To improve learning outcomes, policy-makers need to know what students are learning and what needs to be improved. Assessing learning is an essential part of measuring educational achievement, evaluating national education systems, and monitoring progress towards Sustainable Development Goal (SDG) 4.

Tests and examinations

**Classroom tests** may be formative or summative, depending on how the results are used. Formative tests are diagnostic and enable teachers to determine what learning is taking place to make any necessary adaptations to their teaching programmes. Formative assessments take a variety of forms, including homework, quizzes, projects, and presentations. Summative tests are conducted at the end of a unit, term, or year, and determine whether students have acquired the required knowledge and skills. Summative assessments are further used to obtain information on the effectiveness of a teaching programme.

**Public examinations** typically certify that a student has attained a certain level in their studies and enable selection to the next stage of education. Examination results can further be used to assess whether schools are implementing the curriculum and whether teachers are delivering appropriate instruction.

Large-scale assessments

National, regional, and international large-scale assessments can be used to evaluate the output of an education system through instruments that provide evidence about the levels of student achievement in specific learning domains. National assessments can be used for system-level analyses within countries. Regional and international assessments (cross-national assessments) can be used for comparative assessment across countries. They typically evaluate a statistically representative sample of students and collect background information about students, teachers, and learning environments. This data can be analysed and correlated to inform policy decisions, such as the reason for some students performing better than others.

The UNESCO Institute for Statistics (UIS) identified nine cross-national learning assessments that meet the criteria for measuring SDG 4 Indicator 4.1.1, namely the proportion of children and young
people achieving minimum proficiency in reading and mathematics (UNESCO-UIS, 2018).

International large-scale assessments

Programme for International Student Assessment (PISA)

The Organisation for Economic Co-operation and Development (OECD) programme PISA tests the skills and knowledge of 15-year-old students. Every three years, students from randomly selected schools take tests in reading, mathematics, and science, with an additional focus on one subject in each year of assessment. PISA tests assess to what extent students can apply their knowledge to real-life situations. Contextual information is collected through background questionnaires. In response to the disrupted learning during the COVID-19 pandemic, the 2021 and 2024 assessments were postponed to 2022 and 2025, respectively.

Trends in International Mathematics and Science Study (TIMSS)

TIMSS is conducted every four years by the International Association for the Evaluation of Educational Achievement (IEA). The assessment measures mathematics and science achievement at Grades 4 and 8. In addition, TIMSS collects information on the curriculum and the implementation thereof, instructional practices, and school resources. The most recent round of testing in 2019 began a transition to digital assessment. The next cycle in 2023 will complete the transition. For countries where students are still developing fundamental mathematics skills, TIMSS Numeracy assessment (designed to be administered at Grades 4, 5 or 6) concentrates on measuring numeracy learning outcomes, including fundamental mathematical knowledge, procedures, and problem-solving strategies. TIMSS Advanced measures trends in advanced mathematics and physics for final year secondary-school students.

Progress in International Reading Literacy Study (PIRLS)

PIRLS assesses students’ reading comprehension and is conducted by the IEA every five years. It provides internationally comparable data about how well children read at the end of Grade 4. The study further collects information about home support, instructional practices, and school resources in each participating country. The transition to digital assessment began in 2016. PIRLS Literacy, known earlier as pre PIRLS, is based on the same view of reading comprehension as PIRLS but is designed to test basic reading skills in countries where most children are still developing fundamental reading skills. PIRLS Literacy can be administered at Grades 4, 5 or 6 and gives countries the opportunity to benchmark against the regular PIRLS test.

Literacy and Numeracy Assessment (LaNA)

LaNA is a short assessment developed by the IEA that is administered at the end of primary school. LaNA is intended as a steppingstone in countries where TIMSS and PIRLS may be unfeasible to implement. Participation in LaNA enables international comparison of students’ literacy and numeracy skills and provides an additional way of monitoring progress towards SDG 4.1.1.

Regional learning assessments

The Southern and Eastern Africa Consortium for Monitoring Education Quality (SEACMEQ)

SEACMEQ brings 16 ministries of education in southern and eastern Africa together to share
experiences and expertise in the monitoring and evaluation of policies on school conditions and the quality of education. SEACMEQ research projects assess schooling conditions and performance levels of students and teachers in literacy and numeracy, as well as levels of basic health knowledge.

Programme for the Analysis of Education Systems (PASEC)

PASEC is a regional assessment tool for 14 francophone countries in West Africa and Asia, conducted by the Conférence des ministres de l’Éducation des États et gouvernements de la Francophonie (CONFEMEN). It provides information about the performance of education systems at the beginning and end of primary school. In addition, PASEC carries out comparative evaluations across its member countries. The latest assessment occurred in 2019.

Regional Comparative and Explanatory Study (ERCE)

ERCE is a large-scale study of learning achievement coordinated by the Latin American Laboratory for Assessment of the Quality of Education (LLECE), which is based in the UNESCO Regional Bureau for Education in Latin America and the Caribbean. From the initial focus on reading and mathematics, the approach has expanded to other areas, for example, natural sciences and global citizenship education. LLECE assessments further aim to identify the factors associated with different levels of achievement, such as the socioeconomic context, family life and personal issues, educational policies, and school processes. The latest round took place in 2019.

Southeast Asia Primary Learning Metrics (SEA-PLM)

SEA-PLM was developed in partnership with the Southeast Asian Ministers of Education Organization (SEAMEO), UNICEF, and the Australian Council for Education Research (ACER). It is intended to build capacity and improve educational achievement in Southeast Asian countries. SEA-PLM provides a common approach to assessing learning outcomes at Grade 5 in reading, writing, and mathematics. First administered in 2019, SEA PLM revealed a wide range of student achievement in the six participating countries. Future cycles will track progress on regional education goals as well as SDG 4.1.1.

Pacific Islands Literacy and Numeracy Assessment (PILNA)

PILNA provides data on the literacy and numeracy outcomes of students in at least 12 Pacific island countries. The test assesses students who have completed four years of formal schooling (usually Grade 4 or 5) and six years of formal schooling (usually Grade 6 or 7). The Educational Quality and Assessment Programme (EQAP) of the Pacific Community administers the test. It was last administered in 2018.

To enable comparability between regional assessments such as PASEC and ERCE and the international assessments such as TIMSS and PIRLS, UIS has developed the Rosetta Stone to monitor SDG 4.1.1.

Other international assessments

PISA for Development

The OECD PISA for Development aims to encourage the use of PISA assessments to monitor progress towards nationally set targets for education improvement in low- and middle-income
countries. It is also designed to track international education targets in the Education 2030 framework.

Teaching and Learning International Survey (TALIS)

The OECD TALIS is an international, large-scale survey of the teaching workforce, conditions of teaching, and learning environments of schools. The study aims to provide comparable policy information regarding conditions of teaching and learning environments in participating countries. Most recently conducted in 2018, TALIS highlighted the need to attract strong candidates to the teaching profession, elevate the status of the teaching profession, and retain high-quality educators through job satisfaction and continued professional development.

International Civic and Citizenship Education Study (ICCS)

This IEA study assesses students at the end of Grade 8. ICCS reports on students’ knowledge and understanding of concepts and issues related to civics and citizenship, as well as their beliefs, attitudes, and behaviours.

International Computer and Information Literacy Study (ICILS)

ICILS is an international comparative study conducted by the IEA. It is designed to evaluate students’ ability to use computers to investigate, create, and communicate to participate effectively at home, at school, and in the workplace and community. The study is aimed at students at the end of Grade 8.

Household and citizen-led learning assessments

SDG 4 highlights the importance of learning for all and emphasizes marginalized populations. Household surveys and citizen-led learning assessments can reach marginalized students who have dropped out of or have never entered the formal schooling system. These surveys are generally based on a representative sample of a population.

People’s Action for Learning (PAL) Network

The citizen-led assessment movement began in 2005 in India with the Annual Status of Education Report (ASER) by Pratham. The PAL Network now brings together organizations from 15 countries across three continents implementing citizen-led assessments of children’s basic reading and numeracy competencies. In 2019, the International Common Assessment of Numeracy (ICAN) tool was developed to provide internationally comparable data to track progress on SDG 4.1.1. A new common assessment initiative, namely the Early Language, Literacy and Numeracy Assessment (ELANA), is under development to target children between the ages of 4 and 10 to assess foundational numeracy skills, oral language, and reading comprehension.

Demographic and Health Surveys (DHS)

The DHS is supported by USAID and collects, analyses, and disseminates data on a variety of topics including levels of educational achievement and literacy in over 90 countries. Data are accessible to all and intended for use in research, advocacy, and programme development.

Multiple Indicator Cluster Survey (MICS)
Developed by UNICEF and carried out in 118 countries MICS provides data on the well-being of women and children. Round six of the survey, undertaken between 2017 and 2021, revealed the harmful impact of school closures on foundational learning during the COVID-19 pandemic. MICS-Education Analysis for Global Learning and Equity (MICS-EAGLE) was launched in 2018 and can be used at national, regional, and global levels. Its purpose is to improve learning outcomes and address issues of equity in education by closing gaps in data for key education indicators and improving effective data utilization by governments and education stakeholders.

**Multinational assessment tools**

**Early Grade Reading Assessment (EGRA)**

EGRA is a USAID-supported oral assessment tool designed to measure basic skills for literacy in children in early grades. This one-to-one assessment focuses on the individual child. EGRA measures recognition of letters, reading of simple words, understanding of sentences and paragraphs, and comprehension. Countries can adapt the assessment to their given languages. EGRA helps to establish national reading performance and the level of children’s reading skills.

**Early Grade Mathematics Assessment (EGMA)**

The USAID-supported EGMA measures children’s skills in numeracy and mathematics. It focuses on the foundations of maths, such as number identification, quantity discrimination (larger and smaller), missing-number identification, word-problem-solving, addition and subtraction, shape recognition, and pattern extension. EGMA helps teachers establish students’ level of understanding of foundational skills and identify areas of improvement towards further tasks in upper grades.

**Measuring Early Learning Quality and Outcomes (MELQO)**

MELQO is supported by UNESCO, the World Bank, the Center for Universal Education at the Brookings Institution, and UNICEF. It aims to promote feasible, accurate, and useful measurement of children’s development and learning at the start of primary school and of the quality of their pre-primary learning environments. Items are designed for children between the ages of 4 and 6.

**Regional collaborations**

**Network on Education Quality Monitoring in the Asia-Pacific (NEQMAP)**

NEQMAP is a platform for the exchange of knowledge, experience, and expertise on the monitoring of educational quality in the Asia-Pacific region. UNESCO’s Asia and Pacific Regional Bureau for Education serves as the NEQMAP Secretariat.

**Teaching and Learning Educators’ Network for Transformation (TALENT)**

TALENT serves as a thematic platform to support the implementation of the Framework for Action of SDG 4 in West and Central Africa. The network focuses on teaching and learning, paying particular attention to the alignment of curriculum, pedagogy, and assessment, as well as issues related to institutional environment to support effective learning. It is coordinated by the UNESCO office in Dakar.
Overseen by the READ Council, comprising Russian and World Bank leaders, the READ Trust Fund operates at the global and country level to help low-income countries improve student learning outcomes by strengthening the design and implementation of learning assessment systems. Currently in its second phase, READ II has three aims, namely: (1) to strengthen countries’ capacity to assess student learning and use this information to improve teaching and learning outcomes; (2) to improve or reform high-stakes examination programmes that often decisively influence students’ progression to the next level of the education system; and (3) to strengthen training and professional development for teachers in the use of classroom assessment practices to support teaching and learning. This builds on the goals of READ I, which established the READ Trust Fund, and is intended to generate and share knowledge of good educational practices across the globe through analytical reports, toolkits and case studies.

Assessment during and post COVID

Despite the increased difficulty of assessing student learning during COVID-19, monitoring learning and proxies, such as educational access, were essential to begin measuring learning loss and accelerate recovery. Where available, data collection was undertaken through SMS or telephone, learning expectations reviewed, large-scale assessments postponed, and low-stakes and formative assessments prioritized. The importance of teachers’ ability to monitor student learning and communicate with students and families was emphasized. Moving forward, digital methods of assessment and data collection have been prioritized (IIEP Learning Portal Team, 2021).

References and sources
