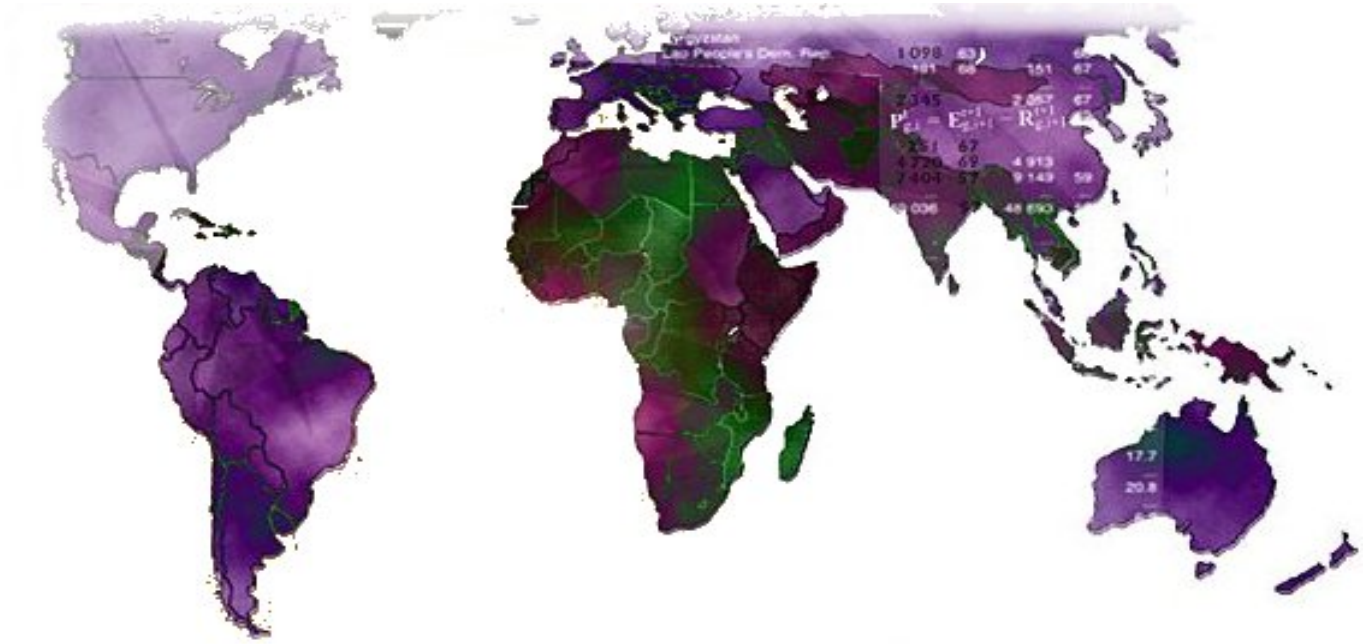


UIS Survey on Statistics of Information and Communication Technology (ICT) in Education

Regional workshop for Latin America and the Hispanic Caribbean
Sao Paulo, Brazil, 17-18 November 2016

Outline

Module 3

- Global survey on ICT in education
  - ✓ Policy and Curriculum
  - ✓ Educational Institutions & ICT infrastructure
  - ✓ Enrolment
  - ✓ Computers allocated to schools
  - ✓ Teaching staff and ICT

The questionnaire

Structure

- Section VAL — General information
- Section VAL — Policy
- Section VAL — Curriculum
- Section ICT1 — ICT infrastructure
- **Section ICT2 — Enrolment**
- Section ICT3 — Computers
- Section ICT4 — Teaching staff

ICT2: Students and ICTs by level of education and sex - all programmes (general and vocational)

Students				Primary (ISCED 1)	Lower secondary (ISCED 2)	Upper secondary (ISCED 3)	Not specified	Total
All schools	Number of students		Total					
			Female					
	In schools with:	Radio(s) for teaching and learning	Total					
			Female					
		Television(s) for teaching and learning	Total					
			Female					
		Computer(s) for teaching and learning	Total					
			Female					
		Internet for teaching and learning	Total					
			Female					
		Open Educational Resources (OER)	Total					
			Female					
		Courses on basic computer skills/computing	Total					
			Female					
Public schools only	Number of students		Total					
			Female					
	In schools with:	Radio(s) for teaching and learning	Total					
			Female					
		Television(s) for teaching and learning	Total					
			Female					
		Computer(s) for teaching and learning	Total					
			Female					
		Internet for teaching and learning	Total					
			Female					
		Open Educational Resources (OER)	Total					
			Female					
		Courses on basic computer skills/computing	Total					
			Female					

The questionnaire – Sources of information

Structure

2016 Survey of formal education – Students and teachers
(ISCED 0-4) Questionnaire A

Section VAL — General information

Section VAL — Policy / Curriculum

Section ICT1 — ICT infrastructure

Section ICT2 — Enrolment

Section ICT3 — Computers

Section ICT4 — Teaching staff

Students Full- and part-time			Early childhood education			Primary	Lower secondary			Upper secondary		
			Early childhood educational development	Pre-primary	All programmes	All programmes	General	Vocational	All programmes	General	Vocational	All programmes
			ISCED 01	ISCED 02	ISCED 0	ISCED 1	ISCED 24	ISCED 25	ISCED 2	ISCED 34	ISCED 35	ISCED 3
Students	Public institutions	Males										
		Females										
		Males and females										
	Private institutions	Males										
		Females										
		Males and females										
	Total	Males										
		Females										
		Males and females										
	Of which: part-time only											

Questionnaire ED/ICT - ICT2: Students and ICTs

Students				Primary (ISCED 1)	Lower secondary (ISCED 2)	Upper secondary (ISCED 3)	Not specified	Total
All schools	Number of students		Total					
			Female					
	In schools with:	Radio(s) for teaching and learning	Total					
			Female					
		Television(s) for teaching and learning	Total					
			Female					
		Computer(s) for teaching and learning	Total					
			Female					
		Internet for teaching and learning	Total					
			Female					
		Open Educational Resources (OER)	Total					
			Female					
		Courses on basic computer skills/computing	Total					
			Female					

ICT2: Students and ICTs by level of education and sex

Instructions

- In the past, enrolment data has been more difficult to collect
- Enrolment should correspond to instructional educational institution data
- To provide enrolments, map the instructional educational institution (school) data from **section ICT1** to **Tables in ICT2**
- Enrolment should include the grades that make up each educational level (i.e. primary, lower secondary, upper secondary, etc..) according to ISCED 2011.

ICT2: Students and ICTs by level of education and sex

Instructions

- If data on enrolments in ICT- assisted programmes are unavailable, estimates should be provided. Students should be allocated to a single ISCED level only. In other words, students should be counted only once.

ICT2: Students and ICTs by level of education and sex

ICT2: Enrolment in programmes with ICT by gender and level of education – all programmes, all schools

Students				Primary (ISCED 1)	Lower secondary (ISCED 2)	Upper secondary (ISCED 3)	Not specified	Total
All schools	Number of students		Total	52,000.000	25,000.000	20,000.000	1,000.000	98,000.000
			Female	27,000.000	14,000.000	11,000.000	600.000	52,600.000
	In schools with:	Radio(s) for teaching and learning	Total	2,000.000	4,000.000	6,000.000	500.000	12,500.000
			Female	1,200.000	2,200.000	4,000.000	300.000	7,700.000
		Television(s) for teaching and learning	Total	4,000.000	6,000.000	8,000.000	400.000	18,400.000
			Female	2,200.000	3,600.000	5,000.000	300.000	11,100.000
		Computer(s) for teaching and learning	Total	4,000.000	6,000.000	8,000.000	400.000	18,400.000
			Female	2,200.000	3,600.000	5,000.000	300.000	11,100.000
		Internet for teaching and learning	Total	3,000.000	5,000.000	7,000.000	100.000	15,100.000
			Female	1,500.000	3,000.000	4,000.000	60.000	8,560.000
		Open Educational Resources (OER)	Total	250.000	300.000	500.000	10.000	1,060.000
			Female	200.000	150.000	250.000	5.000	605.000
		Courses on basic computer skills/computing	Total	2,000.000	5,000.000	7,000.000	100.000	14,100.000
			Female	1,000.000	3,000.000	4,000.000	50.000	8,050.000

Figures in "Total" column are the sums of ISCED levels 1-3

ICT2: Students and ICTs by level of education and sex

ICT2: Enrolment in programmes with ICT by gender and level of education – all programmes, all schools

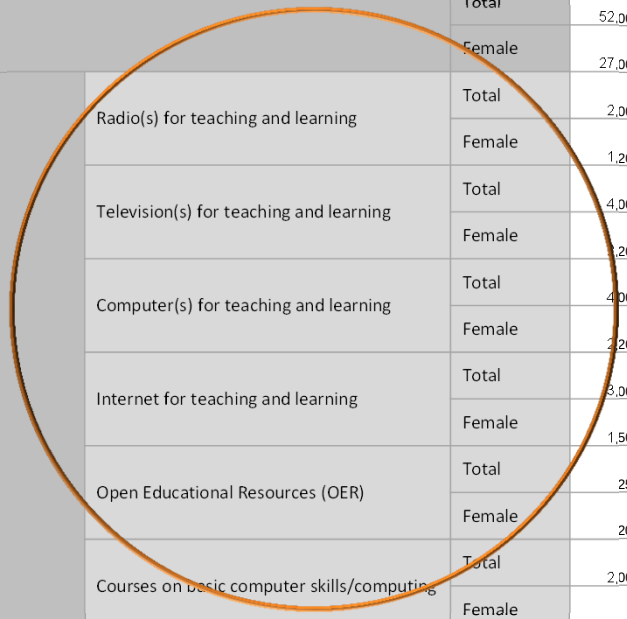
Students				Primary (ISCED 1)	Lower secondary (ISCED 2)	Upper secondary (ISCED 3)	Not specified	Total
All schools	Number of students		Total	52,000.000	25,000.000	20,000.000	1,000.000	98,000.000
			Female	27,000.000	14,000.000	11,000.000	600.000	52,600.000
	In schools with:	Radio(s) for teaching and learning	Total	2,000.000	4,000.000	6,000.000	500.000	12,500.000
			Female	1,200.000	2,200.000	4,000.000	300.000	7,700.000
		Television(s) for teaching and learning	Total	4,000.000	6,000.000	8,000.000	400.000	18,400.000
			Female	2,200.000	3,600.000	5,000.000	300.000	11,100.000
		Computer(s) for teaching and learning	Total	4,000.000	6,000.000	8,000.000	400.000	18,400.000
			Female	2,200.000	3,600.000	5,000.000	300.000	11,100.000
		Internet for teaching and learning	Total	3,000.000	5,000.000	7,000.000	100.000	15,100.000
			Female	1,500.000	3,000.000	4,000.000	60.000	8,560.000
		Open Educational Resources (OER)	Total	250.000	300.000	500.000	10.000	1,060.000
			Female	200.000	150.000	250.000	5.000	605.000
		Courses on basic computer skills/computing	Total	2,000.000	5,000.000	7,000.000	100.000	14,100.000
			Female	1,000.000	3,000.000	4,000.000	50.000	8,050.000

Figures in Total enrolment (males and females) are NOT equal to the sum of : radio, TV, computers, Internet, etc…

ICT2: Students and ICTs by level of education and sex

ICT2: Enrolment in programmes with ICT by gender and level of education – all programmes, all schools

Students				Primary (ISCED 1)	Lower secondary (ISCED 2)	Upper secondary (ISCED 3)	Not specified	Total
All schools	Number of students		Total	52,000,000	25,000,000	20,000,000	1,000,000	98,000,000
			Female	27,000,000	14,000,000	11,000,000	600,000	52,600,000
	In schools with:	Radio(s) for teaching and learning	Total	2,000,000	4,000,000	6,000,000	500,000	12,500,000
			Female	1,200,000	2,200,000	4,000,000	300,000	7,700,000
		Television(s) for teaching and learning	Total	4,000,000	6,000,000	8,000,000	500,000	18,500,000
			Female	2,200,000	3,600,000	5,000,000	300,000	11,100,000
		Computer(s) for teaching and learning	Total	4,000,000	6,000,000	8,000,000	500,000	18,500,000
			Female	2,200,000	3,600,000	5,000,000	300,000	11,100,000
		Internet for teaching and learning	Total	3,000,000	5,000,000	7,000,000	100,000	15,100,000
			Female	1,500,000	3,000,000	4,000,000	60,000	8,560,000
		Open Educational Resources (OER)	Total	250,000	300,000	500,000	10,000	1,060,000
			Female	200,000	150,000	250,000	5,000	605,000
		Courses on basic computer skills/computing	Total	2,000,000	5,000,000	7,000,000	100,000	14,100,000
			Female	1,000,000	3,000,000	4,000,000	50,000	8,050,000



Categories are not mutually exclusive; schools have more than one type of ICT

Concepts and Definitions

ENROLMENT

Individuals officially registered in a given educational programme, or stage or module thereof, regardless of age.

GENDER

Gender refers to the roles and responsibilities of men and women that are created in our families, our societies and our cultures. Gender roles and expectations are learned. They can change over time and they vary within and between cultures. Systems of social differentiation such as political status, class, ethnicity, physical and mental disability, age and more, modify gender roles. The concept of gender is vital because, applied to social analysis it reveals how women's subordination (or men's domination) is socially constructed. As such, the subordination can be changed or ended. It is not biologically predetermined nor is it fixed forever.

Concepts and Definitions

OPEN EDUCATIONAL RESOURCES (OER)

Refers to electronic resources and tools for learning in open document format and released under an intellectual property licence allowing free use, adaptation and distribution. From a statistical perspective, institutions must have a specific policy to devote resources for the coordination and maintenance of an electronic repository for pedagogical use.

Concepts and Definitions

BASIC COMPUTER SKILLS

Is a curriculum module that covers the most common usages of a computer, including a majority or all of the following: understanding the basic notions of computer manipulation; managing computer files, word processing, using spreadsheets and databases; creating presentations; finding information and communicating using computers; and being aware of social and ethical implications of Internet use. From a statistical perspective, nationally-defined content of such modules should be considered. In the absence of a national standard, please consider curriculum modules that have a majority or all of the above content units as equivalent to a basic computer skills course. Basic computer skills may be taught as a separate subject or integrated into other subjects. A common standard applied by a growing number of countries is the International Computer Driving Licence (ICDL) assessment system, which is derived from the European Computer Driving Licence (ECDL).

Concepts and Definitions

COMPUTING

Course programme usually taught at ISCED 4, 5 or 6 levels. Some schools may also teach computing (mainly computer programming) at ISCED 3. Typical computing course content may include: system design, computer programming, data processing, networks, operating systems and software development. Computing does not include computer hardware design, construction and production.

ICT2: Students and ICTs by level of education and sex

ICT2: Enrolment in programmes with ICT by gender and level of education – all programmes, all schools

Students				Primary (ISCED 1)	Lower secondary (ISCED 2)	Upper secondary (ISCED 3)	Not specified	Total
All schools	Number of students		Total	52,000.000	25,000.000	20,000.000	1,000.000	98,000.000
			Female	27,000.000	14,000.000	11,000.000	600.000	52,600.000
	In schools with:	Radio(s) for teaching and learning	Total	M	M	M	M	M
			Female	M	M	M	M	M
		Television(s) for teaching and learning	Total	4,000.000	6,000.000 W CINE3	X CINE2	400.000	10,400.000
			Female	2,200.000	3,600.000 W CINE3	X CINE2	300.000	6,100.000
		Computer(s) for teaching and learning	Total	4,000.000	6,000.000 W CINE3	X CINE2	400.000	10,400.000
			Female	2,200.000	3,600.000 W CINE3	X CINE2	300.000	6,100.000
		Internet for teaching and learning	Total	3,000.000	5,000.000 W CINE3	X CINE2	100.000	8,100.000
			Female	1,500.000	3,000.000 W CINE3	X CINE2	60.000	4,560.000
		Open Educational Resources (OER)	Total	Z	Z	Z	Z	0.000 Z
			Female	Z	Z	Z	Z	0.000 Z
		Courses on basic computer skills/computing	Total	2,000.000	5,000.000	7,000.000	100.000	14,100.000
			Female	X BS	X BS	X BS	X BS	X BS

M: Data for enrolment in instructional educational institutions with radio are not available
Z: Data for enrolment in instructional educational institutions with fixed broadband are not applicable since no schools have high speed
W: Data for lower secondary (ISCED 2) include upper secondary (ISCED 3)
X: Data for upper secondary (ISCED 3) is available in another category and cannot be disaggregated from lower secondary (ISCED 2)

ICT2: Students and ICTs by level of education and sex

ICT2: Enrolment in programmes with ICT by gender and level of education – all programmes, all schools

Students				Primary (ISCED 1)	Lower secondary (ISCED 2)	Upper secondary (ISCED 3)	Not specified	Total
All schools	Number of students		Total	52,000.000	25,000.000	20,000.000	1,000.000	98,000.000
			Female	27,000.000	14,000.000	11,000.000	600.000	52,600.000
	In schools with:	Radio(s) for teaching and learning	Total	M	M	M	M	M
			Female	M	M	M	M	M
		Television(s) for teaching and learning	Total	4,000.000	6,000.000 W CINE3	X CINE2	400.000	10,400.000
			Female	2,200.000	3,600.000 W CINE3	X CINE2	300.000	6,100.000
		Computer(s) for teaching and learning	Total	4,000.000	6,000.000 W CINE3	X CINE2	400.000	10,400.000
			Female	2,200.000	3,600.000 W CINE3	X CINE2	300.000	6,100.000
		Internet for teaching and learning	Total	3,000.000	5,000.000 W CINE3	X CINE2	100.000	8,100.000
			Female	1,500.000	3,000.000 W CINE3	X CINE2	60.000	4,560.000
		Open Educational Resources (OER)	Total	Z	Z	Z	Z	0.000 Z
			Female	Z	Z	Z	Z	0.000 Z
		Courses on basic computer skills/computing	Total	2,000.000	5,000.000	7,000.000	100.000	14,100.000
			Female	X BS	X BS	X BS	X BS	X BS

Courses on basic computer skills or computing; country cannot disaggregate enrolment by sex

ICT2: Students and ICTs by level of education and sex

Students				Primary (ISCED 1)			Lower secondary (ISCED 2)			Upper secondary (ISCED 3)			Not specified			Total		
All schools	Number of students		Total															
			Female															
	In schools with:	Radio(s) for teaching and learning	Total															
			Female															
		Television(s) for teaching and learning	Total															
			Female															
		Computer(s) for teaching and learning	Total															
			Female															
		Internet for teaching and learning	Total															
			Female															
		Open Educational Resources (OER)	Total															
			Female															
		Courses on basic computer skills/computing	Total															
			Female															
Public schools only	Number of students		Total															
			Female															
	In schools with:	Radio(s) for teaching and learning	Total															
			Female															
		Television(s) for teaching and learning	Total															
			Female															
		Computer(s) for teaching and learning	Total															
			Female															
		Internet for teaching and learning	Total															
			Female															
		Open Educational Resources (OER)	Total															
			Female															
		Courses on basic computer skills/computing	Total															
			Female															

Number of students enrolled in courses on basic computer skills/computing (All schools and public schools only) will be incorporated into the Questionnaire of formal education (Questionnaire A)

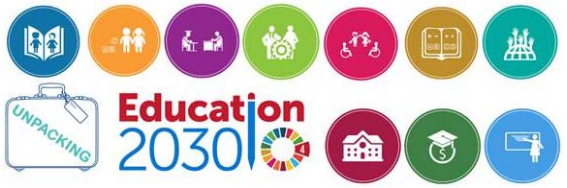
What is measured ?

Indicators that may be calculated:

- Proportion of learners who have access to programmes offering ICT-assisted instruction
  - ✓ **All programmes** (General education & technical vocational education and training)
  - ✓ **Total** = Public + Private; and public only
  - ✓ **Total** = Both sexes (Male + Female); and Female only
- Gross enrolment ratio in programmes with ICTs for teaching and learning (to be developed)

What is measured ?

Indicator prioritization



Conceptual domains	Indicator label	Indicators
Participation, skills and output	**ED6****	**Proportion of pupils enrolled in programmes with access to the Internet for pedagogical purposes (by gender, by type of institution for ISCED levels 1-3)**
	ED41bis	Proportion of pupils enrolled in programmes with access to computers for pedagogical purposes (by gender, by type of institution for ISCED levels 1-3)
	ED44bis	Proportion of pupils enrolled in programmes with access to a radio for pedagogical purposes (by gender, by type of institution for ISCED levels 1-3)
	ED44bis2	Proportion of pupils enrolled in programmes with access to a television for pedagogical purposes (by gender, by type of institution for ISCED levels 1-3)
	ED45**	**Proportion of pupils enrolled in programmes offering courses on basic computer skills (or computing) (by gender, by type of institution for ISCED levels 1-3)**

Indicador adicional **Indicador básico + Objetivo CSMI + Educación 2030****

Indicator prioritization

Proportion of pupils enrolled in programmes with access to the Internet for pedagogical purposes (by gender, by type of institution for ISCED levels 1-3)

ED6	**Proportion of learners who have access to the Internet at school (for ISCED levels 1-3)**
Definition: Number of learners with access to the Internet in school expressed as a percentage of the total number of learners in school for ISCED levels 1-3.	**Purpose:** To measure Internet accessibility among learners for educational purposes.
Data requirement: ***(LI)*** Number of learners entitled to use Internet laboratories at school as a pedagogical aid for ISCED levels 1-3. *(refer to questionnaire item E.1.2)* ***(L)*** Number of learners for ISCED levels 1- 3. *(refer to questionnaire item E.1)*	**Method of collection:** • Administrative data collection through annual school census (or extract data from school records); or alternatively • Sample school survey or household survey (self-reported responses by household members attending school at ISCED levels 1 to 3).
	Data source(s): Statistical unit of the Ministry of Education or, alternatively, the national statistical office.

Indicator prioritization

Proportion of pupils enrolled in programmes with access to the Internet for pedagogical purposes (by gender, by type of institution for ISCED levels 1-3)

Formula :

$$\frac{\sum_{h=1}^{3} LI_h^t}{\sum_{h=1}^{3} L_h^t} * 100$$

Where:

LI_h^t = Number of learners entitled to use Internet at school as pedagogical aid at education level ***h*** in school-year ***t***

L_h^t = Number of learners enrolled at education level ***h*** in school-year ***t***

Indicator prioritization

Proportion of pupils enrolled in programmes with access to the Internet for pedagogical purposes (by gender, by type of institution for ISCED levels 1-3)

Analysis and interpretation:

A high percentage or value for this indicator suggests a high degree of access to the Internet in school for learners. By matching the number of learners with Internet access entitlement with the number of computers for pedagogical purposes connected to the Internet in schools, one can have a better sense of the potential effectiveness of Internet-assisted instruction.

Depending on the pedagogical need, 100% access to the Internet for all learners may not be a crucial educational target for all grades at ISCED levels 1-3. For the time being, even in developed countries, Internet access for learners at the early grades of ISCED level 1 tend not to be a systematic or mandatory pedagogical requirement, although few exceptions exist.

Besides its use for international comparison, this indicator can also be calculated and analysed by ISCED levels and grades, geographical regions, urban/rural areas, and by public/private schools.

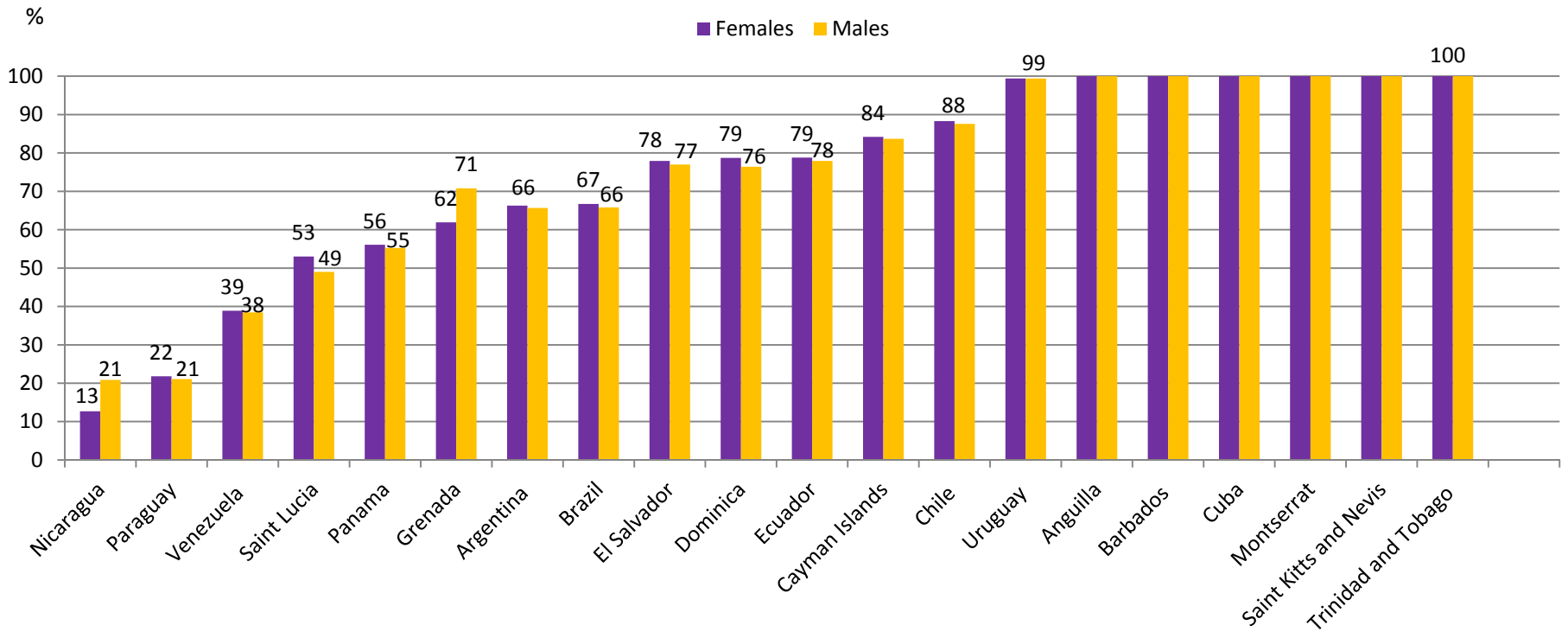
Methodological and definition issues or operational limitations:

- Distortion may be possible with some private (or even public) or specialised institutions offering Internet access at a grade or age different from a nationally defined grade or age of learners.
- The type of bandwidth for Internet connectivity in schools as well as the number of simultaneous users can constrain the amount of Internet resources accessible within a given time span.
- The number of computers connected to the Internet available for pedagogical use will largely determine the ability of learners to access the Internet.
- This indicator does not account for the actual use or frequency of use of the Internet by learners.

What is measured ?

Indicator prioritization

Proportion of primary-level pupils enrolled in programmes with access to computers for pedagogical purposes (or offering computer-assisted instruction (CAI), by sex, 2010 – Latin America and the Caribbean



Comments

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

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