Re-imagining the future of Education Management Information Systems

Ré-imaginer l'avenir des systèmes d'information pour la gestion de l'éducation
Day 3

Introduction to day 3 and Recap of Seminar 2: Gwang-Chol Chang, UNESCO

Intro to breakout sessions: Satoko Yano, UNESCO

Session 4: Technologies and architectures for future EMIS (Parallel session 1)

Introductory Presentation: Pierre Chapelet, UNESCO

Session 5: Enabling environment for future EMIS (Parallel session 2)

Introductory Presentation: Satoko Yano, UNESCO

Session 6: Next steps

Gwang-Chol Chang, UNESCO
Futures of EMIS
Re-imagining data systems beyond head counts
Day 1 Takeaways – Lessons Learned from COVID-19

Re-imagining Education Management Information Systems

**Opening Remarks**
- Stefania Giannini
  Assistant Director-General, Education
  UNESCO
- Alice Albright
  Chief Executive Officer
  GPE Secretariat
- Dai Shen
  Senior Vice-President
  Weidong Cloud Education Group
- Gwang-Choi Chang
  Chief, Section of Education Policy
  UNESCO

**Country Experiences**
- Li Yanli
  Department of Development
  Ministry of Education, China
- Leticia Miras
  Director of Educational Information
  Ministry of Education, Argentina
- Husein Abdul-Hamid
  Senior Education Specialist
  The World Bank
- Nicolas Reuge
  Senior Education Adviser
  UNICEF
- Abdullaev Alisher
  Head of ICT Department
  Ministry of Higher & Secondary Specialized Education, Uzbekistan
- Utkir Khamdamov
  Professor
  Tashkent University of Information Technology
- Margaret Irving
  Education Economist
  GPE Secretariat
- Allassane Ouedraogo
  Education Specialist
  UNICEF MENARO
- Silvia Montoya
  Director
  UNESCO-USID
- Tao Zhan
  Director
  UNESCO-IITE

**Session 1.2: Partner Experiences**
- Moderator

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1. **Real-time data**
2. **EMIS to support learning** in hybrid systems
3. **Data system to capture processes** (e.g., attendance)
4. **Individual data**
5. **Leveraging technologies for better integration & interoperability**
## Day 2 Takeaways – Looking into the Future of EMIS

### 4 Dimensions

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning-oriented</td>
<td>Data systems that integrate EMIS and LMS in an EMIS marketplace</td>
</tr>
<tr>
<td>User-oriented</td>
<td>Systems that respond to contexts, needs and demands</td>
</tr>
<tr>
<td>Local Ecosystems</td>
<td>Vision, framework, partnerships, ownership, financing, capacity...</td>
</tr>
<tr>
<td>Technologies</td>
<td>Leveraging technologies for better management, relevance, integration &amp; interoperability</td>
</tr>
</tbody>
</table>

### Futures of EMIS

#### Day 2
27 May 2021, 13:30 - 15:30 (CET)

**Introduction to Day 2**

- **Satoko Yano**
  Programme Specialist, Section of Education Policy
  UNESCO

**Moderator (Session 2)**

- **Stéphan Vincent-Lancrin**
  Senior Analyst and Project Leader
  OECD

**Moderator (Session 3)**

- **Borhene Chakroun**
  Director, Division for Policies and Lifelong Learning Systems
  UNESCO

**Session 2: Capacities & Approaches**

- **Shiloh Naiken**
  Chief Information Officer
  Department of Basic Education, South Africa

- **Francesca Pinna**
  Education Project Officer
  UNESCO

- **Alpha Bah**
  Head of EMIS and ICT units
  Ministry of Basic and Secondary Education, The Gambia

- **Ruba Omari**
  Director
  The Queen Rania Center for Education and Technology, Jordan

**Session 3: Frontier Technologies**

- **Avi Sharabi**
  Data Partner
  KPMG Sydney

- **Dai Shen**
  Senior Vice-President
  Weidong Cloud Education Group

- **Ali Al Yafei**
  ICT Advisor
  Minister of Education, UAE

- **Stéphan Vincent-Lancrin**
  Senior Analyst and Project Leader
  OECD

- **Louise Macquet**
  Cloud Business Development Lead
  Microsoft
Enablers for the Future EMIS - Key Takeaways for Day 3

1. Connected Systems
2. Access to external information
3. Digital capability
4. Actionable data
5. Security and privacy
6. Engagement with the community

Enabled By

- Increased access to information
- Availability of advanced analytics
- Machine learning and utilizing digital delivery
Day 3 Overview and Objectives – What should the Future EMIS look like?

Re-imagining Education Management Information Systems

**Day 3** 28 May 2021, 13:30 - 15:30 (CET)

**Introduction to Day 3**
- Gwag-Chol Chang
  - Chief, Section of Education Policy
  - UNESCO
- Borhene Chakroun
  - Director, Division for Policies & Lifelong Learning Systems
  - UNESCO
- Pierre Chapelet
  - Programme Specialist, Section of Education Policy
  - UNESCO
- Margaret Irving
  - Education Economist
  - GPE Secretariat

**Session 4: Technologies & Architectures**
- Knut Staring
  - Education Domain Lead
  - OHS2, University of Oslo
- Louise Macquet
  - Cloud Business Development Lead
  - Microsoft
- Jon Kapp
  - Executive Director, Community Systems Foundation
  - Open EMIS

**Session 5: Enabling Environment**
- Satoko Yano
  - Programme Specialist, Section of Education Policy
  - UNESCO
- Shiloh Naiken
  - Chief Information Officer
  - Department of Basic Education, South Africa
- Alejandro Vera
  - Programme Specialist
  - UNESCO Santiago Office
- Adoumatar Noubatour
  - Coordinator, Pan-African Institute for Education for Development
  - African Union

**Concluding Remarks**
- Moderator (Session 4)
- Moderator (Session 5)

**3 Ingredients**

1. Key standards, principles, and values of future EMIS from the perspectives of technologies and architectures

2. Key standards, principles, and values of future EMIS from the perspectives of enabling environment

3. Building a Community of practice to support envisioning and operationalizing future EMIS
Thank you

Learn more: [www.unesco.org/education](http://www.unesco.org/education)

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Gwang-Chol Chang, Chief, Section of Education Policy
UNESCO
GC.Chang@unesco.org
Day 3 breakout sessions (13:45 – 14:45)

What should be the key principles and values of future EMIS?

How can we establish an open and vibrant community to facilitate envisioning and operationalization of future EMIS?

Breakout Session 1
Technologies and Architectures

Breakout Session 2
Enabling Environment
Joining breakout sessions

If you are joining Breakout Session 1 (Technologies and Architectures), please stay on.

If you are joining Breakout Session 2 (Enabling Environment), please join a separate meeting from the below link

https://unesco-org.zoom.us/j/94725028513
Passcode: 645644

After the session, Breakout Session 2 participants are requested to come back to the main meeting room using the same link you have been using for the last three days (the link you received after registration).

If you are following us live on YouTube, the streaming is only available for Breakout Session 1 (Technologies and Architectures). The recording of Breakout Session 2 will be made available immediately after the session.
Session 4: Technologies and architectures for future EMIS (Parallel session 1)
Futures of EMIS
Re-imagining data systems beyond head counts
Context: Defining EMIS for 2021

Call for Consensus on Definition

*Integrated & inclusive, adaptable & accessible, scalable & sustainable*

Collects, processes, manages, and transforms **data into usable information**

Supports **management** and administration, planning, policy formulation, and monitoring and evaluation of education

Enabled by **technology**, institutional **capacity**, strong **legal frameworks**, and **integration** across education system and with social sectors

Supports **equitable teaching and learning** and the improvement of learning outcomes for all by including vulnerable learners and distance learning in data collection
### How to meet EMIS expectations

<table>
<thead>
<tr>
<th>Enabling environment</th>
<th>Technologies and architectures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strengthen legal, political, and institutional frameworks</td>
<td>Big Data</td>
</tr>
<tr>
<td>Build human, technical, institutional and organizational capacities</td>
<td>Artificial Intelligence</td>
</tr>
<tr>
<td>Increase data coordination and support data collection training</td>
<td>Blockchain</td>
</tr>
<tr>
<td>Recognize flexible learning models</td>
<td>Non-education data system integration (geospatial, climate, health, etc.)</td>
</tr>
</tbody>
</table>
Other Buzz words

Cloud
Data Lake
Data standards
Adaptability
Local hosting
Data privacy
Data warehouse
Transactional systems
Scalability
API
integration
opensource Realtime
Main EMIS challenges among the registered participants (approx. 500 ppl)

**Figure 1a: Distribution of main challenge (Income groups)**

<table>
<thead>
<tr>
<th>Income Level (group)</th>
<th>Main challenge linked to EMIS</th>
<th>% of main challenge linked to EMIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>High income</td>
<td>Connectivity</td>
<td>17.5</td>
</tr>
<tr>
<td></td>
<td>Devices</td>
<td>151</td>
</tr>
<tr>
<td></td>
<td>IT knowledge and capacity</td>
<td>106</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>Statistical knowledge and capacity</td>
<td>10.00%</td>
</tr>
</tbody>
</table>

**Figure 1b: Distribution of main challenge (Income groups)**

*Main challenge linked to EMIS:
- Connectivity
- Devices
- Funding
- IT knowledge and capacity
- Multiple and uncoordinated data...
- Other
- Statistical knowledge and capacity*
What should Future EMIS look like?

Proposed Key Principles

- Open, complete and inclusive data
- Interoperability and integration
- Bias-free algorithms
- Data privacy and legal ownership
- Affordability and accessibility
- Scalability and sustainability
- User-oriented
- Focus on local ecosystems and capacity development
Building a community of practice to support envisioning and operationalizing future EMIS

**Proposed Objectives**

- Standard-setting for future EMIS
- Knowledge generation and dissemination
- Sharing of best practices and mutual learning
- Facilitating IT development and connectivity
- Capacity development & supporting the EMIS transformation paths
Panel discussion

Re-imagining Education Management Information Systems

Day 3  28 May 2021, 13:30 - 15:30 (CET)

Session 4: Technologies & Architectures

1st intervention:
From your experiences, what should be the key principles and values of future EMIS from the perspective of technologies and architectures?

2nd intervention:
What do you think is needed most for developing countries to leap-frog and benefit from advanced technologies?

3rd intervention:
What do you think we can do to create an open and vibrant community to facilitate development of technologies and architectures of future EMIS(s)?

Please share your views on:
https://jamboard.google.com/d/1uI05H_8vzd2nE2nPjaFmZso7owE2YsM_0fntsUYEral/viewer?f=0
Using Jamboard (1)
Using Jamboard (2)
Thank you

Learn more: www.unesco.org/education

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Satoko Yano, Programme Specialist
Section of Education Policy
UNESCO
s.yano@unesco.org
Session 5: Enabling environment for future EMIS (Parallel session 2)
Futures of EMIS
Re-imagining data systems beyond head counts
Context: Defining EMIS for 2021

Call for Consensus on Definition

Collects, processes, manages, and transforms data into usable information.

Supports management and administration, planning, policy formulation, and monitoring and evaluation of education.

Enabled by technology, institutional capacity, strong legal frameworks, and integration across education system and with social sectors.

Supports equitable teaching and learning and the improvement of learning outcomes for all by including vulnerable learners and distance learning in data collection.
### How to meet EMIS expectations

<table>
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<td>Recognize <strong>flexible learning</strong> models</td>
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</table>
Main EMIS challenges are more around enabling environment rather than technologies.

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<tbody>
<tr>
<td>High income</td>
<td>Connectivity</td>
<td>17.14%</td>
</tr>
<tr>
<td></td>
<td>Devices</td>
<td>4.60%</td>
</tr>
<tr>
<td></td>
<td>Funding</td>
<td>5.32%</td>
</tr>
<tr>
<td></td>
<td>IT knowledge and capacity</td>
<td>6.04%</td>
</tr>
<tr>
<td></td>
<td>Multiple and uncoordinated data</td>
<td>23.83%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>9.38%</td>
</tr>
<tr>
<td></td>
<td>Statistical knowledge and capacity</td>
<td>23.13%</td>
</tr>
</tbody>
</table>

**Figure 1b: Distribution of main challenge (Income groups)**

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>High income</td>
<td>Connectivity</td>
<td>23.43%</td>
</tr>
<tr>
<td></td>
<td>Devices</td>
<td>22.09%</td>
</tr>
<tr>
<td></td>
<td>Funding</td>
<td>19.68%</td>
</tr>
<tr>
<td></td>
<td>IT knowledge and capacity</td>
<td>19.38%</td>
</tr>
<tr>
<td></td>
<td>Multiple and uncoordinated data</td>
<td>13.75%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>13.75%</td>
</tr>
<tr>
<td></td>
<td>Statistical knowledge and capacity</td>
<td>13.75%</td>
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What should Future EMIS look like?

Proposed Key Principles

- Open, complete and inclusive data
- Interoperability and integration
- Bias-free algorithms
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Building a community of practice to support envisioning and operationalizing future EMIS

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- Facilitating IT development and connectivity
- Capacity development & supporting the EMIS transformation paths
Panel discussion

Day 3  28 May 2021, 13:30 - 15:30 (CET)

Breakout session 2: Enabling Environment

1st intervention:
From your experiences, what should be the key principles and values of future EMIS?

2nd intervention:
What do you think are the main challenges for countries to “future-proof” their EMIS?

3rd intervention:
What do you think we can do to create an open and vibrant community to facilitate knowledge generation/sharing and mutual learning for creating an enabling environment for future EMIS(s)?

Please share your views on:
https://jamboard.google.com/d/1I7U4gxYsVjLZevCGfKCb7xY_yGbrCP1QgAK3-BH8l7w/viewer?f=0

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Margaret Irving
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Using Jamboard (1)
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Thank you

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Section of Education Policy
UNESCO
s.yano@unesco.org
Futures of EMIS
Re-imagining data systems beyond head counts
Next Steps: International CoP

3-day EMIS Seminar
May 26, 27, 28, 2021

Draft TORs
June-July 2021

Expression of Interest/Call to join
July-Aug 2021

Launch of CoP
Sep 2021
Next Steps: Call for partnerships for further discussion

- Global
- Regional
- Sub-regional
- National
Next Steps: UNESCO Seminar Report

A report with the proposal for the key principles and values of future EMIS, reflecting the discussions will be published.

Link to draft Report
Next Steps: UNESCO Data challenge – Call for ideas

Data challenge on transforming data into actionable insights

Call for ideas:
What challenges are you facing that can be tackled through innovative use of data?

Teams will compete to tackle selected challenges

Link to survey
Thank you

Learn more: www.unesco.org/education

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