertiary education level h in school-year t

Interpretation: A high percentage for this indicator may indicate an important demand for ICT-related studies by learners in relation to other fields of study. Compared to its value over time, a rapidly increasing percentage may suggest a fast adaptation to the new information age by a country in the provision of larger training opportunities in ICT-related fields. A computation of this indicator by key sub-categories may be useful to monitor more adequately some specific sub-fields of studies.	**Methodological and definition issues or operational limitations:** Further mapping and classificatory work will be required to re-code within the ISCED fields of study those fields that have emerged after 1997.

Partnership on Measuring ICT for Development (ICT4D)
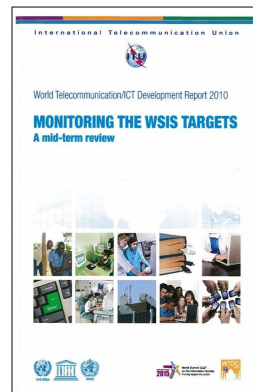
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World Summit on the Information Society (WSIS)

❑ As a follow up to the World Summit on Information Society (WSIS), a list of ten targets were identified.

❑ Partnership has written a publication on measuring these targets, as well as providing an analytical mid-term review based on pilot data collection

Statistical Framework

Mid-term Review

Target 2: Connect all secondary and primary schools with ICTs

□ Four indicators suggested to measure Target 2

□ All are existing UIS indicators, with three of them also being Partnership core indicators:

- Proportion of schools with a radio used for educational purposes
- Proportion of schools with a television used for educational purposes
- Learners-to-computer ratio*
- Proportion of schools with Internet access, by type of access

*Among the Partnership core indicators, the more specific indicator **Learners-to-computer ratio in schools with computer-assisted instruction** is included.*

Target 7: Adapt all primary and secondary school curricula to meet the challenges of the information society, taking into account national circumstances

□ Four indicators suggested to measure Target 7

□ All are existing UIS indicators, with one of them also being a Partnership core indicator:

- Proportion of ICT-qualified teachers in schools
- Proportion of teachers trained to teach subjects using ICT
- Proportion of schools with computer-assisted instruction
- Proportion of schools with Internet-assisted instruction

LAC and Arab States ICT QUESTIONNAIRE: Themes

- Policy and Curriculum
- ICT Infrastructure in Schools
- Pupils' access to/participation in programmes using ICTs
- Teachers' ICT Related Training and Use of ICT

Questions related to the digital divide

- Education level
  - Do primary schools have the same level of integration of ICTs in education as secondary schools?

- Education sector
  - Do public and private schools have the same level of integration of ICTs in education? Which sector has more access to ICTs in education

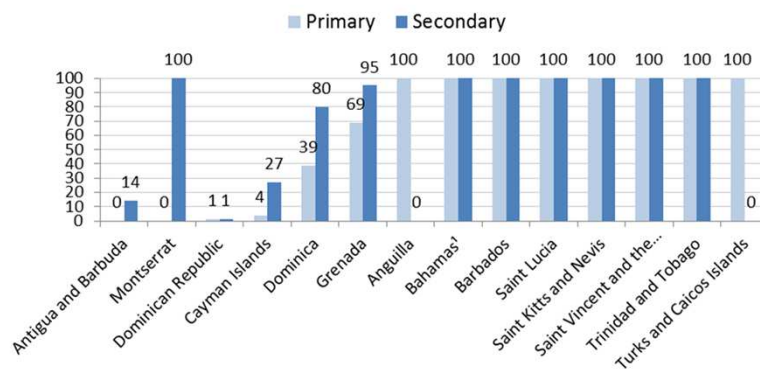- Gender
  - Do boys and girls enjoy the same level of access?

Target 2: Connect all secondary and primary schools with ICTs

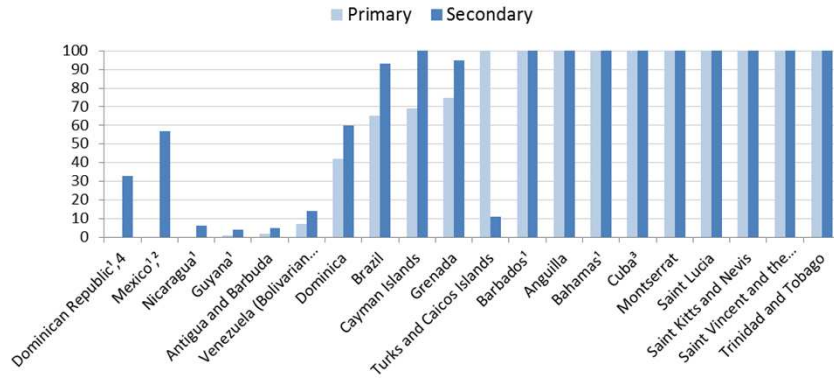- ❑ Reflects the importance of connecting schools with ICTs

Indicator 2.1: Proportion of schools with a radio used for educational purposes
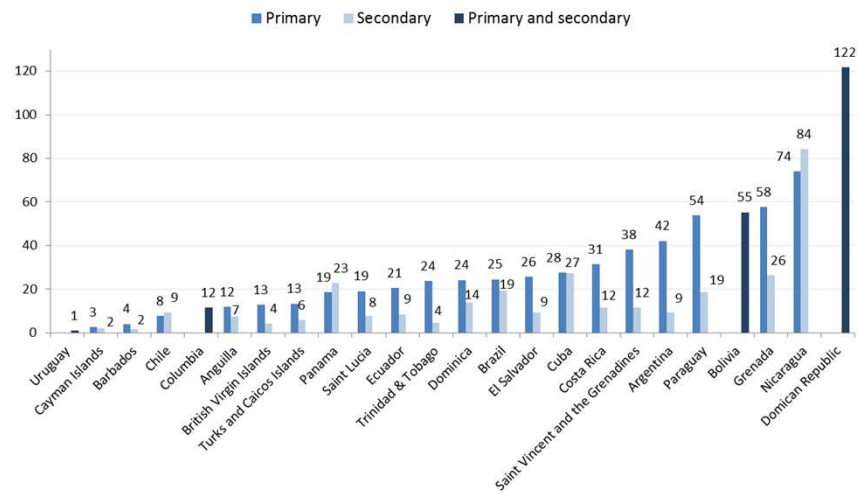
Indicator 2.2: Proportion of schools with a television used for educational purposes
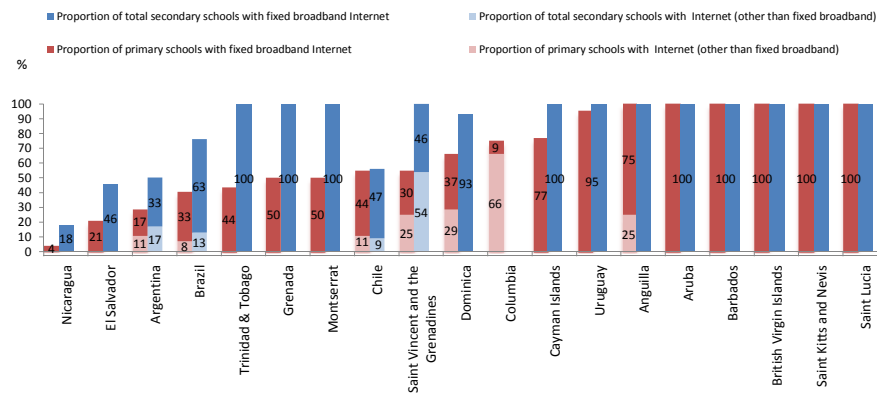
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Indicator 2.3: Learners-to-computer ratio

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Indicator 2.4: Proportion of schools with Internet access

- ■ Proportion of total secondary schools with fixed broadband Internet
- ■ Proportion of total secondary schools with Internet (other than fixed broadband)
- ■ Proportion of primary schools with fixed broadband Internet
- ■ Proportion of primary schools with Internet (other than fixed broadband)

Target 7: Adapt all primary and secondary school curricula to meet the challenges of the information society, taking into account national circumstances
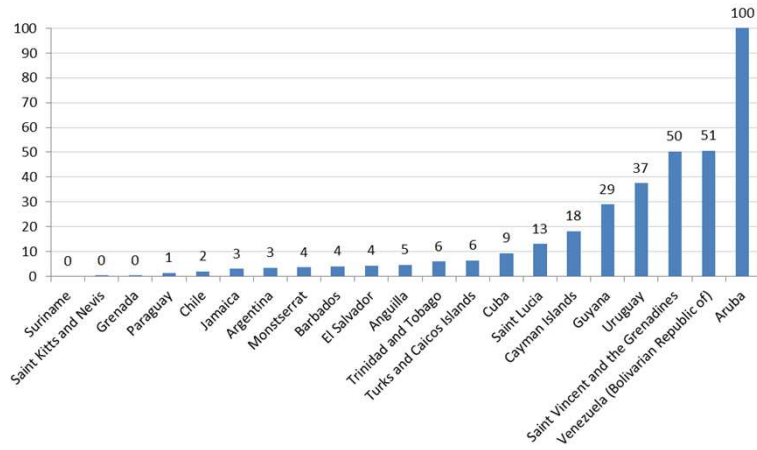
- ☐ Reflects the importance of enabling schools to benefit from ICT. Emphasis is on teacher training and on use of advanced forms of ICT-assisted instruction
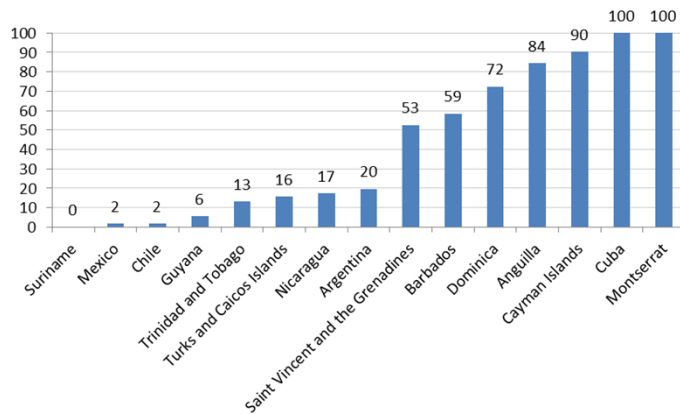
Indicator 7.1: Proportion of ICT-qualified teachers in schools
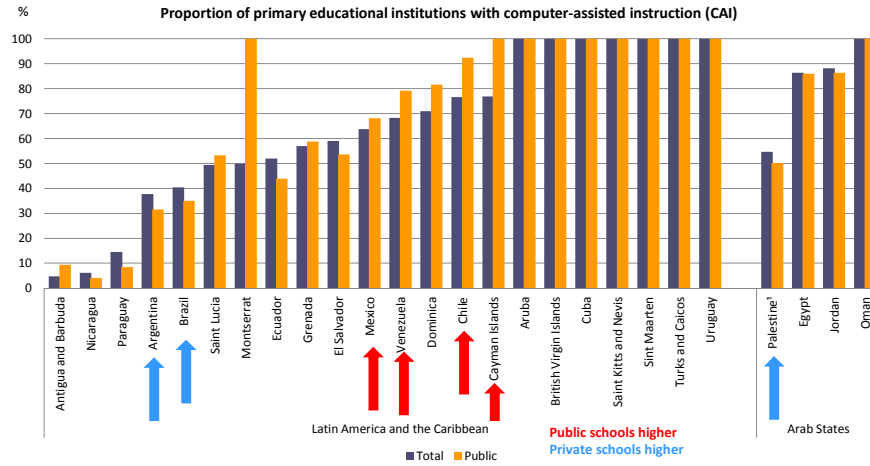

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Indicator 7.2: Proportion of teachers trained to teach subjects using ICTs
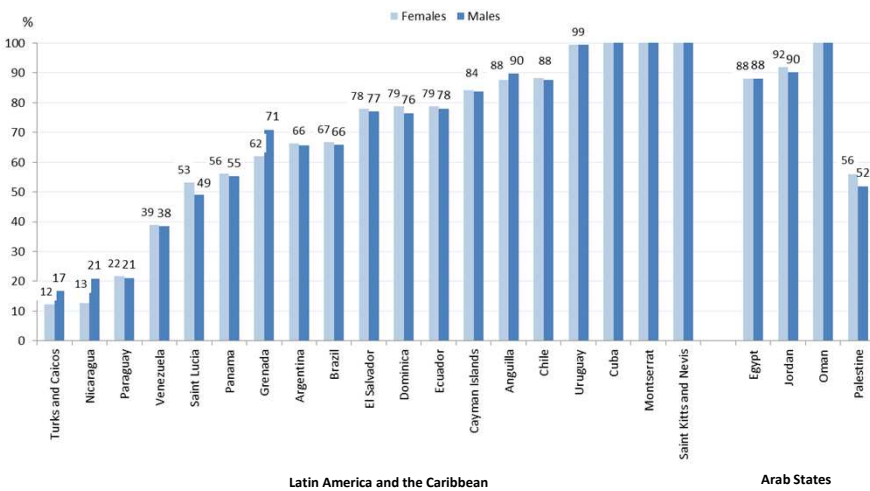

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Indicator 7.3: Proportion of schools with computer-assisted instruction (CAI)
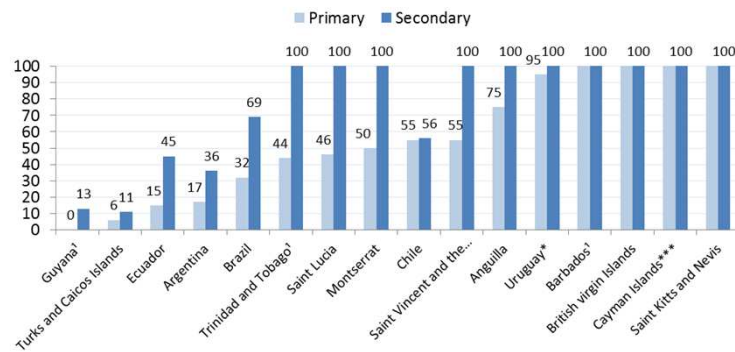
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Proportion of primary educational institutions with computer-assisted instruction (CAI)

Latin America and the Caribbean

Arab States

Public schools higher
Private schools higher

Total ■ Public ■

Gender: Females versus males
Enrolment in programmes providing computer-assisted instruction (CAI)

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Females ■ Males ■

	Females	Males
Turks and Caicos	12	17
Nicaragua	13	21
Paraguay	22	21
Venezuela	39	38
Saint Lucia	53	49
Panama	56	55
Grenada	62	71
Argentina	66	
Brazil	67	66
El Salvador	78	77
Dominica	79	76
Ecuador	79	78
Cayman Islands	84	
Anguilla	88	90
Chile	88	
Uruguay	99	
Egypt	88	88
Jordan	92	90
Palestine	56	52

Latin America and the Caribbean

Arab States

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Indicator 7.4: Proportion of schools with Internet-assisted instruction (IAI)

WAY FORWARD

- Regional perspective to data collection for ICT in education statistics
  - Latin America and the Caribbean: When to repeat the data collection?
    - REPORT to be released in September
  - Arab States (2011/2012): Coordinated by UNESCO Communications sector
    - REPORT to be released in October 2012
  - Asia and Pacific (2012): Partnership with KERIS (Rep. of Korea)
    - REPORT to be released in April 2013
  - Francophone sub-Saharan Africa: Data collection in 2013?
- Global perspective to data collection for ICT in education statistics: Potential strategies

THANK YOU

For more information on UIS statistics on ICT in education, please visit the UIS website:

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