Central Asia Symposium on ICT in Education

How ICT can contribute to EMIS sustainability and data quality

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“A collection of component parts that include inputs, processes, outputs, and feedbacks that are integrated to achieve a specific objective. It is a system for managing a large body of data and information that can be readily retrieved, processed, analyzed, and made available for use and dissemination.” (Villanueva, 2003)
Paradigm shift in the international education agenda

MDG 2-Education For All was exclusively focused on access.

The expanded focus of SDG 4-Education 2030 means an expanded demand for education data as well.
Expanded demand for education data

Education data currently available or being collected at the country level still does not account for most of the new indicators of SDG 4.

Indicators with largest coverage pertain to enrolment and completion rates – both of which were the primary indicators used by MDG 2.
## Expanded demand for education data

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<thead>
<tr>
<th>Level</th>
<th>Enrollment</th>
<th>Graduates</th>
<th>Teachers' count</th>
<th>Teachers' training</th>
<th>Government expenditure</th>
<th>Household expenditure</th>
<th>Learning outcomes/skills assessment</th>
<th>Other surveys</th>
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*Data exist, usable, well defined, accessible and with very good coverage*

*Data exist, usable, well defined, accessible and with good coverage*

*Data exist, usable, well defined but would need extra efforts to compile nationally and report internationally*

*Some data exist but with limited coverage/quality/usability*

*No data/problematic data/require major developments and resources*
Expanded demand for education data

Given the integrated nature of the Sustainable Development Agenda, the education sector should draw data from and contribute data to other sectors.

(Le Blanc, 2015)
Some countries are still caught in a vicious circle of EMIS ineffectiveness... but ICT is one of the ways out.
## Building capacities for a more effective EMIS

### Technical capacity
- Realistic needs analysis
- Quality, reliable, and recurrently updated data
- Robust technical infrastructure

### Human resource capacity
- Technical awareness among the staff at all levels
- Sufficient staff to fulfil the responsibilities

### Policies, plans, and institutional structures
- Creating enabling environment for evidence-informed/based policy making
- Clear roles and responsibilities
Examples of the Recent Work on EMIS by UNESCO
The Conference focused on the importance of EMIS in improving the delivery of quality education and lifelong learning for all.

Importance of data collection to monitoring progress toward SDG-4

Discussed challenges faced by 20 selected Member States in collecting EMIS data (Uzbekistan was only participant from Central Asia).

The Conference also tackled the need to make data more inclusive, particularly to ensure the representation of vulnerable and marginalized populations.

The Conference provided a major peer-learning opportunity: countries were able to share the challenges and benefits of implementing an EMIS. In addition, it provided a platform for countries to share innovations and lessons learned, at both the strategic and the operational levels.
EMIS development has been going on since the 1960s*, and is still evolving...

*Data comes from the 2018 UNESCO-GPE EMIS conference paper currently in progress (N=15)
General path of EMIS development in select Member States*

**Paper-Based**
- Manual Compilation
- Public Sector for Administrative Purposes and Statistical Reporting

**Sub-sector annual data collection systems**
- Transactional systems for Human Resource Management and Financial Management

**Integrate, decentralize, and granulate data**
- Increased access to a wider range of stakeholders specific to their roles and responsibilities.
- Common coding and information standards.
- Greater focus systems towards the planning and management needs of institutions such as schools and universities

**Towards further Integration**
- Student information systems
- Alignment between different ministries such as the Ministry of Health and Ministry of Home Affairs

*Data comes from the 2018 UNESCO-GPE EMIS conference paper currently in progress (N=15)
Future directions for EMIS

- Community-based EMIS
- Sustainability of EMIS systems (funding, capacity etc)
- Social research and EMIS
- Considerations related to EMIS data collection
- Role of EMIS in integrated decision-making
- Cloud-based computing opportunities and challenges
There are several approaches to EMIS development, but the most prevalent approach is to develop customized solutions*

*Data comes from the 2018 UNESCO-GPE EMIS conference paper currently in progress (N=15)
Building human resource and technical capacity is crucial to ensuring ICT effectiveness in the context of EMIS*

*Data comes from the 2018 UNESCO-GPE EMIS conference paper currently in progress (N=15)
Development partnerships remain an important aspect of EMIS development*

*Data comes from the 2018 UNESCO-GPE EMIS conference paper currently in progress (N=15)
UNESCO’s technical assistance towards strengthening EMIS

EMIS Diagnostic Policy Review

The basic components of the Review are:

• An EMIS diagnostic to identify the problem of current EMIS and the needs. The diagnostic will cover the following elements:
  • Assess the skill and capacity of existing staff
  • Assess the technical infrastructure available from central office to school level
  • Identify data quality, training and infrastructure needs to enable EMIS reinforcement
  • Map out current EMIS-related processes and identify corresponding pain points
• An analysis of the EMIS-related factors and potential bottlenecks
• A set of prioritized EMIS policy recommendations intended to address the challenges faced; and
• A proposal of UNESCO follow-up activities that would help the country to enhance their EMIS capacities in implementing the 2030 Education Agenda.
And also... OpenEMIS
Conclusions

1. EMIS is a **system**, and not only a software platform or solution. The more important components are **linked to human capacities**.

2. EMIS software has to **interlink data** from different sources: schools, NFE, ECCE, TVET, higher education, teachers or funding – even **data from other sectors** (e.g., labor, health).

3. EMIS is increasingly becoming relevant also for **international comparisons and monitoring** – it has to comply with **international standards**.

4. EMIS has to be **evolutionary**: grow as the demands grow, as it is the case with SDG 4 targets.

5. **EMIS never becomes sustainable if it is donor-driven** or design or attached to an individual program or externally-funded project.
Thank you

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