



ICT IN EDUCATION STATISTICS:

Supporting effective policymaking in Central Asia

Peter Wallet, Assistant Programme Specialist

CENTRAL ASIA SYMPOSIUM ON ICT IN EDUCATION 2015

**Fostering an Enabling Environment for Teacher Innovation:
From Policy to Practice**

7-9 July 2015, Bishkek, Kyrgyz Republic



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

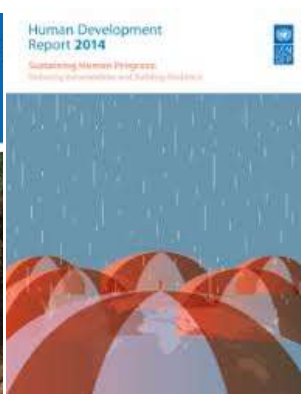
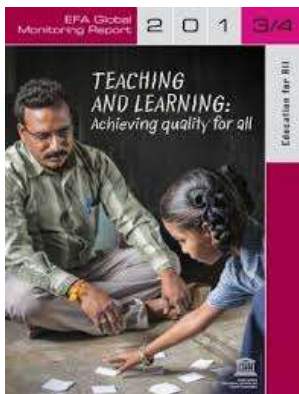


UIS on-line data centre

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



UNESCO
INSTITUTE
for
STATISTICS



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.



World Summit Geneva 2003
Tunis 2005
on the Information Society
Turning targets into action

World Summit on the Information Society (WSIS)

- 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.

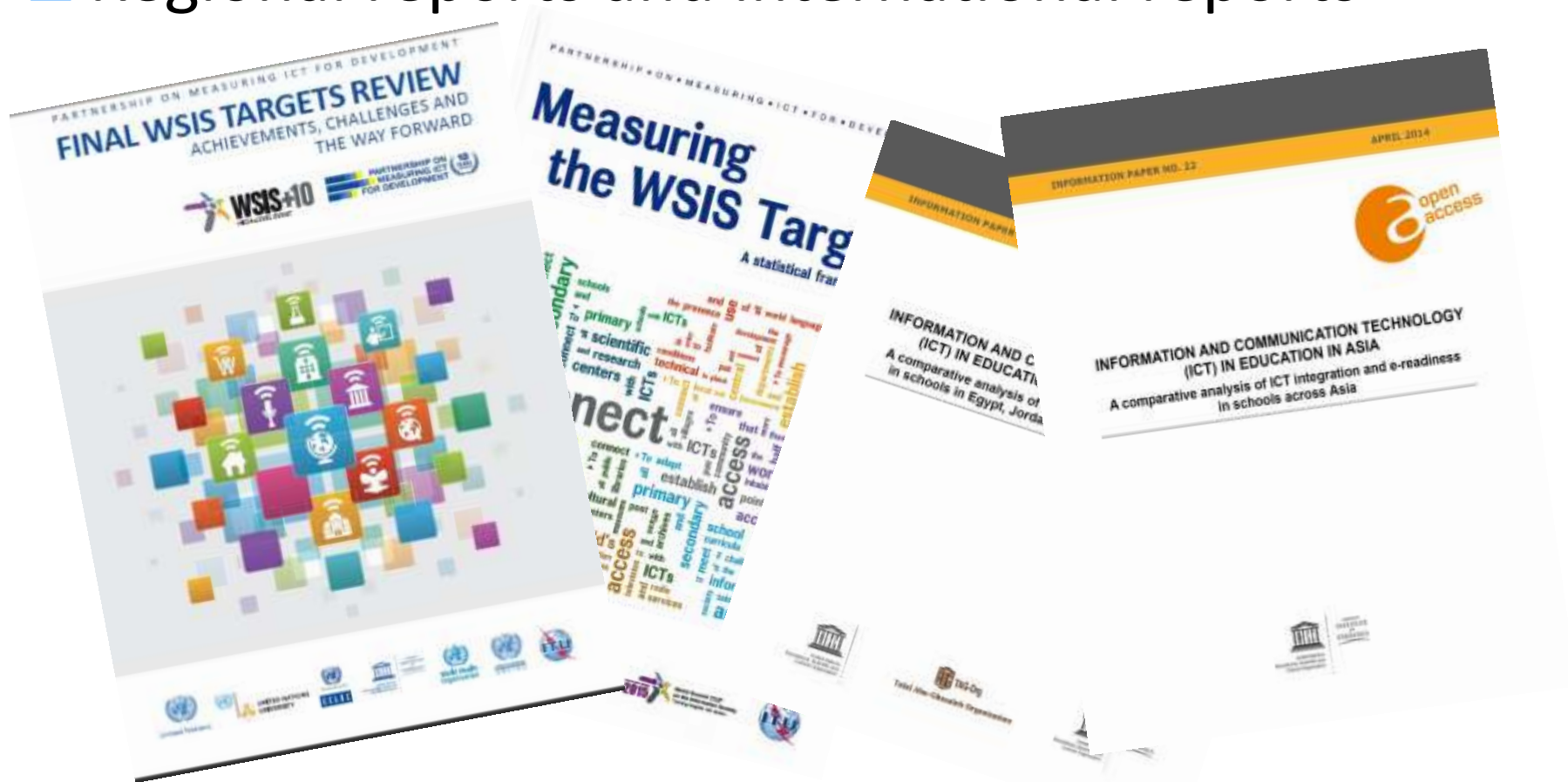
- ▣ Countries commit to support capacity building in data collection; UIS provide support at the national level; countries report data to UIS in a complete and timely manner.

Article 18.

- ▣ Global Education Monitoring Report to use ICT in education indicators to provide global level monitoring.

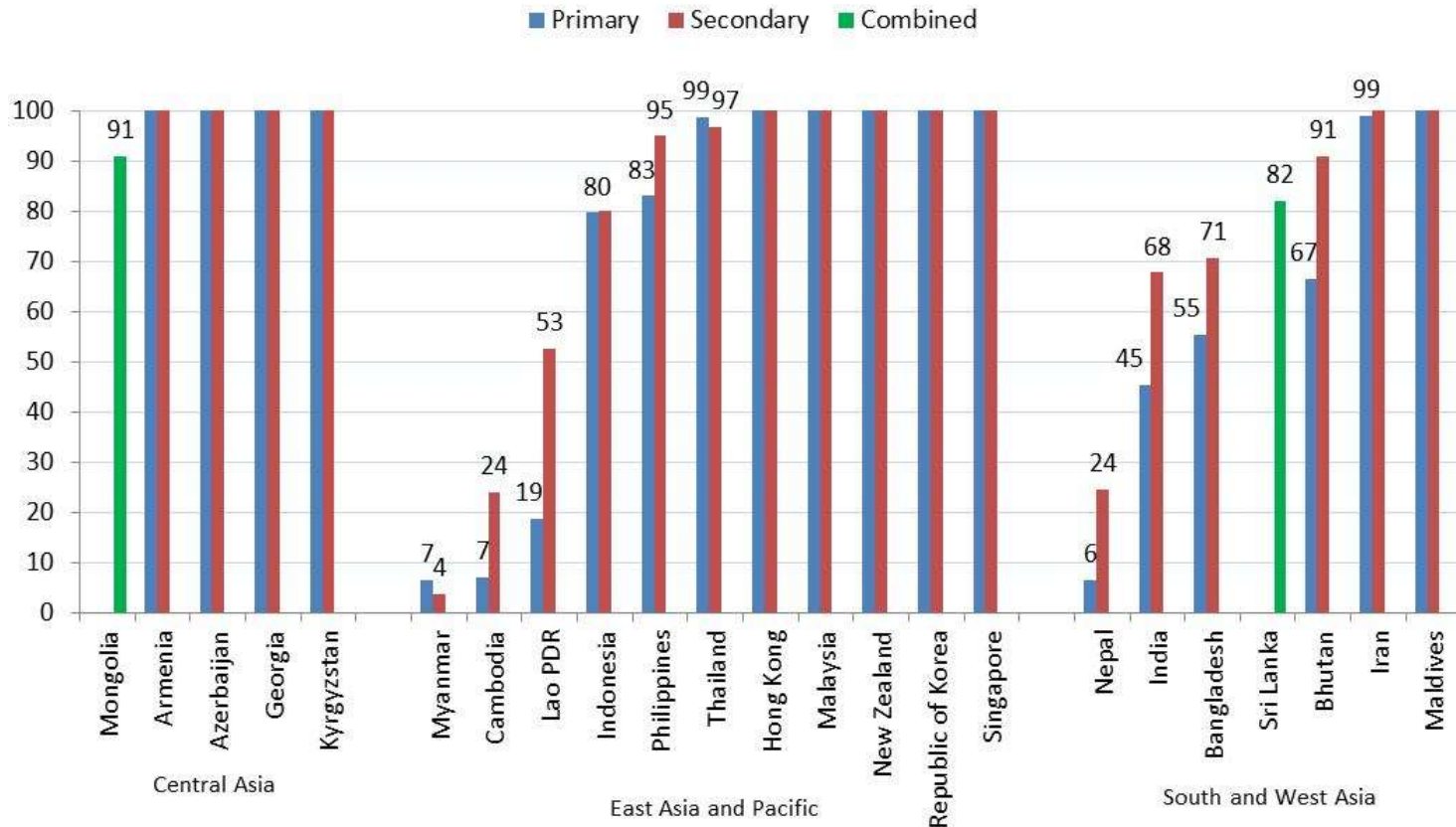
ICT IN EDUCATION DATA AND OUTPUTS

- ▣ UIS database
- ▣ Regional reports and international reports



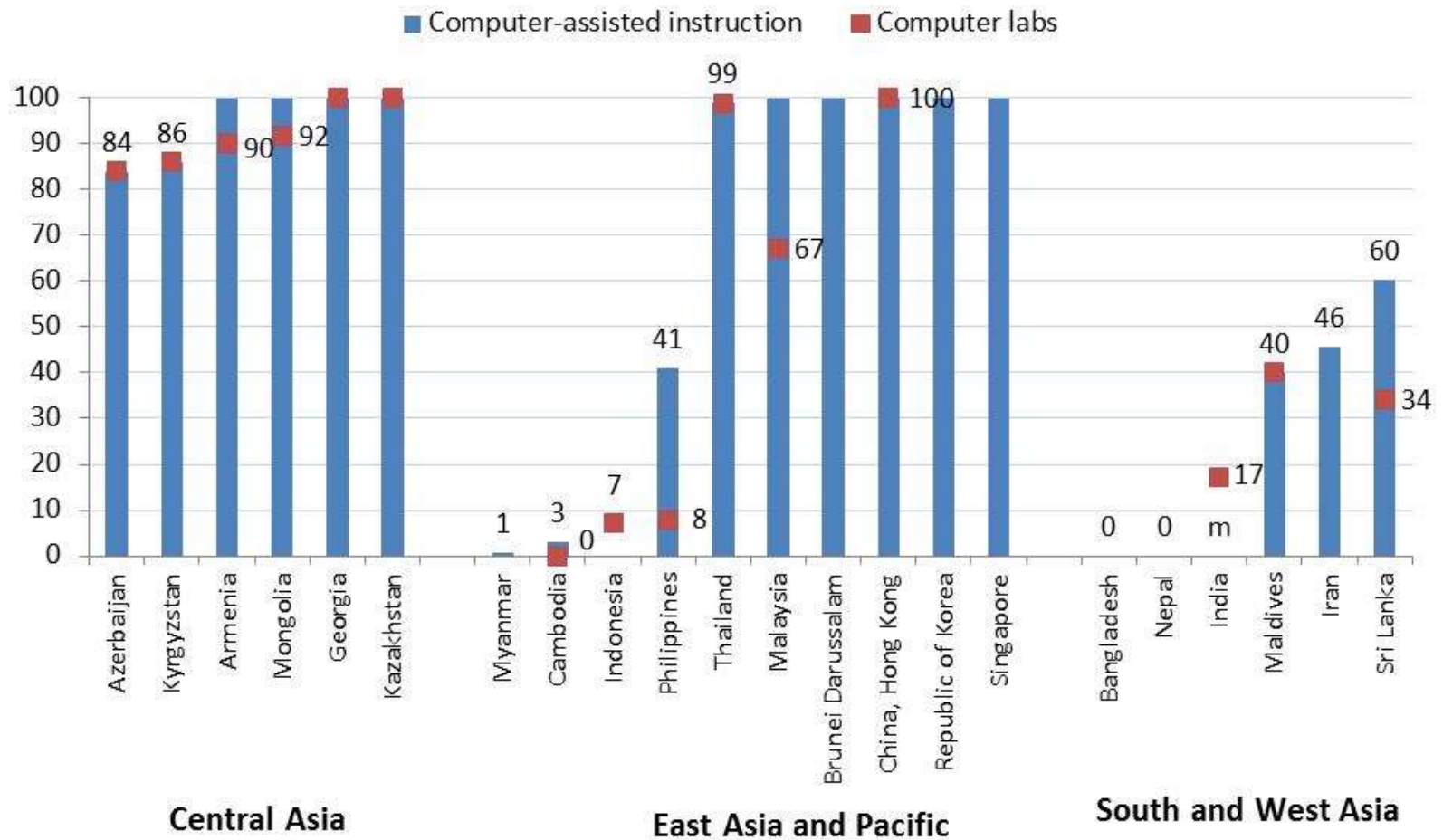
Electricity in primary/ sec. schools, 2012

An important enabler for ICT!

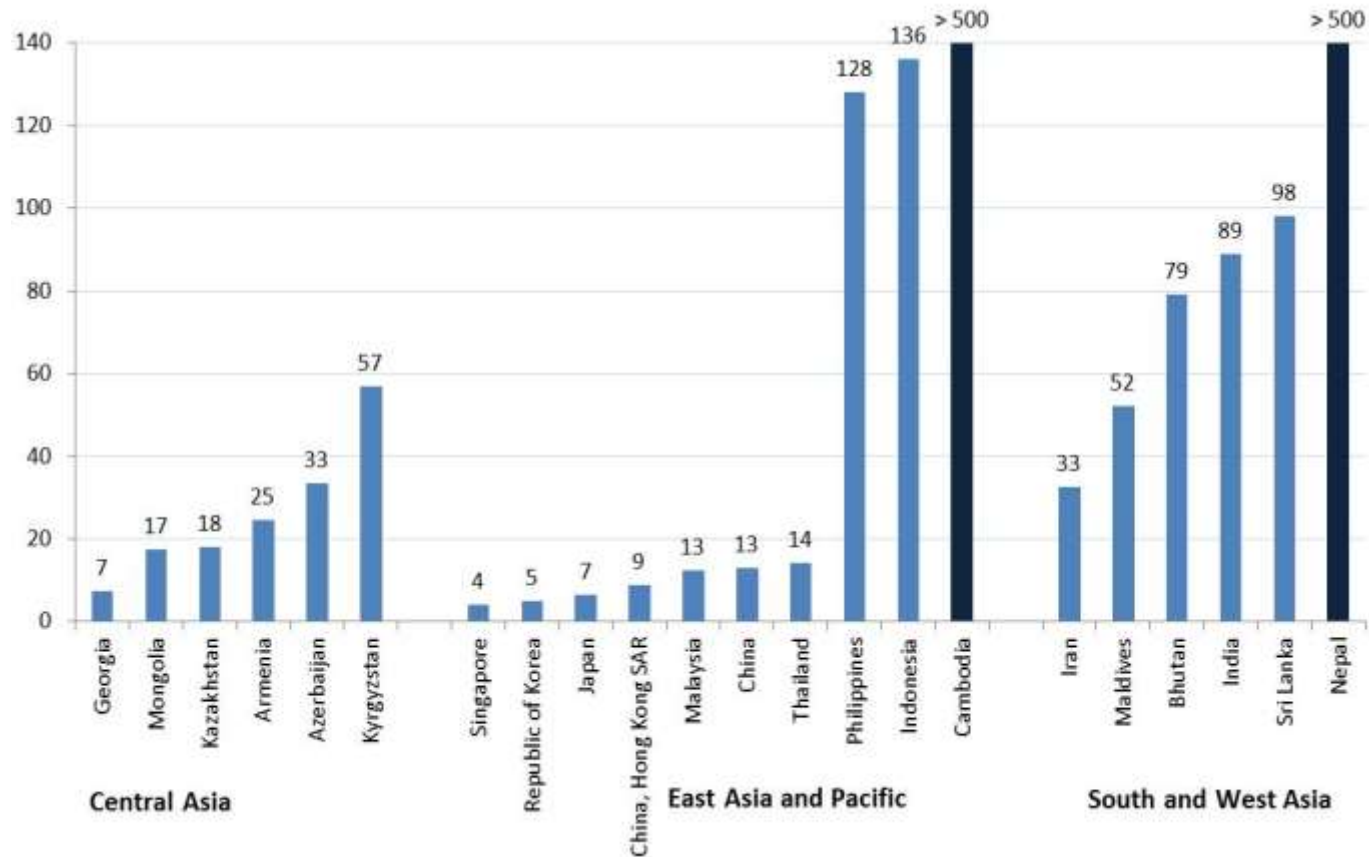


- ❑ Electricity defined as stable and reliable source of power
- ❑ Electricity less common in low income and least developed countries (LDCs)
- ❑ Data for Malaysia, New Zealand, Nepal and Sri Lanka reflect 2011; data for Cambodia, Philippines, Singapore and Iran reflect only public schools

Proportion of educational institutions with computer-assisted instruction and computer labs, primary, 2012 or LYA

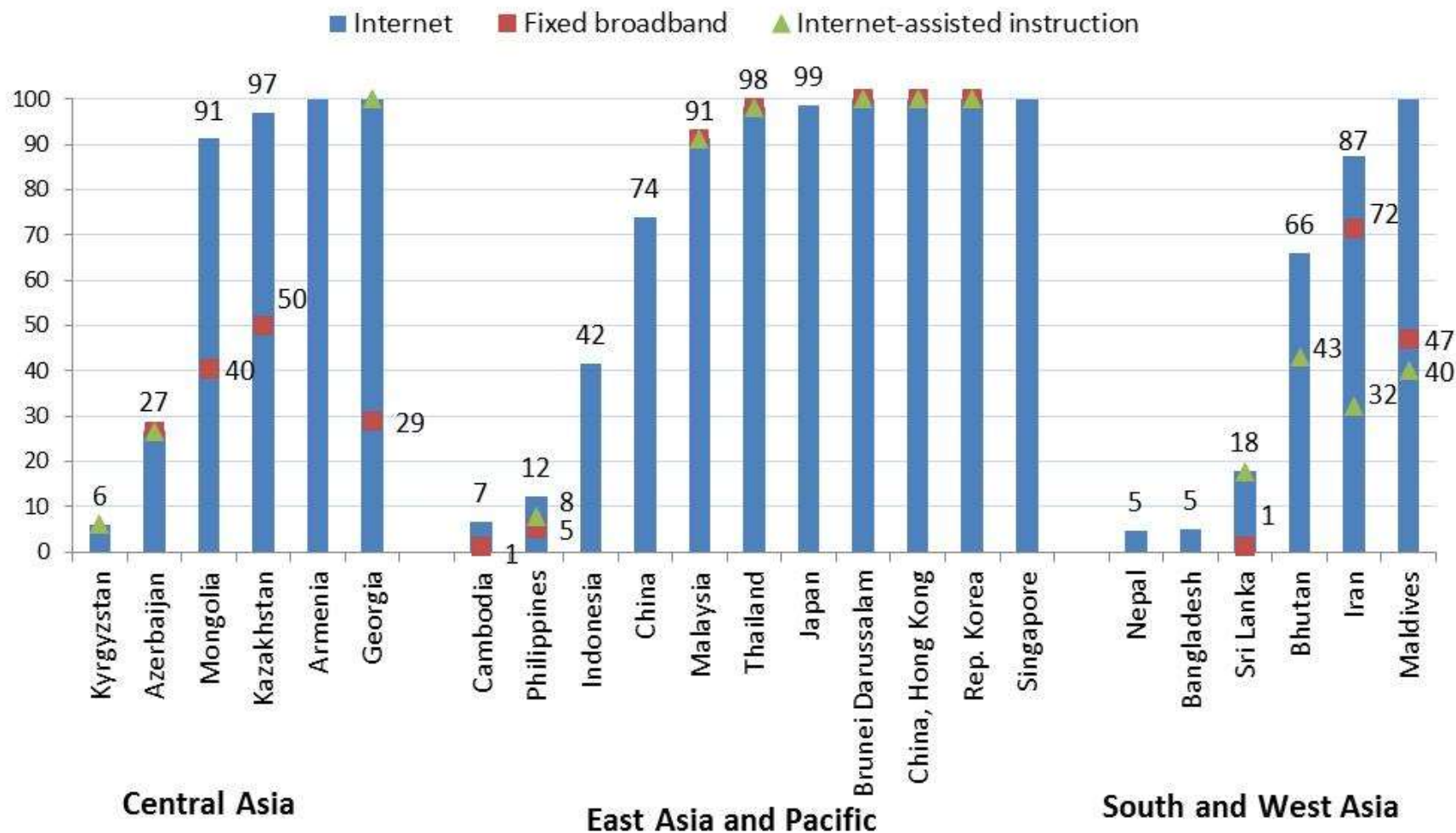


Pupil (learner)-to-computer ratio, primary and secondary combined, 2012 or LYA

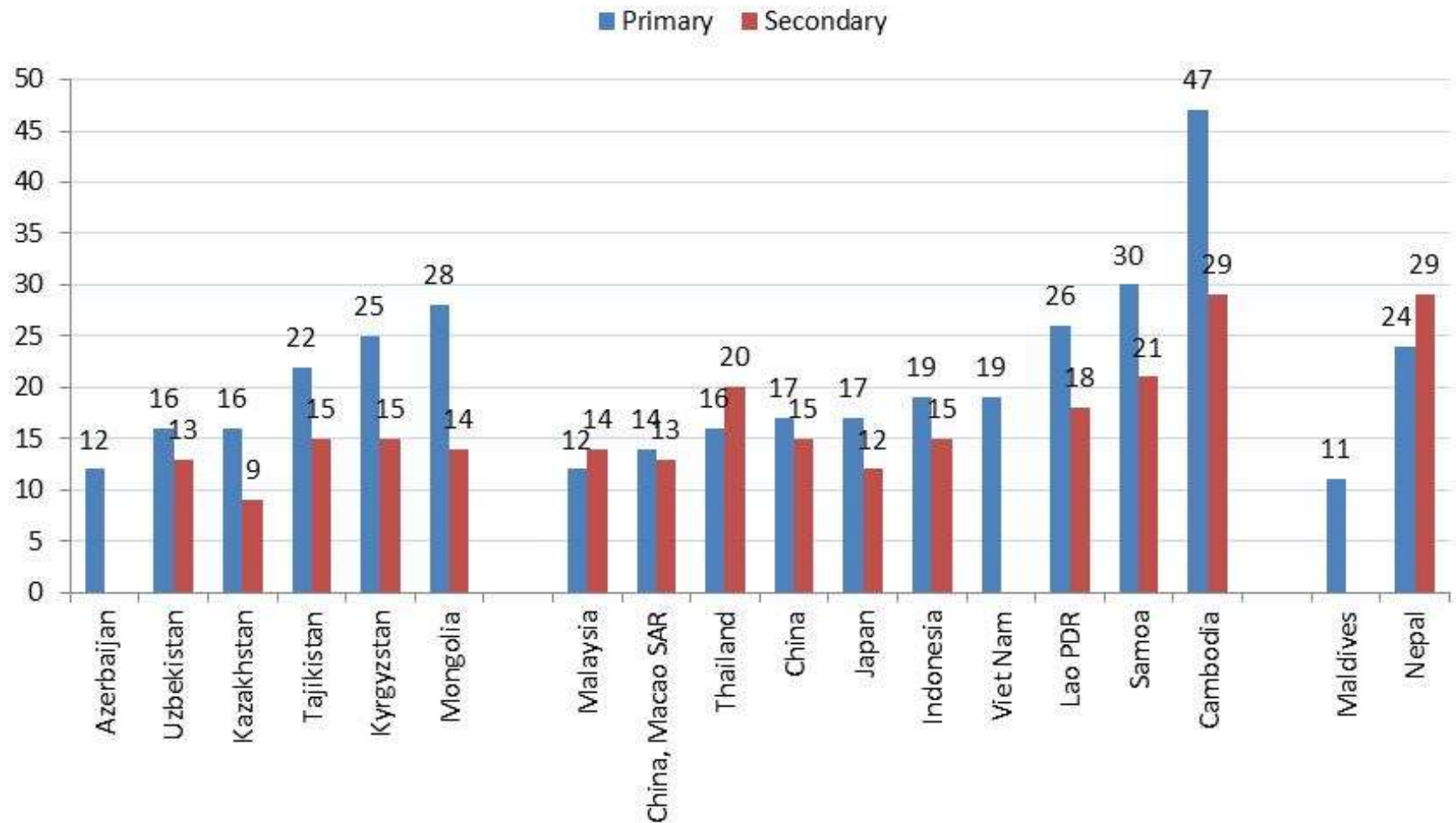


- ❑ Significant disparities between and within regions; high = low income and LDCs; low in high income and east Asian countries
- ❑ Proxy indicator for usage; however, relationship not always clear
- ❑ Progress over the decade in developing countries with high level and a sector-wide support (Georgia and the Deer Leap programme)

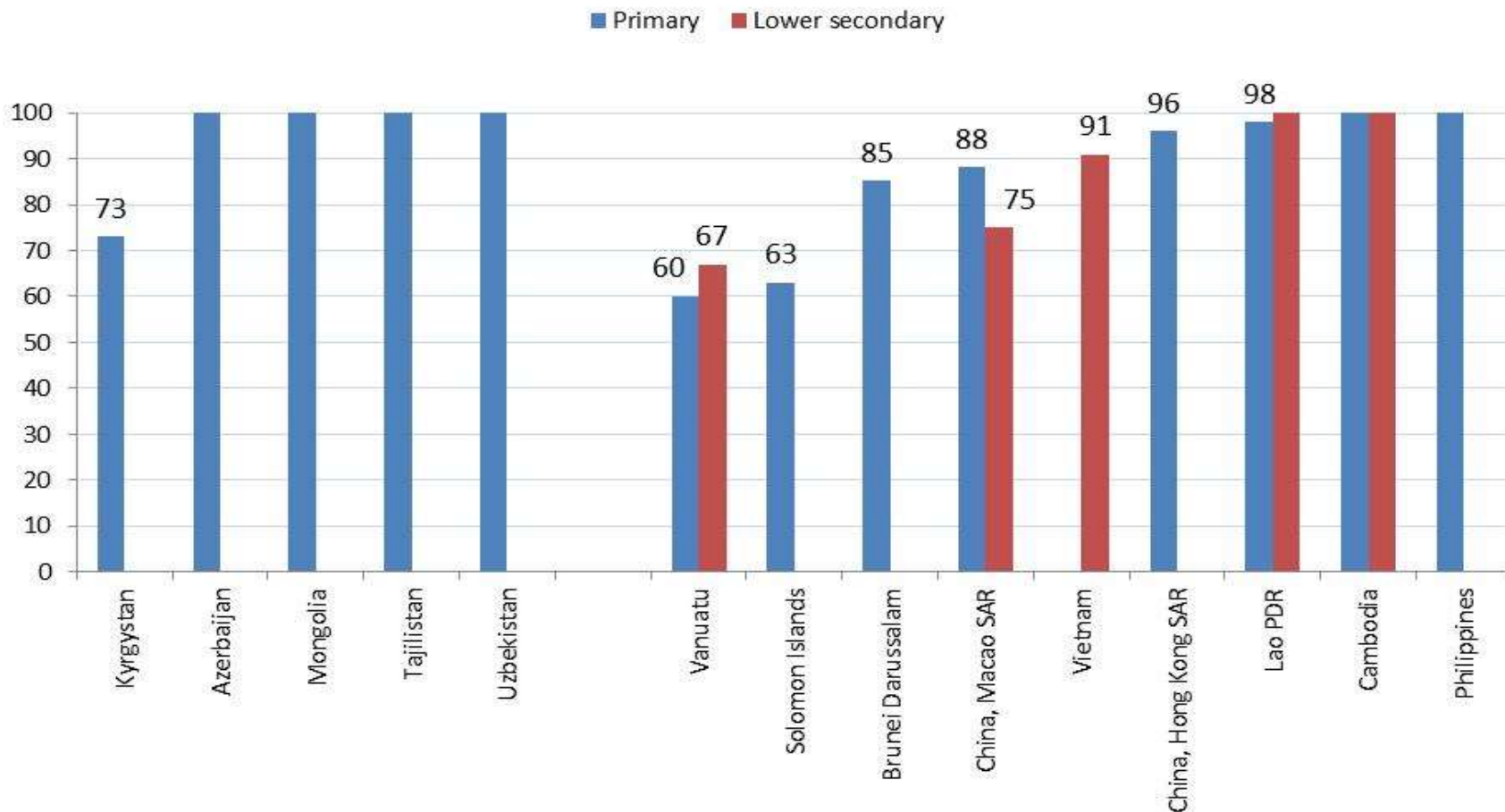
Proportion of educational institutions with Internet, fixed broadband and Internet-assisted instruction, primary and secondary, 2012 or LYA



Pupil-teacher ratios (PTRs), primary and secondary, 2013 or LYA

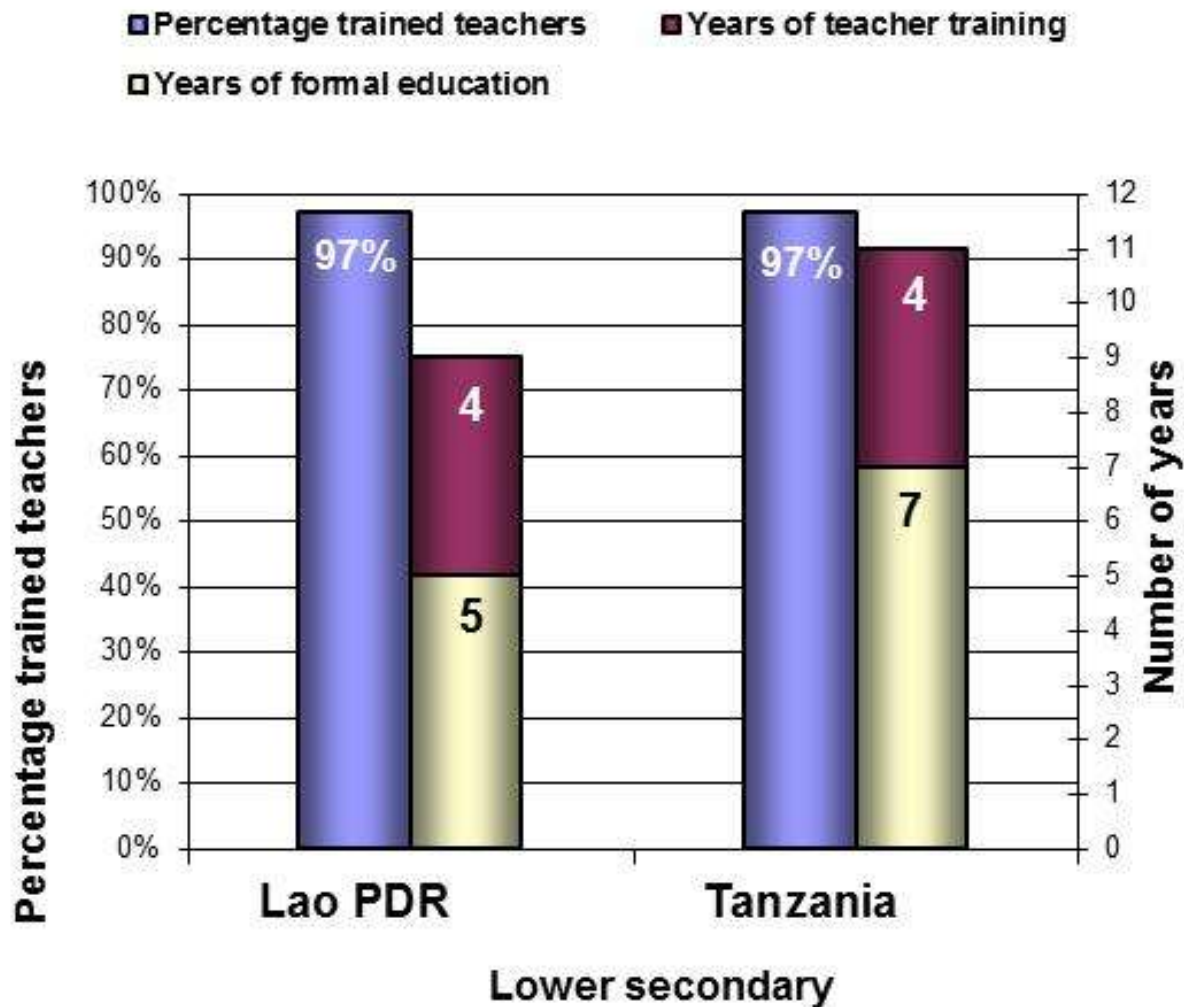


Proportions of trained teachers, 2013 or LYA



Teacher training varies among countries by educational level, duration, content: Indicator demonstrates countries' progress against their own internal standards and targets

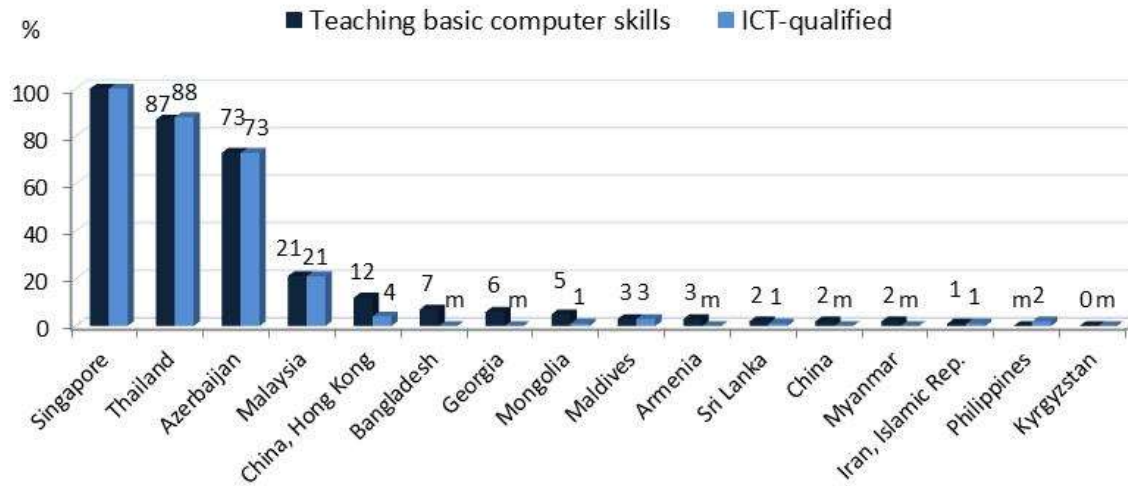
Trained teachers with lower secondary qualifications, 2012



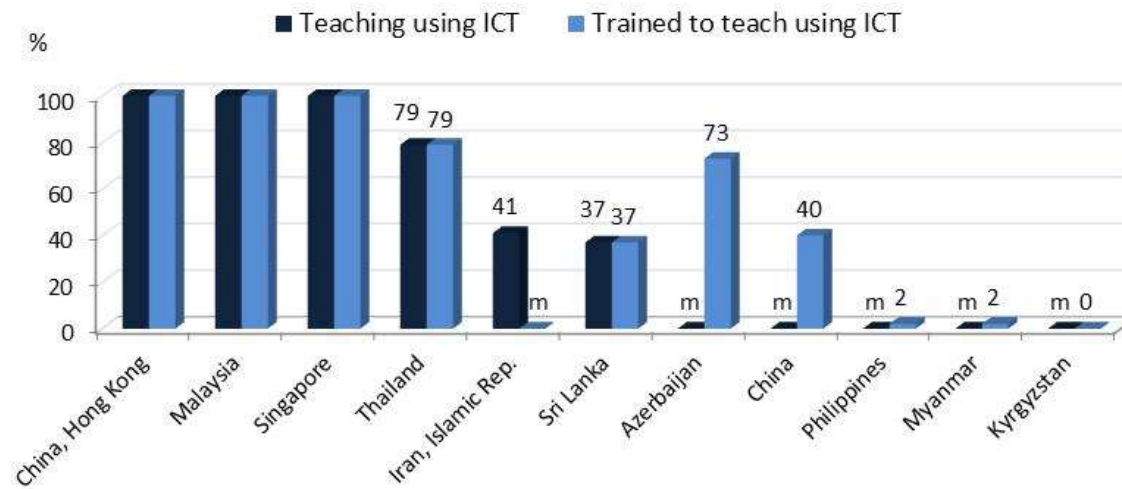
Teacher training/ usage of ICT

- 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 once 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!

Peter Wallet: p.wallet@unesco.org

ICT in education:

<http://www.uis.unesco.org/Communication/Pages/ict-education.aspx>

Data:

<http://www.uis.unesco.org/DataCentre/Pages/BrowseCommunication.aspx>