ICT IN EDUCATION STATISTICS:
Supporting effective policymaking in Central Asia

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Outline

- UIS mandate
- Why measure ICT in education?
- Data and outputs
- Conclusions and moving forward
UNESCO Institute for Statistics

- Founded in 1999 in Paris
- Relocated to Montreal in 2001
- Located at Université de Montréal
- Mandated to maintain international databases for:
  - Education
  - Science, technology and innovation
  - Culture
  - Communication and information

www.uis.unesco.org
UIS mandate

- Collection and dissemination of cross-nationally comparable data
- Analysis of comparative data
- Development of international classifications/frameworks
- Technical capacity building within countries
- Advocacy for statistics in relation to UNESCO’s areas of interest
UIS data are widely used for:

UIS publications
- Thematic reports
- Factsheets
- Information notes
- Technical papers

UIS on-line data centre
Over 1,000 types of indicators and raw data on education, literacy, science and technology, culture and communication from more than 200 Member States and international organizations

Other international high-profile publications
UIS data are used to measure key development issues

- Human Development Index
- Gender Inequality Index
- Education for All
- Knowledge Index
- Knowledge Economy Index
- ICT Development Index
- Global Gender Gap
- Global Innovation Index
Why measure ICT in education?

- Support country policy making for ICT in education
- International commitments and benchmarking:
  - UNESCO sector demands, vision and mission
  - Demands from analytical community
Supporting countries in selecting priorities and designing policies

Data on ICT in education can be used to:

- Identification of gaps in infrastructure (e.g. lack of computers, Internet, etc.) that need to be filled to introduce new paradigms of student learning and teaching as related to educational reform;
- Inform decisions to extend ICT across curriculum leading to expanded skills acquisition, future employability, and lifelong learning;
- Inform decisions on introducing alternative technologies (e.g. radio, television) to ensure equity in education for marginalized remote populations where infrastructure is lacking; and
- Identify teacher training needs and gaps in knowledge and skills.
International commitments and benchmarking (Pre-2015 context)

- Millennium Development Goals (MDGs) Target 8.F
  - “In cooperation with the private sector, make available the benefits of new technologies, especially information and communications”

- Education for All (EFA) goals
  - While not mentioned explicitly in the Education for All goals (EFA), it is argued they fulfill a pivotal role in their achievement including broadening access, eliminating exclusion, and improving quality in education.

- **Conclusion:** ICT not represented adequately in the pre-2015 education monitoring framework
World Summit on the Information Society (WSIS)

- Main monitoring mechanism in the pre-2015 context for ICT in education.
- Held in Geneva (2003) and Tunis (2005) to discuss a broad range of subjects related to ICT for development.
- Governments agreed on a set of commitments and actions to foster the establishment of an inclusive information society.
- In particular, ten targets were identified in the Geneva Plan of Action; two related to education.
Target 2. Connect all secondary schools and primary schools with ICTs.

- 2.1 Proportion of schools with a radio used for educational purposes;
- 2.2 Proportion of schools with a television used for educational purposes;
- 2.3 Learners-to-computer ratio;
- 2.4 Proportion of schools with Internet access, by type of access.

All collected by UIS
World Summit on the Information Society (WSIS)

- Target 7. Adapt all primary and secondary school curricula to meet the challenges of the information society, taking into account national circumstances.
  - 7.1 Proportion of ICT-qualified teachers in schools;
  - 7.2 Proportion of teachers trained to teach subjects using ICT;
  - 7.3 Proportion of schools with computer-assisted instruction (CAI);
  - 7.4 Proportion of schools with Internet-assisted instruction (IAI).

- All collected by UIS
UIS Technical Guide on ICT in education indicators covers:

- WSIS indicators (8),
- UIS core indicators (9), as well as
- Extended indicators (43):
  - Political commitment
  - Curriculum
  - Infrastructure
  - Teaching staff and development
  - Participation, skills and output
  - Outcomes and impact
International Commitments and Benchmarking (Post-2015 context)

- Sustainable Development Goals (SDGs); no SDG directly measures ICT; however it is a cross cutting theme

- *Partnership on Measuring ICT for Development* proposal for the inclusion of ICT indicators:
  - Goal 4: Ensure inclusive and equitable quality education and promote life-long learning opportunities for all
  - Goal 5: Achieve gender equality and empower all women and girls; and
  - Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
Incheon Declaration

- World Education Forum 2015
  - 19-22 May 2015, Incheon, Republic of Korea

- Article 10:
  - “We are also committed to strengthening science, technology and innovation. Information and communication technologies (ICTs) must be harnessed to strengthen education systems, knowledge dissemination, information access, quality and effective learning, and more effective service provision.”
Qingdao Declaration: Articles related to statistics and monitoring

Article 16.
- Countries commit to developing comprehensive national monitoring and evaluation frameworks using ICT in education statistics.

Article 17.
- Countries commit to support capacity building in data collection; UIS provide support at the national level; countries report data to UIS in a complete and timely manner.

Article 18.
- Global Education Monitoring Report to use ICT in education indicators to provide global level monitoring.
ICT IN EDUCATION DATA AND OUTPUTS

- UIS database
- Regional reports and international reports
Electricity defined as stable and reliable source of power

Electricity less common in low income and least developed countries (LDCs)

Data for Malaysia, New Zealand, Nepal and Sri Lanka reflect 2011; data for Cambodia, Philippines, Singapore and Iran reflect only public schools
Proportion of educational institutions with computer-assisted instruction and computer labs, primary, 2012 or LYA

Central Asia

East Asia and Pacific

South and West Asia
Significant disparities between and within regions; high = low income and LDCs; low in high income and east Asian countries

Proxy indicator for usage; however, relationship not always clear

Progress over the decade in developing countries with high level and a sector-wide support (Georgia and the Deer Leap programme)
Proportion of educational institutions with Internet, fixed broadband and Internet-assisted instruction, primary and secondary, 2012 or LYA

Central Asia

East Asia and Pacific

South and West Asia
Pupil-teacher ratios (PTRs), primary and secondary, 2013 or LYA
Teacher training varies among countries by educational level, duration, content: Indicator demonstrates countries’ progress against their own internal standards and targets.
Trained teachers with lower secondary qualifications, 2012

- Lao PDR:
  - Percentage trained teachers: 97%
  - Years of teacher training: 4
  - Years of formal education: 5

- Tanzania:
  - Percentage trained teachers: 97%
  - Years of teacher training: 4
  - Years of formal education: 7

Lower secondary
Teacher training/ usage of ICT

- Differentiation between training to:
  - Teach ICT skills (ICT-qualified)
  - Teach using ICT to support curriculum in general

- Differentiation between:
  - Teaching ICT skills
  - Using ICT to support general curriculum
Proportions of teachers teaching ICT courses versus using ICT to teach other curriculum, 2012 or LYA

Mongolia: Five per cent of teachers teaching basic computer skills versus 1% trained

Kyrgyzstan: No teachers trained to teach using ICT in general curriculum
Summary – Central Asia

- Difficult to make generalisations about ICT in education across Central Asia:
  - Not all countries provided data: Tajikistan, Turkmenistan and Uzbekistan

- However of countries reporting data:
  - Electrification is generally not a barrier, and progress is being made
  - However resources vary: computer density, Internet in schools, teacher training
Data Gaps

- Disaggregation of schools by level (primary and secondary) since schools can have more than one level results in difficulty measuring infrastructure.
- Pupil-computer ratios – disaggregating devices by educational level.
- Data on type of Internet: fixed broadband versus others.
- Participation (enrolment) rates in ICT-assisted instruction.
- Data on teacher training and usage.
- No time series data.
- Usage and outcomes.
Way Forward

- Technical advisory panel (TAP) called for broadening as well as sharpening of UIS indicators, calling for:
  - Redesign of survey on administrative data
  - New list of core indicators
  - 1st GLOBAL DATA COLLECTION (November 2015)

- Additional capacity-building workshops, including:
  - EASTERN EUROPE AND CENTRAL ASIA REGION: MOSCOW (24-26 NOVEMBER); IN COLLABORATION WITH IITE

- Design of new surveys:
  - Usage - efforts underway between UIS, UNESCO regional bureaux, KERIS (Republic of Korea), CETIC.Br (Brazil)
  - Open educational resources (OER)
Thank you!

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ICT in education:
http://www.uis.unesco.org/Communication/Pages/ict-education.aspx
Data:
http://www.uis.unesco.org/DataCentre/Pages/BrowseCommunication.aspx