

PRODUCING INTERNATIONALLY COMPARABLE EDUCATION EXPENDITURE DATA: DATA SOURCES, COVERAGE, AND CHALLENGES

The document presents current situation of data availability, data coverage and gaps for two international benchmarking indicators on education expenditure- share of public education expenditure as a percentage of total public expenditure and share of public education expenditure as a percentage of total GDP. The paper analyses the different sources of data for education expenditure e.g. UIS, BOOST, Public Expenditure Review (PER), Education Country Status Report (CSR), NER etc. and their frequencies in producing the indicators. The paper also presents the key issues and challenges in producing data for these two indicators and highlighted the need to expedite to improve the situation. It also provides some recommendations to fill the gaps.

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1. Education Expenditure data: Key International benchmarks and data requirement

How much do countries spend on education? Where does the funding come from, and how is it spent? are the fundamental questions that education policymakers, planners and stakeholder often tries to look for. Education expenditure data are equally important as student and teacher data in developing credible education policies and plans. The data on education expenditure helps to understand how countries have prioritized education. Quality finance data is important to assess and monitor the efficiency and accountability of the use of resources. To provide equal opportunities to all in every level of education, governments should invest enough in education. To ensure that countries have enough financial resources to provide education for all without pushing out anyone, UNESCO and its partner agencies have established an International benchmark that countries spend at least 4-6 % of the GDP and 15-20% of its total government spending in education. Despite pledges to increase funding for SDG 4, many countries are unable to quantify how much they are currently spending on education in totality across all the government ministries, different levels of government, and in households.

The UIS has the mandate to collect, compile, produce, and disseminate internationally comparable data on education finance and report on these 2 international benchmark indicators among others:

- The proportion of education expenditure as a share of total GDP of the country
- The proportion of education expenditure as a share of total government expenditure

The calculation method for both indicators is simple and straight forward.

<p>Expenditure on education as % of total government expenditure</p> $= \frac{\textit{Total expenditure on education from the government}}{\textit{Government expenditure from all sectors}}$ <p style="text-align: right;"><i>Total government expenditure from IMF data</i></p> <p>Government expenditure on education as % of GDP</p> $\frac{\textit{Total expenditure on education from the government}}{\textit{Total expenditure on education from the government}}$
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Looking at the formula, to calculate both the indicators, the numerator is common i.e. total expenditure on education from the government which needs to be collected from the Member States. It looks simple data, however, to bring a complete picture of government expenditure in education in a given country, national statisticians must gather data from various government Ministries which fund for education, often using different data classification systems. Many of the countries especially in the countries where the financial data system is weak often face a big challenge in compiling data on education finance to calculate the indicators.

To manage education finance data, a broader understanding of national education financing mechanisms is needed. In most countries, government funding on education does not mean sole funding from the Ministry of Education. Other sectors labor, health, children, and women welfare, etc. will likely have financial contributions to various education programmes. An effective and efficient data system

puts all education finance data in one place for systematic monitoring of education spending. Similarly, expenditures must be tracked by levels of education to understand how and to what extent these different levels of education are being financed. This information can help policymakers and planners in ensuring that the policies and decisions are evidence-based.

Currently, there are around two third of the country data have been available for the two international benchmark indicators in last 5 years which is not that bad. However, looking at the trend data (at least 3 data points in last 5 years), there are less than one third of the country globally have trend data in last 5 years (**Table 1**). In terms of sub regions, Central and Southern Asia sub region has the highest % of countries reporting on these indicators with 85% data availability in last 5 years followed by Sub Saharan Africa with 77% of data availability in last 5 years. Northern Africa and Oceania regions have lowest percentage of countries reporting on the indicators.

Table 1. Availability of education expenditure indicators and their trend by region (%)

Indicators	World		Africa (Northern)		Africa (Sub-Saharan)		Asia (Central and Southern)		and South-eastern)		Asia (Western)		and the Caribbean		America and Europe		Oceania	
	Data availability in last 5 years (%)	Trend (%)	Data availability in last 5 years (%)	Trend (%)	Data availability in last 5 years (%)	Trend (%)	Data availability in last 5 years (%)	Trend (%)	Data availability in last 5 years (%)	Trend (%)	Data availability in last 5 years (%)	Trend (%)	Data availability in last 5 years (%)	Trend (%)	Data availability in last 5 years (%)	Trend (%)	Data availability in last 5 years (%)	Trend (%)
Public expenditure in education as a % of total government expenditure	63.6	30.4	14.3	0.0	77.1	58.3	85.7	71.4	61.1	33.3	44.4	16.7	61.9	31.0	74.5	10.6	30.0	0.0
Public expenditure in education as a % of total GDP	63.6	30.4	14.3	0.0	77.1	58.3	85.7	71.4	61.1	33.3	44.4	16.7	61.9	31.0	74.5	10.6	30.0	0.0

Note: Trend (%) is the percentage of the countries which have 3 data points for last 5 years.

2. Key data sources of international education expenditure data, its coverage, and challenges

To collect data to populate relevant international comparable indicators, the UIS collects national education expenditure data through its annual survey on education expenditure. Similarly, it also supports countries in establishing a National Education Account System to help countries to compile education finance data comprehensively. The following are the key data sources and methods in collecting and compiling education expenditure data at the international level:

2.1. UOE-UIS annual survey on education expenditure

The UIS annual survey on education expenditure is the main data source for collecting, compiling, and producing education finance data and indicators. The survey is conducted annually and systematically collected data from the Member States on their education expenditures. As the survey collects data on education expenditure from all the levels of government, it could provide the most comprehensive data on education expenditure, provided countries have mechanisms and capacity in compiling all the data to submit to UIS. Therefore, the indicator calculated from the survey is highly reliable and most comprehensive.

Countries that are members of the OECD and the European Union complete the UOE questionnaire, which is implemented jointly by the UIS, the OECD, and Eurostat. The remaining countries receive the UIS questionnaires. Typically, the survey is sent to the Ministry of Education, which often collaborates with the Ministry of Finance to obtain and process the data on financing. Although there are some small

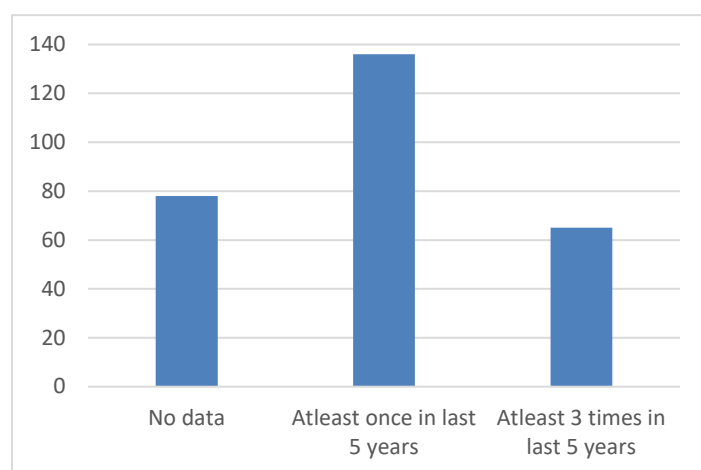
differences between the two finance questionnaires, they are fully compatible and can produce data and indicators comparable to all countries of the world. The questionnaire covers financing by source (government, international, private), by an educational institution (public, private), and by the economic transaction (teacher and non-teacher compensation, current, and capital expenditure).

To ensure the Member States' have enough understanding and capacities in data collection and compilation on education expenditure, the UIS regularly provides technical support to national respondents and government agencies such as workshops, individual country missions, etc. Globally, the UIS-UOE survey often serves as a framework for countries to collect and consolidate education financing statistics.

Coverage of the data

Though the UIS annual survey would be the most reliable and comprehensive way to compile and report data on education expenditure, collecting data from the survey is getting more and more challenging. Yet the UIS source has the biggest coverage of internationally comparable data on education finance. The UIS has published at least one data point for 136 (more than 64% coverage) countries in the last 5 years. Similarly, it published 3 or more data points for 65 (48%) countries in the last 5 years. This shows there are significant data gaps of 36% for education expenditure data.

Figure 1 Number of countries and territories for which UIS data is available in last 5 years



Efforts should be put on improving the data collection through the UOE-UIS questionnaire as it provides a complete picture of education expenditure in a more regular manner.

2.2. Other Sources for Education Expenditure data at international level

Though the UIS database which has more than 55% coverage rate for the education expenditure data, several other sources also produce or have the potential to produce quality education expenditure data. Timely access and careful use of such sources could help to reduce the data gaps at global and regional monitoring of education expenditure.

2.2.1. Public Expenditure Reviews

A Public Expenditure Review (PER) is a diagnostic instrument used to evaluate the effectiveness of public **finances**. A **PER typically analyzes government expenditures over a few years to assess their alignment** with policy priorities and the results achieved. PERs aims to help diagnose spending problems and help countries develop more effective and transparent budget allocations. As part of the World Bank tool, the reviews have been underling since the 1980s. The main output of the exercise is a narrative report which is often (but not always) publicly available on the World Bank website. The report will usually include tables and graphs containing data, but a PER is not a database.

Though a total of 120 reviews can be viewed in the World Bank website from 2011 to 2020, the reviews focusing on education either specifically on education or education is part of the review is only 31 covering 23 countries from 2011 to 2020. Indonesia has undertaken 4 reviews in the last 10 years while other countries undertook only once in the last 10 years (<https://elibrary.worldbank.org>)

2.2.2. BOOST

The **BOOST initiative** is a World Bank-wide collaborative effort launched in 2010 to facilitate access to budget data and promote effective use for improved decision-making processes, transparency, and accountability. It collects and compiles detailed data on all public expenditures from national treasury systems that are presented in an Excel database covering multiyear financial data with a PivotTable interface. The data on expenditures are organized using the country's budget classification codes and compiled in a single database that covers all sectors and all spending units recorded in the treasury system. Each database typically contains information on the approved budget, revised budget, and actual expenditure amounts broken down by government level, administrative unit, sub-national spending unit, economic transaction, functional classification, and financing source. So far, BOOST databases is available for 33 countries (<https://www.worldbank.org/en/programs/boost-portal>).

2.2.3. Education Country Status Reports (CSR)

Education Country Status Reports (CSR) are diagnostic tools of a national education system, aimed at helping decision-makers identify strengths and weaknesses, monitor progress, and choose the best education policy options. They normally cover all aspects of education: policy, progress, enrolment, teachers, quality, financing, etc. CSRs have been implemented in Africa, with technical support from IIEP/Pôle de Dakar and/or the World Bank. The GPE, along with other donors, has funded several CSRs. As with PER, a CSR is a diagnostic and analysis tool, the output being a narrative report including tables and graphs, which is generally made publicly available.

BOX 1: National Education Account (NEA)- An Innovative way to compile comprehensive education expenditure data

To reduce the data gaps and strengthen the national capacities on education expenditure data production, UIS has been working with national focal points as well as with international partners to improve the situation. NEA has been one of the efforts that UIS and its partners has been working to reduce the data gaps. An NEA is a **comprehensive** education finance data collection, processing, and analysis exercise developed and promoted by the UIS, IIEP, and Pôle de Dakar. It covers all education levels, from pre-primary to tertiary education, including vocational training. It includes all sources of funding (all levels of government, private and external sources) and all types of education providers, whether public or private. As mentioned earlier, getting data from various sources to fill the data gaps, UIS with its partner agencies developed NEA methodologies and have been used in various countries to compile data from various sources. An NEA will help produce **comparable** data over time and across countries while keeping a degree of **flexibility** to reflect different national realities. Each dimension of the framework uses existing international definitions as the reference but can be adapted to each country's system.

Though the NEA provides comprehensive data, the coverage of the NEA is still limited as only a few countries less than 20 have done it. Lots of capacity development and advocacy with member states is needed to increase the coverage of NEA at the national level. However, promoting and developing NEAs can help to fill the data gaps for many of the countries.

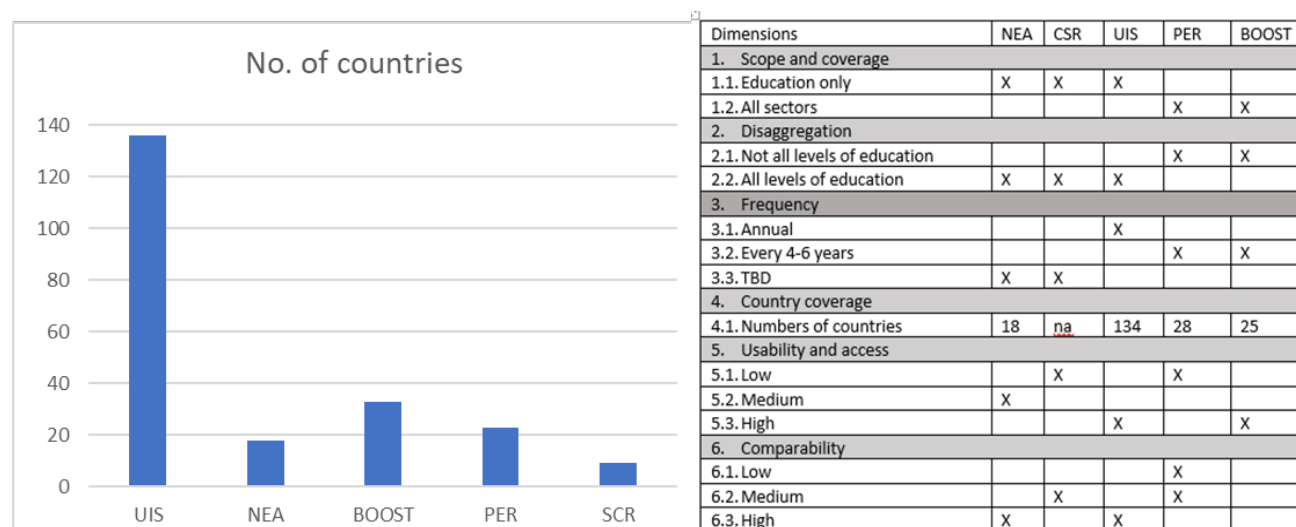
2.4 Summary and coverage of different data sources

The UIS annual data collection is the first and foremost education financing data collection and processing tool as they cover all sources of funding for education, whether they be governmental, international, or private sources. UIS data annual survey framework covers expenditure on all formal education programmes and include all levels of education, from pre-primary to tertiary, including vocational training. UIS annual survey is the most consistent effort to collect data from all the countries and maintain time series data for analysis and comparison between the countries and between different timelines.

NEA is promising tool and methodology to strengthen the country capacity in compiling education expenditure data in sustained manner. PER, BOOST, and CSR can also bring very comprehensive data on education but not necessarily they cover the same levels of data across the countries as the focus of the studies/initiatives can be varied based on the priorities and Member States' interest. The disaggregation can also be different for the country to country based on the availability of the data at the national level. Regarding the frequency, UIS generate data annually whereas the BOOST and PER they are conducted only once in 4-6 years but could include data for several years (Fig xx). However, the information generated from these sources could complement the UIS database to fill the gaps.

In terms of coverage, the UIS database has the highest coverage compare to other data sources (**Figure 2**).

Figure 2. Availability of education expenditure data by various data sources and their comparison



In terms of using the data from BOOST and PER, as mentioned earlier, a thorough review is needed to see the overlapping and duplicated data among different data sources to have clear understanding of levels of filling the data gaps using these sources. The preliminary analysis shows that using PER and BOOST can help either to fill the gap or improve the time series data for at least 25 countries.

Figure 3 Overlapping between PER/BOOST and UIS in terms of data availability(Preliminary analysis) (detail can be added later in annex, if needed)

BOOST	PER	Overlap between BOOST and PER	BOOST and PER	UIS (Trend)	Overlap between BOOST/PER and UIS
33	23	5	51	65	26

3. Some of the Key Challenges

- Lack of a good financial data system at the national level is the key hurdle in collecting data from countries. Most often, data is available, however, it is not available by ISCED classification or data do not cover all the expenditure of the government which makes it difficult for countries to complete the UIS questionnaire.
- NEA brings new hope in generating data at the national level; however, its coverage is still limited, and country capacity is still limited.
- Finance data generation demands strong coordination and cooperation for data transfer and access to data at various government agencies. Such coordination and partnership are still not in place in many of the countries;
- PER, BOOST and CSR could bring data on education expenditure; however, they are not conducted regular basis. This lead discontinuity in the practices and irregularity in data production

4. Filling the gaps- Some recommendations

The best solution to ensure quality finance data to monitor International benchmarks is obviously to strengthen the capacity of the countries in producing quality data at the national level. Also, there is a need to sensitize member states to timely submission of financial data to UIS through its annual survey. While advocating for these solutions, the new solution should also be discussed and considered if available.

4.1. Strengthening national capacities in compiling and collecting data on education expenditures

UIS should expedite its efforts to strengthen to build national capacities in collecting and compiling education expenditure data and submit regularly to UIS. It should organize Regional and national training workshops (Online and offline) for UIS focal points in compiling data from various sources and completing the questionnaire.

4.2. Collecting/compiling expenditure data from publicly available channels/sources

4.2.1. Using BOOST, PER, and SCR to fill the global data gaps in education expenditures

As mentioned earlier, BOOST, PER and SCR do also have data on education expenditure data for several years for various countries. However, their coverage and completeness of the data could be varied

depending upon scope of the studies. To use these sources, careful review of data included in various countries can be done to ensure meaningful inclusion of those data into global database.

4.2.2. collecting data from publicly available other sources

With the advancement of technologies and implementation of the right to information, many governments publicize and disseminate educational information and data including financial data through electronic media. Specially expenditure related data are disseminated as reports e.g. economic reports or simply economic status were presented in the table format and publicized through webpages or web portals or simply in PDFs. Such reports/tables include information on total GDP, Revenue by sectors, Government spending by sectors, etc. Careful looking at such reports and information, one can compile data on total government expenditure in education to calculate international education finance benchmark indicators. Some countries do also publish the total government expenditure in education in the Ministry of education web sites or national education sector analysis reports. Such data could be useful in filling the data gaps in the international education finance data set. Following process can be followed in compiling data from alternative sources:

1. Identification of countries for alterantive data collection

- Review and analyze data availability and trends in UIS and BOOST/PER

2. Collect/compile data from publicly available data sources

- Development of a standard template to compile the data from alternative sources

3. Adjust and verify with countries based on international definition and standards

4.3. Establishing partnership

A partnership with regional bodies, academic institution who have interest in collecting and analysis of education financing data should be established. In partnership with such bodies/institutions, national capacities development activities and compilation of data from alternative sources can be done.

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