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Report of the United Nations Educational, Scientific and Cultural Organization Institute for Statistics on education statistics

Note by the Secretary-General

In accordance with Economic and Social Council decision 2024/312 and past practices, the Secretary-General has the honour to transmit the report of the United Nations Educational, Scientific and Cultural Organization Institute for Statistics on education statistics, which is submitted to the Commission for decision.

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Report of the United Nations Educational, Scientific and Cultural Organization Institute for Statistics on education statistics

I. Introduction

1. The present report of the United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute for Statistics addresses three areas: (a) national benchmarks for education; (b) model estimates for out-of-school and completion rates; and (c) the Conference on Education Data and Statistics.

2. Following a brief update on the standards and methodologies in education, the present report summarizes the progress made in setting national benchmarks for selected education indicators and provides a description of the new methodology of producing estimates of completion and out-of-school rates using modelled data, as well as an outline of the activities of the Conference on Education Data and Statistics and the work of the Education Data and Statistics Commission.

II. Update on standards and methodologies

A. International Standard Classification of Education 2011

3. An International Standard Classification of Education (ISCED) review panel was established by the Institute in June 2023 and concluded its work in September 2024. A draft report containing the recommendations of the review panel was prepared and is currently under consideration by the Institute.

4. Progress has been made towards the development of an integrated ISCED database that brings together ISCED 2011, ISCED Fields of Education and Training 2013 and the International Standard Classification of Teacher-Training Programmes 2021 into a single comprehensive and searchable database. Additional processes to track and validate changes in ISCED over time have also been established. The pilot data collection for the International Standard Classification of Teacher-Training Programmes was carried out from August to December 2023. The survey results showed the difficulties in gathering comprehensive data for producing comparable statistics, affecting the feasibility of using the International Standard Classification of Teacher-Training Programmes promptly for a global indicator on trained teachers. The Institute is collaborating with the UNESCO Section of Education Policy to explore solutions to address this issue.

B. Learning outcomes

Sustainable Development Goal indicator 4.1.1

5. Sustainable Development Goal indicator 4.1.1 (a) measures learning at the foundational level, as it reflects the “proportion of children and young people … in grades 2/3 … achieving at least a minimum proficiency level in (i) reading and (ii) mathematics”. Up until late 2023, there had not been much country measurement of and reporting on this indicator,[1] which led the Inter-Agency and Expert Group on Sustainable Development Goal Indicators to “demote” the indicator from tier I to tier II in October 2023 due to low data coverage, putting its status at risk during the 2025

[1] World Education Blog, “Compare, align, track: the foundational learning data challenge”, 13 September 2023.

review of the global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development. In 2024, significant strides were made to support more countries in reporting on learning and in enhancing their assessments. While many countries still face challenges in reporting on the key reading skill, that is, whether children read well enough to learn, information assessments provide valuable insights into the set of foundational and precursor skills that represent the building blocks of the reading and comprehension skill, which is the level required by indicator 4.1.1 (a). The Institute proposed a reporting scheme to unpack reporting of the minimum proficiency level by individual skill and convened a technical advisory group of experts specialized in measuring foundational learning, which worked on a document on the criteria of the Global Alliance to Monitor Learning and the Education Data and Statistics Commission for use of an assessment to report on indicator 4.1.1[2] and recommended data analysis to define relevant skills and benchmarks. The Institute introduced a buyer's guide to promote the free and informed choice by countries of learning assessments and provide them with information on the options available and costs to help them to decide which assessment they need. The Institute also proposed a virtual fund and a vetting mechanism for assessments as ecosystem improvements that can make it easier for countries to measure and report on indicator 4.1.1 in particular.

International item library

6. The Institute continued its collaboration with the Evaluation, Foresight and Performance Directorate, which is the statistical department of the Ministry of Education of France, and other partners on a project to develop, maintain and promote an international item library, which will serve as a platform for a bank of items, include evaluation tools and respond to the needs of the global education community and Governments, helping in the monitoring of learning outcomes over time and guiding decision-making. For users, the library is important as it will facilitate the creation of assessments in education, strengthen international cooperation, enable the sharing of best practices, help to address inequalities and enable the sharing and enhancement of statistical and pedagogical advancements.

7. The project is well on track: the short-term expectations of users of the first release are that the library will include pretested items in some priority topics (such as mathematics and English) and that some topics will be deprioritized until their full relevance has been proved (such as literature topics in native languages). The long-term expectation (between three and five years) is that the library will be a universal item library to which everyone has access for building custom evaluations.

Pairwise comparison method

8. The Institute offers countries several options for reporting on Sustainable Development Goal indicator 4.1.1, including the pairwise comparison method for global learning outcomes. This method helps countries to benchmark their assessments against global minimum proficiency levels by having experts compare their items with those aligned to the learning progression scales for reading and mathematics developed by the Australian Council for Educational Research.

9. Co-authored by the Global Education Monitoring Centre at the Australian Council for Educational Research and the Institute, the *Pairwise Comparison Method Toolkit: A Toolkit for Countries to Measure Global Learning Outcomes* was developed in 2024 to support countries in aligning their learning assessments with global standards and reporting on Sustainable Development Goal indicator 4.1.1. Where

[2] UNESCO, Institute for Statistics, "GAML/EDSC criteria for use of an assessment to report on SDG 4.1.1", 2014.

appropriate, and to support consistency, some of the content of the toolkit is based on one of the other reporting options for countries, that is, the *Policy Linking for Measuring Global Learning Outcomes Toolkit: Linking Assessments to the Global Proficiency Framework*.

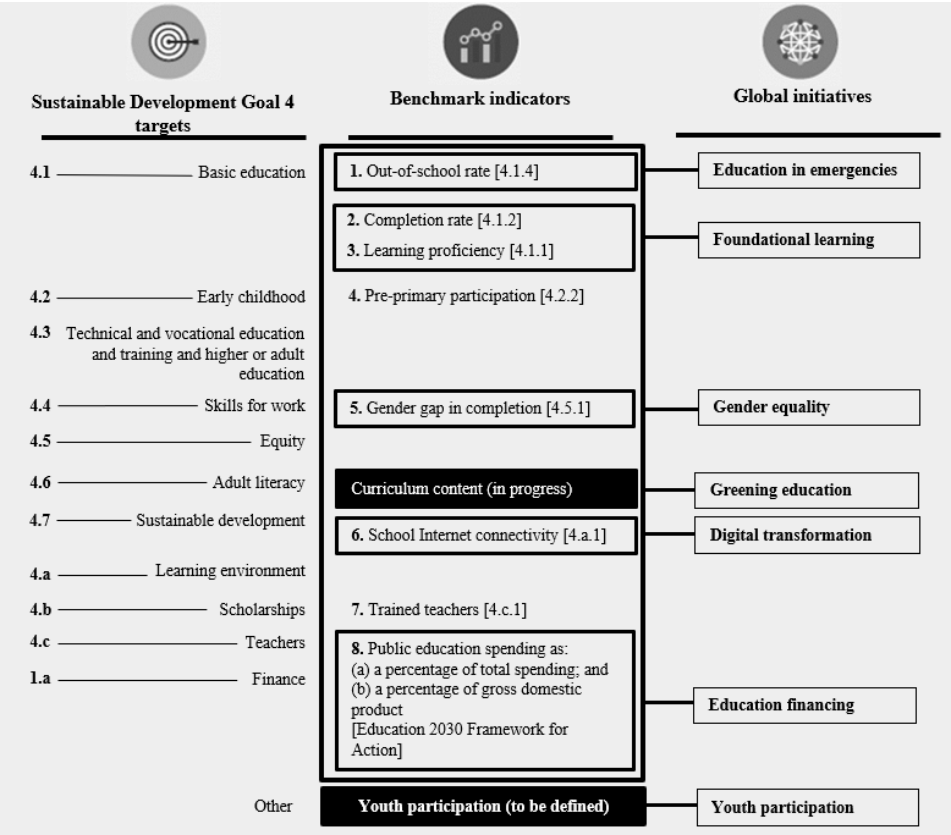
III. National benchmarks for education[3]

10. Following the adoption in 2015 of the SDG4 – Education 2030 Framework for Action: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all, in which countries were called upon to establish benchmarks, the Institute and the Global Education Monitoring Report have helped countries to fulfil their commitment to establish national Sustainable Development Goal 4 benchmarks.

11. The benchmarking process began shortly after the adoption of the Sustainable Development Goal 4 monitoring framework by the General Assembly in 2017 and comprised the following key steps: (a) endorsement of seven Sustainable Development Goal 4 indicators (August 2019); (b) invitation to countries, along with supporting documentation, to submit national benchmark values for 2025 and 2030 (August 2021); (c) following the release of the initial results, invitation to countries to submit or revise their national benchmark values (February 2022); (d) recognition of the role of benchmarking in the vision statement of the Secretary-General at the Transforming Education Summit, leading to a decision to explore the addition of three benchmark indicators to reflect some of the commitments of the Summit to transform education, including youth participation, greening education and digital transformation (September 2022); (e) adoption of school Internet connectivity as the eighth benchmark indicator to reflect the third commitment of the Summit (June 2023); (f) invitation to countries to set national benchmarks for this newly added indicator; and (g) invitation to countries to review or set national benchmarks, if they had not done so yet (October 2024). The figure below shows the eight benchmark indicators by thematic area and disaggregation.

[3] For more information on benchmarks, please refer to www.unesco.org/en/sdg4scorecard-dashboard, https://tcg.uis.unesco.org/benchmarks-new, https://tcg.uis.unesco.org/datagaps-dashboard and https://tcg.uis.unesco.org/data-gaps-map.

Alignment of the Transforming Education Summit global initiatives with the Sustainable Development Goal 4 targets and benchmark indicators



Source: UNESCO Institute for Statistics, *SDG 4 Scorecard Progress Report on National Benchmarks: Focus on Teachers 2024* (Montreal, Canada, 2024).

12. Overall, 8 out of 10 countries have set at least one national benchmark for Sustainable Development Goal 4. The indicators for which the largest number of countries have submitted a benchmark, either directly or through their participation in a regional mechanism, are the early childhood education participation rate (4.2.2) (72 per cent) and the upper secondary completion rate (70 per cent). About 60 per cent of countries have submitted benchmarks on out-of-school rates (4.1.4) and trained teachers (4.c.1), while about 50 per cent of countries have submitted benchmarks on the minimum learning proficiency in reading and mathematics (4.1.1). The lowest submission rates, with about one out of three countries submitting benchmarks, are observed for the gender gap in upper secondary completion benchmark indicator and the new indicator on school Internet connectivity (4.a.1). All countries have agreed minimum targets for the public expenditure indicators in the Education 2030 Framework for Action (15 per cent of total public spending and 4 per cent of gross domestic product).

A. Classification of country progress towards benchmarks

13. Countries are classified into six categories based on the rate of their recent progress and the range of progress rates observed historically (between 2000 and 2015). Four categories reflect the rate of progress since 2010 or 2015 and the implication thereof for the probability of achieving the benchmark and two categories reflect the non-availability of data. For countries without national benchmarks (i.e.

benchmarks were not submitted by the countries or extracted from their national sector plans), progress is evaluated against feasible benchmarks that were estimated for each indicator based on the average rate of progress of the fastest-improving top 25 per cent of countries in the period 2000–2015 and vary depending on the starting value of the indicator.[4] For expenditure indicators, countries are classified according to the availability of data and whether they have achieved one, both or none of the minimum benchmark values to which they committed in 2015.

14. The participation rate in organized learning one year before the official primary entry age is one of the indicators with the highest data coverage (85 per cent). In high-income countries, the coverage is 95 per cent, with 60 per cent of countries achieving their target. In low-income countries, the coverage is 66 per cent, with 24 per cent of countries achieving their target. While the majority of upper-middle- and high-income countries are achieving their national targets of close to universal enrolment among adolescents of lower secondary school age, low- and lower-middle-income countries, primarily in sub-Saharan Africa, are struggling, with as many as 40 per cent of countries with data not making any progress since 2015. Middle-income countries are more likely to achieve fast progress in their upper secondary completion rates than low- and high-income countries. Low-income countries are making fast progress towards closing their large gender gaps in upper secondary completion at the expense of young women. As for reading at the end of primary schooling, 47 per cent of countries have no data at all and a further 20 per cent do not have enough data to establish trends. The school Internet connectivity indicator shows that richer countries are more likely to report data on Internet connectivity in primary schools and to have achieved nearly universal coverage. The percentage of trained teachers is at its lowest level in pre-primary education with one out of two countries not reporting on it, making it difficult to assess progress.

15. A large share of countries are moving backwards in three indicators: early childhood education participation (4.2.2); the gender gap in upper secondary completion; and learning outcomes at the end of lower secondary school (4.1.1c). Large gaps in data on learning outcomes (4.1.1), especially in early grades, prevent a broader assessment of trends on learning outcomes and how these trends differ between poorer and richer countries. The availability of data for one out of five countries on the outcomes at the end of primary school reflects the recent efforts of countries to take part in cross-national assessments that will shed light on these trends in coming years. Large data gaps also affect the indicator on trained teachers. These gaps are, however, mainly due to the lack of a shared understanding and standards, rather than the unavailability of data sources. A large percentage of countries have made slow progress in early childhood education participation (21 per cent) and in lower secondary completion (31 per cent) and upper secondary completion (45 per cent) in particular, which means that the chances of universal pre-primary participation and secondary completion are becoming ever more distant. Most countries with benchmarks and data appear to be making fast progress towards the achievement of national targets, although 3 out of 10 of those countries appear to have regressed in the out-of-school rate of young people of upper secondary school age between 2015 and 2020.

16. The Sustainable Development Goal 4 benchmarking process faces many challenges, including that of missing benchmarks, which could be solved by means of more intensive communication to drive the political process that supports benchmarking, and the quality of benchmarks, which could be improved.

[4] For more information, see www.unesco.org/en/sdg4scorecard-dashboard.

IV. Model estimates for completion and out-of-school rates[5]

17. The recent efforts of UNESCO to combine multiple information sources to estimate and report Sustainable Development Goal 4 indicators are important steps for informing the international community through the efficient use of multiple sources of data. Modelled data are produced for two Sustainable Development Goal indicators: completion rates and out-of-school rates.

A. Bayesian modelling estimates

18. The completion rate indicator (4.1.2) measures the percentage of a cohort of students who complete the last grade of each education level, accounting for delays due to late enrolment or repetition. A Bayesian hierarchical model has been developed to address data inconsistencies, combining multiple survey sources to produce smooth, reliable completion rate trends. This model improves data quality, addresses age misreporting and generates estimates that are less sensitive to individual survey variations, with point and model estimates now included in the UNESCO Institute for Statistics database for regional and global reporting.

19. The out-of-school rate indicator (4.1.4) measures the proportion of children and young people in the official age range for their education level who are not enrolled in education. With a view to addressing the long-standing challenges of incomplete administrative data, a Bayesian hierarchical cohort-based model was developed to estimate these rates by integrating administrative and household survey data. This model decreases inconsistencies, tracks age-specific rates and accommodates cases where enrolment data exceed population estimates. The model, the results of which were reported for the first time in 2022, provides reliable estimates for individual countries and regional aggregates, although it faces limitations, such as the difficulty of adjusting to sudden changes in attendance due to emergencies.

B. Current initiatives to improve the engagement of member States

20. Some initiatives may serve to build on the progress made so far and are also aimed at strengthening the community of practice of education statisticians. Examples include:

(a) Formalizing good practices for reporting estimates. The Education Data and Statistics Commission has initiated a process to discuss issues that have emerged from using models to estimate the Sustainable Development Goal 4 indicators, such as adapting the Guidelines for Accurate and Transparent Health Estimates Reporting;[6]

(b) Supporting country participation and ownership of estimates and strengthening national capacities. The aim is to familiarize countries with the rationale for and implications of producing and reporting estimates and enable them to identify errors and seek clarification and contribute ideas for potential areas of model development. Indicator estimation is not only an academic exercise but also a fundamental part of effective policy and programming;

[5] For more information, see UNESCO Institute for Statistics, “Integration of statistics: challenges and solutions forward”, February 2024. To visualize the results of both the completion rates and out-of-school rates models, see https://education-estimates.org.

[6] The World Health Organization Guidelines for Accurate and Transparent Health Estimates Reporting contain the best reporting practices for studies that involve estimating indicators using multiple data sources.

(c) Developing models to estimate other indicators that rely on multiple data sources. While completion and out-of-school rates have been prioritized for model development, they are only two of a larger set of indicators that could benefit from the systematic use of multiple data sources and types of data sources.

V. Conference on Education Data and Statistics[7]

21. In February 2024, the Institute organized the first-ever Conference on Education Data and Statistics, held at UNESCO headquarters in Paris, which was aimed at establishing an international community of practice of education statisticians; communicating, discussing and reaching consensus on concepts, definitions, methodologies and operational aspects of indicator measurement; and debating the impact of technological developments on education statistics and ways to benefit from mutual opportunities and address challenges.

22. The Conference was approved during the ninth meeting of the Technical Cooperation Group on Sustainable Development Goal 4 Indicators,[8] held in November 2022,[9] following which the Institute started drafting position papers and background papers to be presented and discussed at the Conference. The papers present the background, challenges, potential solutions and forward agenda for the following themes: ISCED, administrative data, teachers, education expenditure data, learning assessments and skills, household surveys and benchmarks.

23. In October and November 2023, the Institute held six regional consultations, for the Pacific, Arab States, Asia, Latin America and the Caribbean, Africa, North America and Europe, to discuss the position papers with key stakeholders from member States and to identify regional priorities to be highlighted at the Conference. In December 2023, the Institute also held the tenth meeting of the Technical Cooperation Group on Sustainable Development Goal 4 Indicators and a meeting of the Global Alliance to Monitor Learning to prepare for the Conference. An additional meeting of the members of the Technical Cooperation Group was held one day prior to the Conference. Other meetings included a global webinar for member States in October 2023 and a briefing for UNESCO colleagues and second global webinar, which were both held in December 2023.

A. Engagement of member States and stakeholders

24. The Conference gathered together 420 participants from 130 member States and 80 organizations, including a broad spectrum of experts and stakeholders: national statisticians; high-ranking officials from ministries of education, including ministers and deputy ministers of planning; heads of statistics departments; heads of learning assessment agencies; representatives of national statistical offices; and representatives of international organizations.

25. The Conference took place over three days, during which 16 sessions were held, involved the participation of five keynote speakers, as well as the organization of five panels with 34 panellists and the discussion of eight position papers and six background documents, and resulted in nine resolutions and more than 30 decisions.

[7] For more information, see the forthcoming document on the proceedings of the Conference on Education Data and Statistics.

[8] The Technical Cooperation Group on Sustainable Development Goal 4 Indicators was renamed the Education Data and Statistics Commission in February 2024.

[9] For more information on the post-meeting consultation results, see https://tcg.uis.unesco.org/wp-content/uploads/sites/4/2023/03/TCG9_Consultation-Results_Report_2023.03_FINAL.pdf.

It was preceded by an engagement day on the theme “Data-driven approaches to lifelong learning”, which included eight sessions on topics ranging from education in emergencies to disability.[10] Four monitoring tools were launched to mark the convening of the Conference, with a view to addressing the need for data ecosystems,[11] increasing statistical capacity to produce data[12] and measuring progress and data use.[13]

26. The LASER for Education Information Ecosystem[14] operates as a Statistical Performance Indicator Index which, through a holistic approach, helps to assess whether a country’s education data ecosystem is collecting and effectively using the variety of data sources required for policymaking and the overall governance of the education sector.

B. Decisions of the Conference on Education Data and Statistics

27. The convening of the Conference marked a historically significant milestone and it has become established as a pioneering forum in the field of education, bridging a critical gap in the global education statistics landscape and setting the foundation stone for future education agendas.

28. The Conference was convened for the first time by the Technical Cooperation Group on Sustainable Development Goal 4 Indicators, which was renamed as the Education Data and Statistics Commission in 2024. The Commission takes forward the recommendations of the Conference between sessions. The Conference will convene every three years, in plenary and in public sessions, and its secretariat is the Institute. The Bureau of the Conference ensures the smooth and efficient conduct of proceedings and examines draft decisions and recommendations before their submission to the plenary session for adoption.

29. At the programmatic level, the discussions and decisions are grouped into the following categories:

(a) Innovation in data collection to improve coverage and the quality of data, including the use of tools to reduce the burden of data collection on countries;

(b) Data integration by utilizing data from multiple data sources and harmonizing these data through modelling that is already applied for out-of-school rates and completion rates;

(c) Providing support to member States, building their capacities, including the harmonization and production of manuals and establishment of criteria;

(d) Data use and the engagement of stakeholders in the production thereof, including politicians, academia, statisticians and civil society, among others;

[10] The synthesis report of the engagement day is available at https://ces.uis.unesco.org/wp-content/uploads/sites/23/2024/05/UIS-CONFERENCE-ENGAGEMENT-DAY-SYNTHESIS-REPORT-final.pdf.

[11] See UNESCO Institute for Statistics, *Data for Education: A Guide for Policymakers to Leverage Education Data* (Montreal, Canada, 2023).

[12] See UNESCO Institute for Statistics, “LASER for Education Information Ecosystem: concept note”, and UNESCO Institute for Statistics, “Assessments for minimum proficiency levels: an efficient and effective tool for global reporting and strengthening capacity to conduct national assessments”, August 2023.

[13] See UNESCO Institute for Statistics, *SDG 4 Scorecard Progress Report on National Benchmarks: Focus on Teachers*.

[14] LASER stands for learning assessments; administrative data; survey population system; expenditure; and review and monitor progress. For more information, see UNESCO Institute for Statistics, “LASER for Education Information Ecosystem: concept note”.

(e) Promoting the inclusion of nationally defined benchmarks (quantitative targets) set by countries in national sector plans, regional dialogue and global cooperation processes to achieve Sustainable Development Goal 4.

C. Education Data and Statistics Commission

30. The Conference decisions included renaming the Technical Cooperation Group on Sustainable Development Goal 4 Indicators as the Education Data and Statistics Commission. The Commission is the primary body for the coordination of global education data and statistics and takes forward the recommendations of the Conference between sessions. The Commission seeks to apply the principles and ways of operations of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators in education and is, first and foremost, an intergovernmental body that serves the interests and needs of member States in the domain of education data and statistics.

D. Website and ways of working

31. The website of the Commission includes links to the main data resources, such as the UNESCO Institute for Statistics data browser, country profiles, repositories, the LASER for Education Information Ecosystem and the *World Education Statistics* publication. It provides access to a methodological toolkit with information on the Sustainable Development Goal 4 indicators, benchmarks, regional frameworks and ISCED. The outreach section of the website provides information on publications, projects and webinars as well as news, among other things.

32. The Commission is co-chaired by the Director of the UNESCO Institute for Statistics and the Director of the Global Education Monitoring Report and is composed of 28 member States.[15] The work of the Commission is carried out by its five working groups and two task forces.[16]

33. In general, the working groups develop standards, classifications or norms and are composed of members of the Commission and non-member experts in the field or domain. They include the following:

(a) Working group on administrative data and educational management information systems;

(b) Working group on teachers;

(c) Working group on education expenditure data;

(d) Working group on household surveys;

(e) Working group on the Global Alliance to Monitor Learning.

34. The task forces are scope-specific, established for a specified time frame and focus on developing methodologies. The members of the task forces provide vision, direction and coordination for statistical activities in education. They include the following:

(a) Task force on education in emergencies;

(b) Task force on teachers.

[15] The latest rotation of the members of the Commission for the period 2024–2026 was completed following the Conference. For more information on the composition of the Commission, see https://tcg.uis.unesco.org/tcg-composition/.

[16] The development of a new task force on ISCED is being discussed.

VI. Action to be taken by the Statistical Commission

35. **The Commission is invited:**

(a) **To note the progress made by the UNESCO Institute for Statistics and support its work, including the Global Education Monitoring Report, in guiding countries to set national benchmarks for education indicators;**

(b) **To endorse the new methodology of producing estimates of completion and out-of-school rates using modelled data and support its further expansion;**

(c) **To note the convening of the first-ever Conference on Education Data and Statistics, which builds a robust governance as part of the global education cooperation mechanism;**

(d) **To support the work of the Education Data and Statistics Commission, which takes forward the Conference's recommendations between sessions.**