Data is a key building block for the formulation and implementation of effective education policy

- However, **producing education data might be costly** in terms of human and financial resources
- Thus, policymakers **may not see the value** in allocating these resources towards data production
- Resulting in **insufficient support** for education data systems
- **Vicious data cycle** should be changed to good quality data, strong support virtuous cycle
- **Sustainable Development Goals (SDGs)** are tracked and met by reporting on and monitoring **country-level data**
Education practitioners must understand the importance of investing in data and take advantage of all the data ecosystem...

...in order to create a cycle of increased investment in data collection, better quality data production, and better data-driven policies.

Large development targets like SDGs are tracked and met by reporting on and monitoring country-level data. The agenda 2030 called for the use of multiple sources to monitor progress in the SDG targets. This calls for sounds data strategies that breaks silos.
There are 4 distinct sources of education data:

- Administrative Records
- Learning Assessments
- Financial & Expenditure
- Surveys & Population Censuses
Administrative data includes information on schools, teachers and students

Most of this information is available through an Educational Management Information System (EMIS) managed by Ministries of Education.

Most countries use the ‘school-census approach’ to collect information.

Brazil’s Censo Escolar Federal (Federal School Census), is the largest in Latin America and the Caribbean, collecting data on over 47 million students (Montes, 2022).
Administrative data plays a crucial role in addressing a wide range of policy questions and monitoring progress towards SDG4

- What is the average student-teacher ratio by school level?
- How are schools distributed across the country?
- Are children able to complete school?
- What is the impact of migration on the education system?
- How to improve disability policies and what type needs more attention?

Fiji’s EMIS (FEMIS) allows for individual-level monitoring of students throughout their school years and provides timely feedback to improve learning outcomes.

FEMIS collects data on a student’s biodata, families, daily attendance, learning outcomes, subsidy programs and disciplinary action.
Financial and expenditure data encompass details about the allocation and utilization of financial resources in education.

It often comes from administrative records gathered by the Ministry of Finance, Ministry of Education or National Statistical Offices.

Financial and expenditure data helps policymakers understand how funds are being utilized and whether they are effectively contributing to their National Education Agendas and SDG4 objectives.

**FINANCIAL & EXPENDITURE**

**Resources**
- Sources of funding (private/public)
- Total Expenditure
- Type of Expenditure (current/capital)
This information can help respond several policy questions regarding education expenditure and financing:

- Who funds education?
- How are different education levels financed?
- What is the average financing and cost per student?
- How much is allocated to teacher salary
- How much is allocated to capital expenditure (i.e., school infrastructure?)
Household surveys and population censuses collect data on population and household demographics and socioeconomic factors.

Most surveys and censuses are conducted by National Statistic Offices, with little coordination with other line Ministries. They are the only source of data on those outside the formal education system, and provide context for education planning, including the socioeconomic factors that may influence educational outcomes.
Household survey data provides a comprehensive foundation for addressing crucial policy questions in the realm of education, including:

- Do all kids have access to school?
- Do the kids *stay* in school? Why or why not?
- How are labor market outcomes related to educational attainment?
- What is the adult literacy rate?
- What factors contribute to the incidence of out-of-school children?

In Nigeria, approximately 10.5 million children are not in school.

In the north, more than half of Nigerian girls are out of school.

Household surveys reveal that economic barriers and socio-cultural factors discourage school attendance, especially for girls (UNICEF, 2023).
Learning assessments measure students’ knowledge and skills

- National school-based assessments
- Test scores
- Student socioeconomic
- Characteristics
- Teacher / parent surveys
- International assessments

- National assessments are often conducted by the Ministry of Education
- Several international organizations conduct regional and international assessments.
- Learning assessments help monitor the quality of education.
- **Note:** Countries also administer Public Examinations, that are individual high stakes exams. All public exams are assessments but not all assessments are public exams.
Some of the policy questions that can be addressed using data from learning assessments include:

- Are children learning?
- Is there any difference in academic performance between boys and girls?
- Is there any difference in academic performance across socioeconomic groups?
- Are teachers qualified? Does teacher training affect learning outcomes?


Socioeconomic status was a strong predictor of academic performance, explaining 12 percent of the differences in performance.
The ability to provide value-added analysis by combining data sources and/or linking different databases using a common identifier is essential to generate high-quality data.

Data from administrative records, surveys and censuses as well as learning assessments can be combined to further inform education policy design:

- Are learning outcomes related to overcrowded classrooms?
  - Administrative data + Learning Assessments

- What policies can be used to keep children in school?
  - Administrative data + Household survey data + Data from other Ministries

- How can we ensure the effective and efficient allocation of resources to schools and students with the greatest needs?
  - Administrative data + Financial and expenditure data + Household survey data
In Brazil, since 2007, it is possible to access federal government databases to gather information on Bolsa Família (Family Allowance) and the Benefício de Prestação Continuada (Continued Benefit Provision).

Verification is also possible with the Cadastro Geral de Pessoa Física (CPF, General Registry of Individuals) to confirm personal data, as well as cross-referencing between the Educacenso and Censo Escolar (School Census).

In 2015, a project in Bonsaaso, Ghana used mobile phones to collect real-time data and provide monthly feedback to schools and district education offices. The data showed that schools without full-time teachers were also those where students lacked basic reading skills.

As this information was combined with geographic data at the district-level, the analysis revealed these schools were located in areas that lacked basic infrastructure, suggesting teachers were reluctant to work there (Broadband Commission for Sustainable Development. 2020).
Policymakers must strive to generate quality data that is relevant, comparable and accessible

<table>
<thead>
<tr>
<th>RELEVANT</th>
<th>COMPARABLE</th>
<th>ACCESSIBLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the data source include the required information?</td>
<td>...over time?</td>
<td>...to all users/open access?</td>
</tr>
<tr>
<td>Is the data available for the groups of interest (i.e., school, student, teacher, private and/or public schools etc.)?</td>
<td>...across countries/provinces?</td>
<td>...in a user-friendly format?</td>
</tr>
<tr>
<td>When was the data published (latest year available)?</td>
<td></td>
<td>...in a timely manner?</td>
</tr>
</tbody>
</table>

Is it interoperable with other data sources via a common identifier?
Given the significance of the Education Data Ecosystem, special attention ought to be channeled to the potential challenges that prevent the production of quality data and its widespread use:

- **Expertise**: Shortage of skilled human capital
- **Top Down Communication**: Lack of understanding of data product on process and best practices of speed over quality
- **Misaligned Incentive**: Value of data production not evident
- **Technology**: Reliance on analog methods and/or outdated technology, inadequate country infrastructure
- **Funds**: Limited resources for data collection or fund in-house EMIS, leading to outsourcing

**Solutions**
- **Capacity-building**
- **Technology**
- **Resources**
Some resources and initiatives include:

The Global Proficiency Framework (GPF) standardizes the minimum proficiency levels (MPLs) for students in grades 1-9 in reading and math.

- **The International Standard Classification of Education (ISCED)** allows the comparison of education systems across countries and the production of cross-nationally comparable data.

- Conceptual, methodological and reporting frameworks for various SDG 4 indicators are listed in the [UIS Monitoring Framework site](#).

- **The Learning Data Toolkit: Measure What Matters** aims to facilitate cross-nationally comparable data reporting on learning outcomes and provide countries with internationally-aligned, but context-specific, options to report on indicator SG4.1.1.
UIS collaborates with countries to facilitate data reporting via methodological guidance, standard-setting, and capacity-building

- The **Global Alliance to Monitor Learning (GAML)** supports national strategies for learning assessments and creating globally comparable indicators and methodologies.

- Part of the work includes the **Global Coalition for Foundational Learning**, the development of the **Policy Linking methodology** and the **Assessment for Minimum Proficiency Levels (AMPL)**. Both tools are meant to facilitate monitoring of SDG 4.1.1 and produce reliable global benchmarks.

- **Rosetta Stone** is a methodological program for countries who seek to improve the global comparability of international large-scale assessments (ILSAs), offering strategies to feed ILSA results into SDG indicator 4.1.1.
Fit-for-purpose Data Ecosystems

- The sustainability of the education data ecosystem relies on a country’s commitment and ability to identify, produce, and analyze data themselves.
- Extensive utilization of data can trigger a positive feedback loop, fostering increased investment and demand for data.
- Countries should strive to establish sustainable ‘fit-for-purpose’ data ecosystems that are rooted with national education policies and priorities.
THANK YOU

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