Conference on Education Data and Statistics Engagement Day

Data-Driven Approaches to Lifelong Learning Synthesis Report

UNESCO
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Data-Driven Approaches to Lifelong Learning

Synthesis Report

29/04/2024

Paris, France

Suggested citation: UNESCO. (2024). Data-Driven Approaches to Lifelong Learning: Synthesis Report. Paris, France.

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Foreword

UNESCO organized its first Conference on Education Data and Statistics from 7 to 9 February 2024, at UNESCO Headquarters. On the day before the Conference, an engagement day was held, focusing on eight themes to address major challenges and opportunities in data collection, analysis and utilization for various educational levels, learning settings and policy domains.

The title of the engagement day, "Data-Driven Approaches to Lifelong Learning", connects three critical aspects:

First, data coverage and timeliness are the compass and the sextant of our journey. Just as a compass provides direction and a sextant determines position by using the stars, comprehensive and timely data illuminate the path forward, ensuring that we navigate with the most current and complete information available. This ensures that education systems are not only aligned with current needs but are also adaptable to future shifts in economies, labour markets, societies and technological advancements.

Second, moving onto the data needed for lifelong learning pathways and systems, this represents the maps and charts on which our course is plotted. These maps detail the vast array of educational opportunities, learning settings and career pathways available, from the earliest stages of learning and schooling through to higher education and ongoing adult learning, professional development, upskilling and reskilling for work and life.

Third, and lastly, data for decision-making acts as the ship's rudder, steering the entire educational system. Decision makers, whether they be policymakers, educators or individuals, rely on high-quality data to make informed choices. Like a rudder's subtle adjustments that direct a ship's course, data-driven decisions can lead to significant shifts in educational outcomes and readiness. This ensures that resources are allocated efficiently, programmes are tailored to meet the needs of diverse populations and individuals can navigate their own learning and career paths with confidence.

The engagement day gave us the opportunity to focus on a topic that is critical to the achievement not only of our education goals, in particular Sustainable Development Goal 4 (SDG 4), but also to the entire 2030 Agenda for Sustainable Development: sound education data and statistics for decision-making at all levels. Our rapporteurs reported key takeaways from each session to the Member States and partners at the main conference, which enriched the

discussion and made a contribution to the overall proceedings. This document is a reference for understanding the outcomes of the engagement day.

Building on the rich discussions and takeaways, we will continue our collaboration with other organizations and partners on the ways to improve data scope, coverage and reporting as well as the use of data and evidence for better education policies and practices from a lifelong learning perspective.

Borhene Chakroun

Director, Division for Policies and Lifelong Learning Systems

Acknowledgements

We would like to thank all the speakers, panellists and audience for their participation and contribution to the discussion on the engagement day of the Conference on Education Data and Statistics.

We are grateful to the Director of the UNESCO Institute for Statistics (UIS), Silvia Montoya, and the Director of the Global Education Monitoring (GEM) Report Team (ED/GEM), Manos Antoninis, for their generous support and guidance. We also thank the Director of the Division for Policies and Lifelong Learning Systems (ED/PLS), Borhene Chakroun, for his leadership.

We would like to thank Christian Stoff (Education Cannot Wait), Cirenia Chávez (United Nations High Commissioner for Refugees, UNHCR), Nicolas Servas (Global Education Cluster), and all the UNESCO session organizers, rapporteurs and staff working behind the scenes, including but not limited to the Section for Higher Education (Maria Paz Portales, Vanja Gutovic, Yufeng Liu, Xuechan Huang), Section of Youth, Literacy and Skills Development (Hervé Huot-Marchand, Mari Yasunaga, Hiromichi Katayama, Mattia Olivari, Yael Thomas, Allegra Colombino), Section of Education for Inclusion and Gender Equality (Justine Sass, Matthias Eck, Tianyi Liu, Maria Renom, Nian Wan), Section of Migration, Displacement, Emergencies and Education (Yayoi Segi-Vltchek, Lily Marleah Calaycay, Artur Krzysztof Borkowski), Section of Education Policy (Rokhaya Diawara, Pierre Chapelet, Sonia Guerriero, Satoko Yano, Nastassja Marie Matrundola, Nina Rottger, Muhammed Safa Sahin, Hyok Il Kim, Yasemin Buharali, Hamdi Addow, Charles Antoine Linne, Lara Daher), UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training (Friedrich Huebler, Max Ehlers), UNESCO Institute for Lifelong Learning (Nicolas Jonas), and International Institute for Educational Planning (Suguru Mizunoya, Amélie A. Gagnon). We would also like to express our appreciation to the UNESCO Institute for Statistics (UIS) team (Olga Ovsyannikova, Alina Kirillina, Adolfo Imhof, Lina Ktaili) for their kind support throughout the period, especially with regard to participant invitation and conference material dissemination.

This report was drafted by Yufang Ruan, under the guidance of the Chief of the Section of Education Policy, Gwang-Chol Chang. The copyright of the photos included in this report belongs to ©UNESCO/Sacha Heron, unless otherwise indicated.

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Executive summary

Given the recent shifts in the field of education, the collection, processing and utilization of data and statistics have become more critical than ever. The increasing focus on lifelong learning as an organizing principle of education, coupled with the advent of digital transformation, global socioeconomic and demographic changes, and the pressing challenges posed by inequality and climate change necessitate an approach to education data that is more systemic, dynamic, inclusive and forward-thinking.

UNESCO organized its first Conference on Education Data and Statistics from 7 to 9 February 2024, at UNESCO Headquarters. Prior to the Conference, UNESCO and its partners held an engagement day on 6 February, to delve into more details of specific issues centred around the theme of "Data-Driven Approaches to Lifelong Learning". The engagement day was structured into eight parallel sessions. Each session focused on a different stage of the learning pathways and their continuum, as well as the systemic challenges. The sessions explored the unique challenges and opportunities in data collection, analysis and utilization within various educational levels and particular policy domains, emphasizing the role of data in facilitating learning pathways, enhancing learning outcomes and contributing to educational equity and inclusion.

The fruitful discussions generated the following recommendations for future directions:

1. Take a lifelong learning perspective.
2. Refine existing indicators and harmonize different approaches.
3. Develop new indicators to meet evolving demands.
4. Enhance data availability and quality.
5. Promote data on gender equality in and through education.
6. Leverage education data in emergencies to build resilience.
7. Use education data for good governance and effective decision-making.
8. Foster international collaboration and partnership.

By embracing these future directions, stakeholders can unlock the full potential of education data to inform policies and practices, identify the right paths to transform education systems and ultimately, empower individuals and communities to thrive in an equitable and inclusive future.

Introduction

Background

Reflexive practices on how we collect, process and utilize data and statistics in the field of education have become more critical than ever. The growing attention to lifelong learning as an organizing principle of education and the onset of digital transformation, global socioeconomic and demographic shifts, as well as the urgent challenges posed by climate changes demand a more systemic, dynamic, inclusive and forward-thinking approach to data in education.

This is affected, however, by three major challenges. **First**, the fragmentation of data systems and processes in the education sector poses a significant challenge in harnessing its full potential for informed decision-making and policy development within a **lifelong learning perspective**. Data collected at different levels of education and about various learning spaces and settings (schools, higher education institutions, workplaces, communities, digital spaces, etc.) often remain dispersed, hindering the ability of governments to form a cohesive and comprehensive understanding of the educational landscape and individuals' learning pathways and placing them within a lifelong and lifewide perspective. The lifelong learning perspective presents a significant challenge in data gathering, especially in areas such as non-formal education – where data collection and statistical production are notably sparse – that requires the inclusion of alternative forms of data beyond traditional statistics, potentially harnessing qualitative data.

Second, the disconnect between data and decision-making in education impedes the effectiveness of educational policies and initiatives. It also affects the lack of integrated structural policies to fight inequalities. Where data may exist, often a streamlined and coherent mechanism is lacking to ensure that this data reaches the right decision makers at the appropriate time. As a result, educational strategies and policies may be based on outdated, incomplete or irrelevant data, leading to weak outcomes. Additionally, the lack of capacity among educators, administrators and policymakers to understand and utilize data effectively is affecting education **systems capacities** in driving educational improvements and enhancing a continuum of learning from early ages to adulthood, including higher education and vocational training.

Third, modern **technologies** have vastly expanded our capabilities for real-time data collection and analysis, enabling more nuanced and granular insights into educational trends and

needs. However, these advancements also bring forth new challenges in ensuring data accuracy, interoperability, privacy and ethical use.

By re-examining our methodologies and processes in data collection and utilization, we can ensure that educational policies and practices are not only responsive to current demands but also resilient and adaptable to future changes.

Scope and organization

UNESCO organized its Conference on Education Data and Statistics from 7 to 9 February 2024, at UNESCO Headquarters. The Conference is envisioned as a regular dialogue and peer-learning platform for the international community of practice among education statisticians. The objectives of the Conference were the following: (1) establish the process for an international community of practice among education statisticians and the relationship of the Conference with the Technical Cooperation Group on the Indicators for SDG 4 - Education 2030 (TCG); (2) communicate, discuss, and reach consensus on key issues regarding concepts, definitions, methodologies and operational aspects of SDG 4 indicator measurement in the form of recommendations and guidelines for adoption as international standards to improve comparability; and (3) debate the impact of technological developments on education statistics and ways in which the community of education statisticians can benefit from opportunities and address challenges.

The engagement day was held on 6 February 2024, at UNESCO Headquarters, with the theme, "Data-Driven Approaches to Lifelong Learning", structured into eight sessions, namely:

1. Data-driven insights and transformative solutions in early childhood education.
2. Higher education data production.
3. Technical and vocational education and training (TVET) and skills development.
4. Adult learning and education.
5. Education in emergencies.
6. High-quality data on gender equality in and through education.
7. Sound data for good governance.
8. Effective data-driven decision-making.

Following a joint introductory session to open the day, the eight sessions ran in parallel, each focusing on a different stage of the learning pathways and their continuum, as well as the systemic challenges. The sessions explored the unique challenges and opportunities in data collection, analysis and utilization at various educational levels and in particular policy domains, emphasizing the role of data in facilitating learning pathways, enhancing learning outcomes and contributing to educational equity and inclusion. In the following sections, we will showcase the main outcomes from each session.

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Main Outcomes

In this chapter, we will review the primary outcomes from the engagement day, structured into eight sessions, each dedicated to a specific theme. Each theme begins with an overview of the background, proceeds to key topics addressed during the session and culminates in a summary of outcomes and key takeaways.

1. Data-driven insights and transformative solutions in early childhood education

Background

Compared to other Sustainable Development Goal (SDG) targets, early childhood care and education (ECCE)-related data and indicators are insufficient in most countries, and where available, many of them are often not comparable across countries, due to varying ECCE provisions. Furthermore, countries with constrained resources need technical and financial support to establish and/or strengthen their data management systems. National ownership of data generation and the enhancement of monitoring and evaluation capacities are vital to advancing the ECCE agenda. This calls for international, national and subnational collaborations to foster agreement on international comparable measurements and to develop and implement coordinated initiatives and actions to support countries most in need.

In this endeavour, some considerations need to be taken into account. Gauging SDG indicators related to ECCE is compounded, as many relevant SDGs span health, nutrition, water, sanitation and hygiene (WASH) and child rights. Indicator 4.2.1 addresses young children's holistic development, suggesting consideration of its age range to "children under five". As for SDG indicator 4.2.2, addressing "participation rate in organized learning", countries may need further technical guidance, particularly in terms of addressing data on children attending multiple years of pre-primary education.

UNESCO Executive Board, at its 216th session, adopted a decision on the follow-up of the Tashkent Declaration and Commitments to Action for Transforming Early Childhood Care and Education, which requested UNESCO, in partnership with UIS and the GEM Report, to utilize the current indicators framework to monitor SDG target 4.2. The decision acknowledges gaps in data areas such as ECCE personnel, financing and policy, committing to address these gaps through surveys and cross-analysis.

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Session review

The current state of ECCE data presents both opportunities and challenges in understanding and enhancing early childhood development globally. The session overviewed tools, mechanisms, coverage, challenges and solutions. Through this overview, it became evident that there is a pressing need for more explicit technical guidance on measuring SDG indicators related to ECCE as one of the preliminary options and strategies ensuring better measurement and monitoring of progress. Additionally, efforts to enhance coverage of ECCE indicators and introduce new ones are under way, exploring strategies such as national SDG 4 benchmarking exercises and assessing the feasibility of new indicators to provide comprehensive insights into children's early learning and care environments. Collaboration and partnerships play a crucial role in securing qualitative data, emphasizing the importance of global partnerships in enhancing ECCE data collection, analysis and utilization for system transformation. By working together, stakeholders can address the gaps in data, ultimately improving outcomes for children worldwide. The session emphasized the transformative power of data and benchmarks in

improving ECCE globally, highlighting the need for comprehensive strategies to address data gaps, enhance quality and inclusivity, and foster global collaboration for sustainable progress.

Outcomes

The session emphasized the foundational importance of ECCE in fostering lifelong learning and development, with a particular focus on its role in securing better learning outcomes. The GEM Report conveyed that 72% of countries have submitted a national SDG 4 benchmark for indicator 4.2.2, showcasing significant progress in ECCE. However, the projection is that countries with benchmarks and data may be off track by 10% by 2025. Tools like the SDG 4 scorecard, UNICEF Early Childhood Development Index (ECDI) and Multiple Indicator Cluster Surveys (MICS), OECD Starting Strong Teaching and Learning International Survey (TALIS Starting Strong) and Programme for the Analysis of Educational Systems of the CONFEMEN Countries (PASEC) test results have ensured the availability of ECCE data. This was reflected in the experiences shared by Gambia and Côte d'Ivoire, who are making notable strides in utilizing quality ECCE data to inform both policy and practice.

Despite these advancements, challenges persist in ECCE data collection and utilization: 15% of countries still need to report ECCE data to the UNESCO Institute for Statistics (UIS), and according to UNICEF, only half of the countries worldwide have comparable data on early childhood education attendance. Questions about the adequacy of SDG indicator 4.2.2 were raised, given its limitations in fully capturing the scope of pre-primary education and its focus on school attendance rather than quality, inclusiveness and relevance of programmes. Another challenge is the diversity in data sources and the reliance on actual versus estimated data further complicates monitoring progress, introducing uncertainties and variabilities in data collection.

A consensus on the need to refine existing indicators emerged from the discussion, which could involve enhancing survey methodologies and integrating diverse data sources to address such challenges. Expanding SDG indicator 4.2.2 to encompass a broader range of early childhood organized learning programmes and ensuring consistency across countries were recommended. Additionally, leveraging administrative and survey data could provide a more comprehensive understanding, but the goal must still be strengthening administrative data and harmonizing tools and methodologies. Process data, such as educator-child interactions,

pedagogical practices and family involvement, were highlighted as crucial for assessing the quality of ECCE learning and environments.

During the discussion, an urgent need to harmonize data collection methodologies, develop new indicators to better represent early learning environments and family involvement, and strengthen technical capacities focusing on access, quality and inclusion were also emphasized. The Global Partnership Strategy for Early Childhood 2021-2030 could support those efforts and offer a basis for promoting international collaborations to improve ECCE data and indicators. The session ended with a call for continued dialogue and the development of a community of practice (CoP) focused on ECCE and data, aiming to address data shortage and leverage data for transforming ECCE systems.

Key takeaways from the session were the following:

1. **Critical role of benchmarking and data quality**: Establishing robust benchmarks and enhancing data quality and consistency across countries are fundamental to advancing ECCE, ensuring measurable progress and global standards.

2. **Inclusivity and high-quality ECCE measurement**: Prioritizing inclusion and quality data within ECCE programmes is essential. Achieving this requires a dual focus on monitoring access to ECCE while also measuring quality.

3. **Need for global collaboration and harmonization**: Strengthening international partnerships and harmonizing data collection methodologies are crucial for improving the collection, analysis and utilization of ECCE data, which will, in turn, inform and refine policy and practice on a global scale.

4. **Innovation through new indicators**: There is an urgent need to develop new indicators that accurately reflect early learning environments and family involvement, supporting a more nuanced understanding and approach to ECCE.

5. **UNESCO's strategic framework and community engagement**: Leveraging the Global Partnership Strategy for Early Childhood 2021-2030 as a foundation for international collaboration highlights the importance of continuous dialogue and the development of a community of practice. This collective effort aims to address data scarcity and harness data effectively to transform ECCE systems worldwide.

6. **Global collaboration and harmonization work**: Strengthening international partnerships and harmonizing data methodologies are essential for enhancing ECCE data

use globally. Leveraging the Global Partnership Strategy for Early Childhood 2021-2030 promotes continuous dialogue to overcome ECCE data shortage worldwide.

2. Higher education data production

Background

Investments in higher education are crucial for achieving the SDGs, including SDG 4. Building equitable, efficient and resilient higher education systems will provide the professional expertise needed for inclusive growth, which needs to be based on evidence-driven policy and practice. However, although extensively available for some cases, SDG 4-related higher education indicators are not systematically reported for other cases. For example, out of 212 countries or territories worldwide (including 194 UNESCO Member States and 12 Associate Members), 35 cases do not have statistics on gross tertiary education enrolment rate for the decade 2013-2022. In Africa, out of the 54 countries in the region, those reporting annual data to UIS decreased from 35 to 15 during the period 2013-2022 (UIS.Stat). High-quality data is critical to guiding thinking and action in advancing knowledge-based societies impacted by the digital and green transitions. Consequently, the higher education community needs to shape evidence-based programming, using reliable data and good practices.

The transformations experienced by higher education need to be expressed by data, whose production, dissemination and use need special attention. On the occasion of the 2022 UNESCO World Higher Education Conference (WHEC2022), held in Barcelona, Spain, a Higher Education Global Data Report was launched, including the official data available in 2022. Also, a background document on data and knowledge production was delivered. WHEC2022 offered some recommendations to be taken into consideration and stated that the debate must be led by changing trends in higher education as the foundation of addressing data-related issues in higher education:

- Understanding higher education from a human-rights approach and lifelong perspective.
- The need for data on equity policies in education to attend better to marginalized groups, including refugees.
- International mobility and recognition of studies.
- The increasing importance of flexibility in programme organization and how to account for enrolments and graduates.
- The balance between disciplinarity and interdisciplinarity, given the demands coming from the world of labour and needs for global citizens.

- The way the field of educational data is framed at the international level and the ways data and indicators are mobilized by specific agents led by their agendas and views.

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Session review

Data challenges in higher education, particularly in monitoring SDG indicator 4.3.2 "gross enrolment ratio for tertiary education by sex", are multifaceted and pose significant obstacles to achieving comprehensive insights. One notable issue is the lack of data concerning equity and marginalized populations, which hampers efforts to address disparities in educational access and attainment. Specifically, enrolment rates for young refugees in higher education remain underreported, hindering the development of targeted interventions to support their educational pathways. Moreover, the challenges are compounded in diversified systems with diverse student populations, making it difficult to accurately capture enrolment trends and outcomes. While comparative information is invaluable for higher education policymakers, its limitations, particularly in comparisons at the system level or case studies of institutions, underscore the complexities inherent in data interpretation and application. International collaboration emerges as a vital strategy for improving data quality and coverage in higher education, emphasizing the need for coordinated efforts to address data gaps and enhance the effectiveness of education policies and programmes worldwide.

Outcomes

"Transformation" is the horizon to which all SDGs aim to contribute, with the primary purpose of leaving no one behind. This transformation depends on new knowledge and competencies. Consequently, building equitable, efficient and resilient higher education systems is crucial for inclusive growth, which needs to be based on evidence-driven policy and practice.

Shared understanding of the challenges, needs and opportunities for information generation is critical to transforming higher education and its role in development. Solidarity and collaboration in this field are inescapable, as sharing efforts and seeking synergies will allow for faster progress, higher quality and more comparable and cost-effective information production.

Addressing the challenges in higher education requires a comprehensive approach that encompasses various aspects of learning and participation. First, understanding higher education from a lifelong learning perspective is crucial, as it entails recognizing education as a continuous journey rather than a finite phase. Equity issues also demand attention, particularly concerning the lack of reliable data on the participation of marginalized groups, including refugees, highlighting the need for inclusive data collection practices. Moreover, the landscape of higher education is rapidly evolving, characterized by massive expansion, diversification and flexibility, particularly in the Global South, where private providers play a significant role. This expansion brings forth challenges in measuring flexible learning pathways and coping with the growing international mobility of students. Overcoming critical barriers for reporting, such as technical weaknesses, lack of interest and capacity, timeliness and low-quality data, remains imperative, necessitating concerted efforts and resource allocation to ensure accurate and comprehensive data collection and analysis in the higher education sector.

Key takeaways from the session were the following:

1. Take care of what kind of comparative information is helpful to higher education policymakers.
2. Address equity issues, considering access to and persistence through tertiary education as a global concern requiring sustained commitment.
3. Pay special attention to the growing issue of refugees who should be in tertiary education, which needs extraordinary efforts to collect data.

4. Consider and analyse diverse institution types and delivery modes, allowing for access and choice, as well as articulated pathways for movement across the system.

5. Consider technology use and its impact on higher education provision, teaching and learning.

6. Consider efficiency and accountability to ensure that resources are strategically used to promote desired outcomes, both public and private.

7. Balance policy relevance with the burdens and costs of data collection, including taking into account essential institutional characteristics, student data, data with the highest policy relevance, and considering what data has high initial development cost but low subsequent maintenance cost, etc.

8. Build adaptive capacity or resilience, for institutions and systems to transform and nimbly take on challenges and turn them into opportunities for reflection, evaluation and evolution.

9. Continue the international dialogue on how educational data and information are constructed internationally, addressing current challenges and collaborating to tackle the corresponding challenges.

3. Technical and vocational education and training (TVET) and skills development

Background

Technical and vocational education and training (TVET) is an essential component of **lifelong learning and skills development** and a key factor for sustainable economic and social development. It provides individuals with the necessary skills and competencies to participate in the workforce and contribute to the digital and green transformation of national economies.

Sustainable Development Goal 4 (SDG 4), which aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030, recognizes the importance of TVET with three targets that refer to technical and vocational education: target 4.3 on equal access to affordable and quality TVET; target 4.4 on youth and adults with skills for employment, decent jobs and entrepreneurship; and target 4.5 on elimination of gender and other disparities at all levels of education and vocational training.

TVET is also linked to the achievement of **other SDGs**, including those focused on poverty reduction (SDG 1); gender equality (SDG 5); affordable and clean energy (SDG 7); decent work and economic growth (SDG 8); industry, innovation and infrastructure (SDG 9); reduced inequalities (SDG 10); sustainable cities and communities (SDG 11); responsible consumption and production (SDG 12); climate action (SDG 13); peace, justice and strong institutions (SDG 16); and global partnerships (SDG 17).

The collection, analysis and use of statistics on TVET is critical for the planning of skills development. TVET statistics provide essential information on the inputs, processes, outputs and outcomes of TVET systems and programmes, as well as the characteristics and needs of TVET learners and graduates. TVET statistics can support evidence-driven policy and practice by informing the design, implementation, monitoring and evaluation of TVET policies and interventions, as well as the identification of good practices and innovations. TVET data help to better understand the performance of different economic sectors, student achievement and learning outcomes, transition from school to work and gaps between skill supply and demand, among others.

Further development of TVET systems and their alignment with just, inclusive and sustainable development rely on **timely data from a range of sources**, including administrative records, household and labour force surveys, learning assessments and big data.

The monitoring framework for SDG 4 includes one indicator that mentions TVET: the **participation rate in technical-vocational programmes** (15- to 24-year-olds) by sex (SDG indicator 4.3.3). According to the *Global Education Monitoring Report 2023*, across 146 countries with data, participation in TVET programmes ranges from 0% to 36%. The lowest participation rates (less than 10%) are found primarily in the Caribbean, the Pacific and sub-Saharan Africa. The highest participation rates (more than 25%) are found almost exclusively in Europe.

Information on participation in TVET programmes provides only a partial picture of national TVET systems and their contribution to social and economic development. The **importance of comprehensive, up-to-date, relevant and reliable data and statistics on TVET and skills development** is increasingly recognized among TVET stakeholders worldwide. The second consultation on the implementation of UNESCO's Recommendation concerning Technical and Vocational Education and Training (2015) indicates that 83% of responding Member States reported investments in TVET management information systems in the last four years to enable monitoring of a diverse range of data, including real-time labour and employment data. The diversity of national TVET statistics creates opportunities to identify the features of TVET systems associated with better educational, labour market and social outcomes.

In spite of the importance of TVET statistics, their **availability, quality and use remain uneven across countries and regions**. Current challenges include:

- Lack of common definitions, standards and indicators.
- Inadequate coverage, comparability and timeliness of TVET data sources.
- Limited capacity and resources for TVET data management and quality assurance.

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Session review

The session assessed the current state of technical and vocational education and training (TVET) data collection and analysis, in view of measuring and monitoring progress towards SDG 4 using indicator 4.3.3. The session also provided a mapping of existing data sources on TVET and their coverage and thematic focus, including the main challenges and opportunities moving forward. Moreover, discussions delved into the implications of the linkages between skill supply and demand on data collection and analysis in the TVET sector. An exploration of innovative data sources for skills mapping was undertaken, particularly leveraging big data and artificial intelligence (AI), with a specific case study on the use of online job posting data. Additionally, the session facilitated the sharing of good practices and lessons learned regarding the collection, analysis, dissemination and utilization of data for the development of national TVET systems. Notably, it introduced new approaches to assess the outcomes of TVET programmes, including the launch of a pioneering large-scale assessment known as PISA-VET (Programme for International Student Assessment - Vocational Education and Training) by the OECD.

Outcomes

TVET is an essential component of lifelong learning that plays a key role in ensuring equitable, sustainable and peaceful individual, economic and social development. The **collection, analysis and use of statistics on TVET and skills development** provide essential information on the inputs, processes, outputs and outcomes of TVET systems and programmes, as well as the characteristics and needs of TVET learners and graduates. TVET statistics can support **evidence-driven policy and practice** by informing the design, implementation, monitoring and evaluation of TVET policies and interventions, as well as the identification of good practices and innovations. TVET data help to better understand the performance of different economic sectors, student achievement and learning outcomes, transition from school to work and gaps between skill supply and demand, among others.

In the monitoring framework for the Sustainable Development Goals, TVET is only monitored by one thematic indicator: SDG indicator 4.3.3, "participation rate in technical-vocational programmes (15- to 24-year-olds) by sex". The indicator is of limited use for policy guidance because of poor data coverage (only half of countries have an indicator value) and because of potential underreporting of participation in TVET: non-formal TVET is not

considered, and in International Standard Classification of Education (ISCED) 2011 there is no distinction between general and vocational/professional education in tertiary education at ISCED levels 6, 7 and 8.

UNESCO, in its Strategy for Technical and Vocational Education and Training (TVET) (2022-2029), proposes a more systematic approach to the use of TVET data:

1. **Collection and analysis of data from different sources** (including administrative records, employer and labour force surveys and big data) **and on various aspects of TVET** (including: access and participation; qualifications, skills and competencies; labour market outcomes; teachers and trainers; and financing).
2. **Development of a framework of key TVET indicators** for monitoring of skills development, as well as development of dedicated tools such as a **global skills tracker**.
3. Support of Member States for ethical and effective **use of TVET data for governance, management and delivery of education**.

Opportunities to improve the collection, analysis and use of data on TVET include the following:

1. **Encourage and support Member States to respond to the UIS Survey of Formal Education for SDG 4 Data,** to improve the availability of data for SDG indicator 4.3.3.
2. **Improve standard setting on TVET**: elaborate ISCED to distinguish better between general and vocational/professional programmes in tertiary education (ISCED levels 6, 7 and 8), and to describe non-formal education programmes better.
3. **Exploit additional data sources** (including big data) **and improve data availability** to capture the linkages between TVET and the labour market better.

These efforts will be supported by UIS, UNESCO's Section of Youth, Literacy and Skills Development and the UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training. **There is currently a positive momentum around TVET data**, in terms of international convergence of concepts and structures of TVET. Several organizations are collaborating on these issues, and with the coordination of UNESCO and the active participation of all Member States it will be possible to build on achieved results.

4. Adult learning and education

Background

Adult learning and education (ALE) are an integral part of the Sustainable Development Goal 4 (SDG 4), "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all".

At the Seventh International Conference on Adult Education (CONFINTEA VII) in June 2022, representatives from 140 UNESCO Member States adopted the Marrakech Framework for Action to harness the transformational power of adult learning and education. This text calls for targeted actions to advance the achievement of the SDG 4, including in the following areas:

- Implement reliable, valid, transparent and accessible gender-sensitive information systems for adult education, allowing the tracking of progress in participation and learner retention with a focus on under-served populations, as well as of facilitating the exchange of knowledge between government and non-governmental institutions, academia, civil society and Member States.
- Strengthen the role of governments in establishing mechanisms and regulations and in allocating financial and human resources to support structures to monitor adult education as a public and common good, in the context of an increasing diversity of ALE providers resulting from the emergence of complex learning ecosystems.
- Ensure evidence-based monitoring of progress towards national, regional and global benchmarks built on accountability, national ownership, participation and transparency.

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Session review

The session delved into how various aspects of adult learning and education (ALE) were monitored across global, regional and national levels. It identified key challenges faced in ensuring the availability of pertinent and high-quality data and statistics necessary for informing ALE policies and practices effectively. However, amidst those challenges, the session also illuminated numerous opportunities, ideas and potential partnerships aimed at enhancing data collection, production and management in ALE. Through active engagement and knowledge exchange, the session fostered a deeper understanding of how to use data effectively to improve policies and practices.

Outcomes

The following issues and key takeaways emerged from the session:

1. **Ensuring the availability of relevant and quality data and statistics in adult learning and education (ALE)** is key for achieving SDG 4. However, only 64% of the 152 countries participating in the 5th Global Report on Adult Learning and Education (GRALE) indicated progress in ALE monitoring and evaluation systems.

2. **Progress is far too slow to meet needs**. Reflecting chronic low public investment in ALE, **there is a shortage of quality ALE data and statistics** – not only cross-country comparative data for SDG 4 monitoring, but also data to understand the state of ALE and make ALE's impact on people's life and development visible. **ALE data management is also complex**, as ALE takes place in formal, non-formal and informal settings within and beyond the education sector, involving a range of actors.

3. **As indicated by adult literacy data, the current administrative data** based mainly on self-declaration **has limitations**. The median gap between directly measured literacy skills and self-reported skills of a given population is 15%. Yet only one out of three countries (33%) have conducted direct assessment of adult literacy skills. In Africa, the percentage is low as 7%.

4. To break this vicious circle, **the Marrakech Framework for Action**, adopted at the Seventh International Conference on Adult Education (2022), specifies some action areas including building information systems and enhancing data and statistics. The sixth GRALE will adopt a monitoring framework with 30 indicators aligned with the MFA.

5. **Countries and partners have developed initiatives to narrow the data gap.** The **OECD's Programme for the International Assessment of Adult Competencies (PIAAC**), which is in the second cycle, measures literacy, numeracy and other skills through a large-scale, direct household survey. Its comprehensive framework redefines human capital and covers the relations between skills development and social and economic outcomes. The **UIL's Action Research on Measuring Literacy Learning and Educational Alternatives (RAMAED)** monitors the quality of adult learning programmes in 12 African countries, measuring literacy and numeracy skills, as well as knowledge about everyday life. **Pix,** a non-profit, France-based organization, has **developed a platform for individual-based online assessment and certification of digital skills, which** facilitates learners' movement across different learning pathways.

6. **It is also important to use data and statistics more effectively to enhance monitoring, policies and interventions.** The French **National Agency for the Fight against Illiteracy (ANLCI)** conducts a daily life survey and a lifelong learning survey in France and intends to engage with local governments and overseas territories to promote foundational skills, using data for equitable allocation of funds. It also uses data for an observatory and the celebrations of Defence and Citizenship Day (France) and International Literacy Day. The **European Commission's work** links education and employment. The data is used for improving policies and programmes among other activities, such as the European Year of Skills (2023/2024).

7. **ALE monitoring is shifting towards direct measurement and consideration of various factors**, such as skills acquired through different learning pathways, links with socioeconomic outcomes, and contexts.

8. Beyond addressing the scarcity of available data, another area identified for future action is enhancing the ability of stakeholders to make **collection tools sufficiently flexible to**

adapt to the rapidly changing needs (upskilling, reskilling) **and learning modalities** (informal learning, artificial intelligence, etc.) of adults.

5. Education in emergencies

Background

A recent report found that an estimated 224 million crisis-affected school-age children were in urgent need of education support, with 72 million, or 32% of them, being out of school and 127 million, or 57% of them, in school but not achieving minimum proficiency in reading or mathematics (Education Cannot Wait, 2023). Providing quality education for all crisis-affected children requires rigorous data and evidence to understand the needs of crisis-affected communities and how education systems should prepare for and respond to crises. Timely, reliable, and disaggregated education statistics are key to informing policies and programmes tailored to the specific needs of crisis-affected population groups. This means that data: (1) reflect the impact of crises in a timely manner; (2) capture the situation of all children and adolescents, including those affected by conflict, natural hazards, and forced displacement; and (3) are disaggregated, including by protection status.

At the country level

It is challenging for governments to reflect the impact of crises on education participation and learning outcomes of affected populations. Routine administrative or survey mechanisms often fail to continue functioning during humanitarian crises and yet governments differ in the extent to which they recognize that some regions or populations may be excluded from official statistics.

In large internal displacement contexts, education management information systems often fail to adequately capture student-level data, and thus transfers across schools are not recorded. Refugee contexts create additional challenges with respect to whether they are captured at all in a government data system, and if so, how. Non-formal education or distance learning modalities often bridge disruptions in education access following shocks, but regular data tools may not take those services into account.

Various needs assessments are often introduced but it is hard to combine and integrate their findings in official statistical reports. Some progress has been made towards interoperability of data initiatives in crisis-affected countries, facilitated by strong partnerships between governments and international humanitarian and development agencies. In countries affected by natural hazards and conflicts, education clusters are platforms comprising national and

international organizations and ministries of education that provide humanitarian support to internally displaced and host populations. Education clusters, both at the country and global levels, are mandated by the Inter-Agency Standing Committee (IASC) to coordinate this humanitarian response in areas where the State may be absent, party to the conflict or not have the resources to identify needs and provide education services. One of the key areas that education clusters lead on a yearly basis, reported globally through humanitarian needs overviews and the monitoring of humanitarian response plans, is the estimation of the number of people in need of education and the number of people reached by education services. The people in need estimation methodology relies on education management information systems, multi-sectoral and sectoral assessments for education, and analysis gaps on access to education (enrolment and attendance), learning conditions, protective environments and individually aggravating circumstances. This calculation reflects numbers of children in need of education support in countries affected by humanitarian crises and are endorsed by national authorities in almost all contexts.

In contexts where refugees are being hosted, the Office of the United Nations High Commissioner for Refugees (UNHCR) 2030 refugee education strategy advocates for the inclusion of learners in national education systems. Yet, the average length of forced displacement is estimated at between 10 and 26 years (Ferris, 2018). Refugee data therefore sit at the intersection of the humanitarian and development response:

- Where refugees are accessing government schools, or schools attended by refugees are recognized by national ministries of education, national education management information systems capture refugee students but cannot track their education outcomes without effective disaggregation by protection status and/or useful proxy (e.g., nationality).
- Where refugees are not accessing government schools, UNHCR and/or implementing partners are administering the education response but approaches to education data collection are not harmonized. In addition, dimensions of education other than access to school, such as quality, school environments and learning outcomes, are often ignored (UNESCO and UNHCR, 2023).

At the global level

These challenges at the country level affect estimates at the global level. Global SDG 4 databases, for instance on indicators such as out-of-school rates and numbers, may not reflect the full impact of crises on affected populations, in the absence of a standardized approach and more coherent data reporting across humanitarian and development institutions.

An initiative to strengthen the education data ecosystem in crisis contexts is led by the Inter-Agency Network for Education in Emergencies (INEE) together with key partners including Education Cannot Wait (ECW), International Rescue Committee (IRC), Foreign, Commonwealth and Development Office (FCDO), Network for international policies and cooperation in education and training (NORRAG), UNHCR, UNICEF, UNESCO, Global Affairs Canada, and the Geneva Global Hub for Education in Emergencies (EiE). In June 2023, representatives from around 200 organizations gathered at a summit in Geneva to discuss and agree on ways to strengthen the data and evidence ecosystem. As part of its action agenda, emerging priority areas include leadership, coordination, standardized methodologies and core indicators, and equity and inclusion. It is envisaged that this collective work, supported by INEE's EiE Data Working Group (which includes: workstreams on global estimates; data sharing, analysis and use; joint monitoring and evaluation; and data standards), will inform the work of the Technical Cooperation Group on the Indicators for SDG 4 - Education 2030.

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Session review

The session discussed strengthening the integration and institutionalization of education in emergencies and protracted crises (EiEPC) data in the education data systems of Member States.

Outcomes

The session brought together key stakeholders of the EiEPC data ecosystem to discuss progress, challenges and lessons learned from UNESCO Member States' efforts to produce and share education data and statistics related to crises, conflicts and forced displacement.

The session identified the following five recommendations:

1. **Commit and collaborate:** Panellists stressed the importance of producing and sharing standardized and comparable EiEPC data on key indicators. Solutions will require strong collaboration between governments, development and humanitarian partners.

2. **Leverage data better from different sources:** The panellists acknowledged that we need to make better use of all available data. A myriad of data is collected by different actors, but they are not combined to produce education statistics that adequately reflect the impact of crises or that are specific to crisis-affected children, including refugees.

3. **Develop shared definitions, protocols and standards:** As a first step, a set of key EiEPC indicators that would help improve preparedness, response and recovery efforts in EiEPC contexts should be identified and defined. Efforts should build upon and make use of the new resources recently produced by UNESCO's International Institute for

Educational Planning (IIEP), including a conceptual framework, toolkit and guidance note for EiEPC data system strengthening, among other resources. Once identified, clear standards and protocols for the production and sharing of estimates for these key indicators are needed. This will facilitate increased interoperability across data sets and initiatives, and allow merging, triangulating and synthesizing the data from different data sources. Piloting of these EiEPC data strengthening initiatives is advisable, with lessons learned well documented and shared across countries. Revisions of the definitions, standards and protocols based on the lessons learned should be made possible.

4. **Develop and implement support mechanisms:** Humanitarian and development partners could propose well-coordinated mechanisms to support Member States in strengthening their systems for EiEPC data production and sharing, in line with the agreed definitions, standards and protocols.

5. **Improve global reporting on crisis-affected countries:** Agencies involved in global education reporting could consider more nuanced reporting to better capture the education situation of countries affected by large-scale crises and forced displacement, e.g. the GEM Report.

To take forward these action points, the existing networks related to EiE data and statistics, notably INEE's EiE Data Working Group as well as the Building Evidence in Education (BE2) Special Interest Group on EiE, should be leveraged. It is proposed that the proceedings and recommendations from these networks are considered and deliberated within the Technical Cooperation Group (TCG) as facilitated by UIS.

6. High-quality data on gender equality in and through education

Background

At the Transforming Education Summit in September 2022, governments and their partners called for targeted actions to advance the achievement of Sustainable Development Goal 4, gender equality and girls' and women's empowerment in and through education, including in the following areas:

- Transform data systems, and expand innovative and non-traditional data collection, to generate sex- and age-disaggregated data better and understand the intersections between gender and other characteristics such as disability or ethnicity that compound and lead to marginalization, inequality and learning poverty, and use data to take targeted action to leave no one behind.
- Ensure evidence-based monitoring of progress towards national, regional and global benchmarks built on accountability, national ownership, participation and transparency, within the SDG 4-Education 2030 High-Level Steering Committee, the Global Platform for Gender Equality and Girls' and Women's Empowerment in and through Education and other mechanisms.
- Support countries to increase the availability and use of disaggregated data, gender assessments, gender budgeting and other means to inform planning, costing and implementation of gender-transformative education and reach the most marginalized.

In October 2023, as a follow up to the Transforming Education Summit, a meeting on advancing gender equality in and through education through high-quality data, organized by UNESCO and the Centre for Education and International Development at University College London, brought together key initiatives and actors to discuss how to best support governments to make informed decisions based on high-quality data on gender equality in and through education.

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Session review

The session provided an overview of the key challenges facing the collection and utilization of data related to gender equality in and through education. Participants highlighted the complexities inherent in benchmarking gender equality indicators within the framework of SDG 4. Insights were shared on the diverse sources of data, including household surveys, and the importance of integrating quantitative and qualitative data to gain a nuanced understanding of gender dynamics in education. Furthermore, discussions underscored the crucial role of accountability mechanisms in driving meaningful change and promoting gender-transformative education practices.

Outcomes

The session discussed global and national challenges around data on gender equality in and through education.

During the session it was highlighted as a **main issue** that the global indicators under SDG 4 focused on measures of gender parity and not gender equality. All global indicators under SDG 4 were disaggregated by sex except for the indicators on completion and information and communications technology (ICT) skills. Overall, those indicators had several weaknesses. They missed: (1) measuring the timeliness of completion; (2) disaggregation by intersecting characteristics; (3) adequate interpretation of the learning gap; and (4) a differentiated measure of learning proficiency. The session also revealed that in the benchmarking process only 36% of countries submitted a national benchmark for the indicator on the gender gap in the completion rate in upper secondary education. Difficulties in setting a national benchmark included lack of data and quality of data.

The session highlighted several **solutions and innovations**. Household and economic surveys could help towards understanding socioeconomic aspects of educational access, retention and learning outcomes, providing information on gender and other intersections. At the same time, we need to go beyond household surveys and include other data sources.

One innovation to expand high-quality data was the Accountability for Gender Equality in Education (AGEE) initiative led by UCL. The initiative aimed to address the disconnect between global, national and local data collection and analysis processes, identify missing data and use participatory methods to collect and analyse data. New work was forthcoming in Indonesia, Kenya and Malawi with UCL and UNESCO through a pre-approved Global Partnership for Education Knowledge and Innovation Exchange (GPE KIX) grant.

Another innovation shared at the session was the Global Accountability Dashboard which was monitoring progress against key indicators on gender-transformative education, established through the Transforming Education Summit. Launched in 2023 by UNESCO and hosted by the Population Council, the Dashboard included profiles for 193 countries, over 900 programme profiles, and featured work. It would continue to track progress through 2027. The Global Accountability Dashboard was part of the Global Platform for Gender Equality in and through Education, co-led by UNESCO and UNICEF. It complemented and deepened the Transforming Education Summit Dashboard of Country Commitments and Actions to Transform Education, which monitored countries' actions against the national statements of commitment they had made at the Summit.

The recommendations from the Paris meeting on advancing gender equality in and through education through high-quality data were shared:

(1) **How to measure what matters:** Include the voice of all stakeholders, including girls, boys, non-binary children, teachers, civil society organizations (CSOs) – particularly women's rights, gender justice and youth organizations – and researchers on what is important to measure on gender equality in and through education.

(2) **How to understand the problem:** Develop indicators beyond parity to consider the historical and contemporary gendered structures, relationships and norms that cause and perpetuate gender bias and inequalities in education policies, institutions, systems, curriculum, practices and experiences.

(3) **How to enable and collaborate**: Strengthen the capacities of education administrations, statistical offices, and civil society actors, together with education institutions, including in crisis contexts to share and evaluate knowledge, and collect, analyse and use quantitative and qualitative data on gender equality in and through education.

(4) **How to prepare the ground and sustain initiatives:** Understand the roots of backlash against gender equality in and through education and exchange good practice on how to best address it sustainably.

(5) **How to impact policy:** Strengthen the data-policy interface to ensure that policymakers undertake informed use of data on gender equality in and through education in their policies and programmes.

(6) **How to prepare for the future**: Apply gender-transformative approaches to the collection and use of education data, including intersectionality and an appraisal of current injustices, using principles of feminist data and evidence to provide a holistic picture of today and an assessment for future decades to contribute to post-2030 global agendas.

Finally, the session outlined the following **future directions** for better data on gender equality in and through education:

1. Expand access to sex-disaggregated and intersectional data at sub-national, national, regional and global levels;
2. Expand the level of ambition to measure what matters and what works to advance gender equality in and through education;

3. Expand conceptualization of gender to move beyond women/girls and consider how gender norms, expectations and structures influence all persons' educational access, retention and learning outcomes;

4. Focus on comparability and consistency of data, while also looking for innovations and raising ambition on the quality, quantity and intersectionality of data;

5. Support coordination across statistical, ministerial and other groups, including the voices of young people, CSOs, teachers and other key stakeholders;

6. Build capacity to collect, understand and use data on gender equality in and through education in benchmarking, planning, programmes and policymaking.

7. Sound data for good governance

Background

A strong national data system is a prerequisite to monitoring national education outcomes and sector performance and for effective education sector governance. However, many countries face difficulties in data collection, processing, storage and analysis. Fewer than half of the Global Partnership for Education (GPE) partner developing countries gather, communicate and utilize sufficient education data (GPE, 2019).

The limited structural capacities in education management are holding many countries back from the benefits of real-time data management in education and progressing towards the achievement of SDG 4. Given the importance of evidence-based and crisis-resilient planning and management in today's unpredictable world, **strengthening national educational management information systems (EMIS) should be a top priority** and a core component of education reforms and transformation efforts. Without an integrated data architecture for education management, monitoring and planning, education stakeholders are left to fly blind, unable to ensure the sustainability and effectiveness of their management and planning.

While requirements for national alignment with international standards and methodologies were defined by UIS, the question still remains as to **how to set up, maintain and keep abreast national EMIS** able to effectively serve increasingly complex or unaddressed managerial requirements at national and sub-national levels as well as meet national and international monitoring requirements such as SDG 4.

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Session review

The session highlighted the vital role played by effective national educational management information systems (EMIS) as a prerequisite for international reporting on education. Participants delved into the purpose and defining characteristics of EMIS, highlighting their significance in facilitating data-driven decision-making and policy formulation at the national level. Insights were shared regarding global trends in EMIS implementations, with a focus on recent transformations and innovations. However, discussions also illuminated the complexities and challenges inherent in the modernization of EMIS, including issues related to infrastructure, capacity building and interoperability. Moreover, the session underscored the importance of international, regional and local initiatives in supporting Member States in strengthening their EMIS capabilities, fostering collaboration and knowledge exchange to address common challenges and promote best practices. Through active engagement and shared experiences, participants gained valuable insights into the pivotal role of EMIS in advancing education agendas globally and the imperative of continuous improvement and adaptation in response to evolving needs and technological advancements.

Outcomes

The session focused on the critical importance for Member States to develop strong national information systems in education, essential for addressing increasingly complex managerial requirements and fulfilling national and international monitoring obligations, such as those outlined in SDG 4.

The session provided an exhaustive exploration of EMIS definitions and stressed the necessity for system-wide and sector-wide integration of education data architecture. With EMIS transformation pathways rapidly evolving, Member States are increasingly investing in the digitalization of their national education monitoring and administrative management processes to enhance the precision and timeliness of data flows, thereby enabling evidence-informed decision-making.

Later, the session highlighted innovative global solutions and best practices, such as Latvia's longitudinal monitoring of student performance via digital adaptive testing, Brazil's "connected education" initiative, and Estonia's holistic digital education strategy. Those examples illustrated the transformative potential of technology in data collection, analysis and usage within education. However, discussions also illuminated the need for tackling issues such as interoperability through standardization, boosting connectivity (especially in remote areas) and unifying data from various sources to forge a more cohesive and efficient EMIS.

Looking ahead, the session articulated strategies for the advancement and innovation within EMIS, emphasizing the critical adoption of unique student identifiers to accurately track educational trajectories, the establishment of feedback mechanisms providing educators with actionable insights, the necessity for innovative diagnostic evaluations of EMIS capabilities, and implementation of stringent data protection laws to ensure privacy and rights in digital education ecosystems.

In conclusion, the session proposed a vision for a holistic modernization of EMIS, synergizing technological progress with profound investment in capacity building, policy development and global cooperation.

The key takeaways from the session were the following:

1. **Prioritize enhancing EMIS within educational reforms** to support data-driven policymaking.
2. **Necessity of system-wide and sector-wide integration of education data architecture** to improve management and decision-making processes.
3. **Addressing interoperability and enhancing connectivity**, particularly in less accessible areas, are critical, underscoring the need for standardization across EMIS platforms.

4. **Establishing feedback mechanisms for stakeholders and conducting regular diagnostic assessments** are vital steps to assess and improve EMIS capabilities continually, ensuring systems remain effective and responsive to evolving educational needs.

5. **Prioritizing data privacy** through the enforcement of stringent data protection laws is essential to safeguarding privacy within digital education ecosystems.

6. **Leveraging technological innovations**, such as digital adaptive testing and connected education initiatives, is crucial to improving data collection and utilization, drawing on global best practices.

7. **Recognizing that the effective construction of EMIS transcends technological solutions** and requires a robust enabling environment that harmonizes institutional, organizational and human dimensions.

8. **Adopting holistic EMIS modernization strategies is a necessity**, integrating technological advancements with significant investments in capacity building, policy development and international collaboration to ensure the education monitoring system is future ready.

8. Effective data-driven decision-making

Background

A strong national data system is a prerequisite to monitoring and achieving SDG 4. Reporting on SDG 4 requires national alignment to international standards and methodologies defined by UIS: but what about the internal capacity of Member States to set up, maintain, and keep abreast their national educational management information system (EMIS)? Also, how can these data help policymakers to make decisions for better outcomes?

Since the introduction of internationally agreed goals and objectives for the education sector, and the selection of UNESCO as the lead agency for the monitoring of the achievement of said goals, it has been the responsibility of Member States to report annually their progress on the different targets by submitting data to UIS via the international education survey questionnaires. UNESCO's International Institute for Educational Planning (IIEP) is responsible for supporting Member States with its unique mandate to support national production and use of data to implement, monitor and evaluate national policies, and to improve educational planning and management.

The quality of the data reported to UIS (including timeliness and coverage) is a proxy of the national capacity to set up and maintain a strong data system, commonly referred to as EMIS.

National data production, its management and its use for governance can only be good if the whole chain of actors involved in these activities is efficient and if actors work in synergy with one another. Without adequate capacity to produce nationally relevant data, the education system as a whole cannot be planned nor managed, and none of the SDG 4 targets can be reported on, let alone achieved.

Therefore, reporting on SDG 4 requires strong and capable national data systems, and these systems need constant strengthening and updating to ensure their relevance and efficiency.

Photo credit: ©UNESCO/Sacha HERON

Session review

The session delved into the roots of constraints hindering the utilization of data for policy improvement, pinpointing sub-optimal capacities within ministries of education at various administrative levels as a significant contributing factor. Participants underscored the imperative of bridging the gap between data and evidence availability and its utilization in policy formulation, formal action and implementation. This gap can be bridged – at least partially – through free open source and open access to said data and evidence, technical cooperation and training. Moreover, discussions highlighted the importance of integrating diverse national, official, or public sources of data and information, both within the education sector (school census, learning assessment, inspection reports) and beyond the sector (geospatial data, climate data, conflict data), to facilitate contextualized planning and better resource allocation. In turn, this can lead to:

- greater equity in the distribution of educational opportunities;
- better adaptation of these opportunities to the needs of local communities;
- more efficient use of all available resources.

Ultimately, such efforts can enhance countries' prospects of achieving SDG 4.

Outcomes

IIEP and the OECD presented a joint project strengthening the institutional capacity of ministries of education to use data and evidence to effectively inform policy and practice. The project does

this through an innovative and scalable approach which has at its centre a new institutional capacity assessment framework (ICAF) and associated toolkit designed to empower ministries of education to use data and research effectively and systematically in policy design and implementation. The presentation was followed by experience sharing from Pakistan (IIEP) and Latvia (OECD).

Then, IIEP presented its approach to strengthening ministries of education capacities for the use of crisis-related data and information, including through using data from ministries of environment and natural resources, or ministries of disaster management.

Governments, humanitarian and development partners are increasingly recognizing the need to adopt evidence-informed risk reduction strategies and to plan for continued delivery of quality education in emergencies. Crisis-sensitive planning requires timely and reliable data to quantify and to describe the extent to which crises, including those owed to climate change, affect education systems, particularly the supply and demand for education.

Finally, cross-referencing data from the education system with geospatial information enables educational planners and managers to develop highly contextualized policies that ensure that the education system is responsive to the needs of local communities.

Togo presented its work in microplanning and school mapping and its dashboard for decision makers, and showed how the use of free, open-source software combined with an avalanche of geospatial data makes it possible to process large amounts of highly precise information at low cost.

The panel closed with remarks on the necessary strengthening of the whole data system, starting from the school up to the central level.

It would not only improve national reporting against national benchmarks, but also help towards achieving SDG 4 goals by empowering ministries to use and analyse data to design policies and interventions that level disparities across education levels and administrative levels, strengthen monitoring and inform policymaking.

Key takeaways from the session were the following:

1. Necessity to strengthen the institutional capacity of ministries of education to use data and evidence to effectively inform policy and practice.

2. Necessity to support ministries of education to use data and information on risks of crises: technical support and guidelines and toolkit for the inclusion of EiE data in the EMIS.

3. Integrating data beyond those of the education sector, such as geospatial data, enables for more targeted and equitable interventions.

Way forward

Moving forward, a few overarching directions emerged from the discussions across the eight parallel sessions illuminating a path forward for enhancing the collection, analysis and utilization of education data.

(1) Take a lifelong learning perspective

A fundamental shift towards a lifelong learning perspective emerged as a critical imperative in the realm of education data and statistics. This perspective underscores the need for comprehensive data collection strategies that encompass diverse learning contexts and modalities.

(2) Refine existing indicators and harmonize different approaches

To accurately assess progress towards educational goals, there is a pressing need to refine existing indicators while harmonizing definitions/standards and data collection approaches. This entails standardizing terminology and methodologies to ensure consistency and comparability across jurisdictions. For example, during the session on TVET and skills development, the need was recognized to elaborate ISCED to distinguish better between general and vocational/professional programmes in tertiary education (ISCED levels 6, 7, 8), and to describe non-formal education programmes better. At the session on data-driven insights and transformative solutions in ECCE, a consensus was reached on the need to refine existing indicators in relation to ECCE, and the goal to harmonize tools and methodologies, which could involve enhancing survey methodologies and integrating diverse data sources.

(3) Develop new indicators to meet evolving demands

The development of new indicators tailored to meet evolving demands is essential. These indicators should reflect emerging priorities, thereby providing a more comprehensive and nuanced understanding of educational outcomes. For instance, in higher education, new indicators are needed to capture the current trends in the field, such as massive expansion, the diversification of providers, the flexibility of learning pathways, as well as increasing international mobility.

(4) Enhance data availability and quality

Ensuring the availability and quality of education data is paramount for informed decision-making and effective policy formulation. Leveraging platforms like the educational management information system (EMIS) can facilitate the systematic collection, analysis and dissemination of education-related data at national and subnational levels. Furthermore, diversifying data sources beyond traditional administrative records to include household surveys as an example can enrich data sets and provide a more holistic picture. Encouraging Member States to report timely and accurate data, coupled with capacity building initiatives to strengthen data management capabilities, is crucial for improving data quality and reliability.

(5) Promote data on gender equality in and through education

Addressing gender disparities in education requires a concerted effort to collect and analyse sex-disaggregated data. This involves disaggregating education indicators by gender to identify disparities in access, participation and learning outcomes. Moreover, there is a need to elevate the level of ambition in measuring progress by focusing on what truly matters and what strategies effectively advance gender equality in education. This includes expanding the conceptualization of gender beyond binary notions and acknowledging how gender norms and structures impact educational access and outcomes for all individuals.

(6) Leverage education data in emergencies to build resilience

First, there is an emphasis on committing to produce standardized and comparable education in emergencies and protracted crises (EiEPC) data and to improve data availability by diversifying sources and building capacity, in order to generate comprehensive education statistics reflecting the impact of crises, particularly on affected children. Second, there is a need to improve global reporting on crisis-affected countries, advocating for more nuanced reporting to capture the education situation in these contexts. Lastly, the existing networks related to EiE data and statistics should be leveraged, notably INEE's EiE Data Working Group as well as the Building Evidence in Education (BE2) Special Interest Group on EiE.

(7) Use education data for good governance and effective decision-making

By harnessing comprehensive and accurate data, policymakers and stakeholders can gain insights into the strengths, challenges and disparities within education systems. This data-driven approach enables governments to identify priority areas for intervention, allocate resources efficiently and monitor the impact of policies over time. Moreover, education data facilitates evidence-based decision-making by providing empirical support for proposed initiatives and reforms. By analysing trends, patterns and outcomes, decision makers can tailor interventions to address specific needs and maximize the effectiveness of interventions. Additionally, transparency and accountability are fostered through the dissemination of education data, empowering citizens to hold authorities accountable for their actions and outcomes. Ultimately, the strategic use of education data enables governments to uphold the principles of good governance, promote social justice and ensure quality education for all.

(8) Foster international collaboration and partnership

Collaboration and partnership at the international level are essential for advancing education data and statistics agendas. By sharing best practices, resources and expertise, countries can collectively address common challenges and accelerate progress towards global education goals. International collaboration can also facilitate cross-border data sharing and comparative analysis, enabling countries to learn from each other's experiences and adopt evidence-based policies and practices. Moreover, fostering partnerships between governments, academia, civil society and the private sector can leverage diverse perspectives and innovative solutions to enhance the effectiveness of education data initiatives.

Through embracing these future directions, stakeholders can unlock the full potential of education data to inform policies and practices, identify the right path to transform education systems and ultimately, empower individuals and communities to thrive in an equitable and inclusive future.

Annex 1: Concept notes

1. Data-driven insights and transformative solutions in early childhood education

   English | French | Spanish

2. Higher education data production

   English | French | Spanish

3. Technical and vocational education and training (TVET) and skills development

   English | French | Spanish

4. Adult learning and education

   English | French | Spanish

5. Education in emergencies

   English | French | Spanish

6. High-quality data on gender equality in and through education

   English | French | Spanish

7. Sound data for good governance

   English | French | Spanish

8. Effective data-driven decision-making

Annex 2: Presentations

1. Data-driven insights and transformative solutions in early childhood education

   Slides

2. Higher education data production

   Slides

3. Technical and vocational education and training (TVET) and skills development

   Slides

4. Adult learning and education

   Slides

5. Education in emergencies

   Slides

6. High-quality data on gender equality in and through education

   Slides

7. Sound data for good governance

   Slides

8. Effective data-driven decision-making

   Slides