

Integrated Education Data and Analytics System for Internal Monitoring and Evidence-Based Management in Georgia

Strategic Planning for Sustainable Education Policies

ETF Regional Seminar

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Integrated Education Data and Analytics System for Internal Monitoring and Evidence-Based Management

■ Why this topic was selected

Georgia's education system generates a large volume of data across general, vocational and higher education.

The full potential of these data is not yet used for strategic monitoring, analysis and management decisions.

The topic responds to a practical policy need: moving from fragmented and sector-based reporting towards integrated analytical monitoring.

The reform should support internal monitoring, reform assessment and better allocation of resources.

■ Core reform idea

Create an integrated education data and analytics ecosystem that:

connects key data sources and priority datasets;

supports automated reporting and internal monitoring;

links monitoring indicators to reliable data sources;

enables timely, evidence-based management decisions.

Data



Integration



Dashboards



Monitoring



Decisions

from data collection to
evidence-based management

2 Current Situation: Data Exists, but It Is Not Fully Used

Georgia already has a strong data foundation. The next challenge is to connect, standardise and use it more systematically for internal monitoring and evidence-based management.

Existing systems managed or supported by EMIS

General Education MIS

Schools, students, educational history, mobility, teachers, workload, salary, textbooks

Vocational Education MIS

Institutions, registrations, students, programmes, statuses, staff

Higher Education MIS

Institutions, students, student status, academic staff

Electronic School Journal

Student academic performance and attendance

Current gap and conclusion

Coverage gap

Preschool education data is not yet covered through the same level of systematised data infrastructure.

Main issue

The issue is not the absence of data, but limited integration, standardisation and analytical use.

Policy need

Data should support internal monitoring, reform assessment and timely management decisions.



3 Problem Analysis: What Needs to Change?

Main policy problem

Education data is collected in separate systems and is not yet fully integrated into one analytical environment. The Ministry can see what is happening in individual sectors, but it is more difficult to understand why it is happening at system level.



Key manifestations

- The full learner pathway is not easily visible across education levels.
- School results are difficult to connect with vocational, higher education or labour market outcomes.
- Cross-sectoral data links are limited, for example with employment, social protection or health data.
- Data formats differ across systems, including Oracle, SQL and Excel-based sources.

Strategic consequence

- Some reports still require manual collection, cleaning and processing.
- Strategy monitoring indicators are not always directly connected to reliable and automated data sources.
- Fragmented data affects internal monitoring, reform evaluation, resource planning and timely decision-making.

4 Policy Framework: Goal, Objectives and Indicators

Overall goal

Create a secure, integrated and user-oriented education data analytics ecosystem that strengthens internal monitoring and evidence-based decision-making in Georgia's education sector.

Objective 1

Strengthen data governance and interoperability

Indicator Priority datasets mapped and data dictionary developed

Deadline Q4 2027

Objective 2

Develop integrated data infrastructure

Indicator Data warehouse architecture designed and priority data flows defined

Deadline Q4 2027

Objective 3

Improve internal monitoring and analytical reporting

Indicator Selected monitoring indicators linked to verified data sources and dashboards

Deadline Q4 2028

Objective 4

Establish role-based access and practical use

Indicator Access model approved, priority users trained and dashboards used in routine monitoring

Deadline Q4 2029

Four integrated components

1

1. Data governance

Dataset mapping
Common data dictionary
Ownership, access and data protection rules

2

2. Technical infrastructure

Data warehouse
ETL processes
BI dashboards in Power BI and/or Qlik Sense

3

3. Internal monitoring

Priority indicators
Automated reporting templates
Analytical summaries for management decisions

4

4. Access and capacity

Role-based user access
Different views for user groups
Staff training and practical guidance

Priority activities, 2027–2029

Q2 2027

Map datasets and define priority monitoring questions

Q4 2027

Develop data dictionary and design DWH architecture

Q2 2028

Prepare interoperability framework and access model

Q4 2028

Connect priority data flows and pilot dashboards

Q4 2029

Expand automated reporting and complete staff training cycle

6 Priority Activities by Phase, 2027–2029

Indicative three-year implementation path for the working policy package



Phase 1 | Preparation and scoping

Map systems and datasets; define priority policy questions; identify data owners, users, legal and technical requirements.

Phase 2 | Governance and design

Develop data dictionary; prepare interoperability framework; design role-based access model and data warehouse architecture.

Phase 3 | Development and piloting

Connect priority data flows; develop Power BI/Qlik Sense dashboards; pilot with ministry departments and selected SSIPs.

Phase 4 | Expansion, staff training and analytical use

Expand automated reporting; complete staff training; strengthen routine use of dashboards for monitoring and decisions.

Main value for the Ministry

Move from descriptive reporting to analytical monitoring and evidence-based management.

1 Learner pathways
What are the learner pathways from general education to vocational and higher education?

2 Risk identification
Which students, schools, municipalities or regions show higher risks of low performance, absenteeism or dropout?

3 Teacher and school needs
How are teacher workload, qualification, status and remuneration connected with school-level needs?

4 Infrastructure planning
Which infrastructure needs are most urgent and how should they be prioritised?

5 Monitoring performance
Which internal monitoring indicators are improving, stagnating or worsening?

6 Resource allocation
How can resources be better allocated based on actual student, school and regional needs?

7 Reform impact
How can the impact of selected reforms be tracked through data over time?

8 Management decisions
How can dashboards and reports support faster internal management decisions?

8 Main Challenges Encountered During Preparation

The preparation process helped translate a broad technical idea into a realistic policy and monitoring framework.

01 Narrowing the topic

The initial idea was broad. The main challenge was to narrow it from a general “big data” concept to a realistic framework for internal monitoring and management.

02 Balancing technical and policy logic

The framework needed to show not only the technical solution, but also its policy value for monitoring, reform assessment and resource allocation.

03 Coordination across institutions

Different departments, legal entities and education institutions produce, manage and use data. Clear coordination and role distribution are necessary.

04 Budget, resources and access

Costing remains difficult before the full scope is defined. The system must also ensure safe data use, differentiated access and adequate staff training.

Key implication: the policy package must be phased, governed and connected to real monitoring needs.

Thank you

The proposed framework aims to help Georgia use existing education data more effectively, strengthen internal monitoring, and make education policy decisions evidence-based, timely and targeted.

