Learning assessments

BRIEF 2

Educational measurement

Cross-national studies

Citizen-led assessments

To improve learning outcomes, policy-makers need to know what students are learning and what needs to be improved. Assessment of learning is an essential element of any education sector monitoring plan.

Tests and examinations

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

Public examinations are typically used to certify that a student has attained a certain level in their studies and for selection to the next stage of education. Examination results can also 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. System-level assessment results measure how well students within the system are learning, and help explain why some students are performing better than others. In addition, background information about students, teachers, and learning environments is usually collected, allowing data to be analyzed and correlated to inform policy decisions.
The UNESCO Institute for Statistics (UIS) has identified nine cross-national learning assessments that meet the criteria to measure Sustainable Development Goal 4 (SDG 4) Indicator 4.1.1, the proportion of children and young people achieving minimum proficiency in reading and mathematics: LaNA, PASEC, PILNA, PIRLS, PISA, SACMEQ, SEA-PLM, TERCE, and TIMSS (UNESCO-UIS, 2018). These nine assessments are described below.

International large-scale assessments

Programme for International Student Assessment (PISA):

- The Organisation for Economic Co-operation and Development (OECD) PISA tests the skills and knowledge of 15-year-old students. Every three years, students from randomly selected schools worldwide 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.

Trends in International Mathematics and Science Study (TIMSS):

- TIMSS is a research study conducted by the International Association for the Evaluation of Educational Achievement (IEA) that measures mathematics and science achievement at Grades 4 and 8. In addition, it collects information on curriculum and curriculum implementation, instructional practices, and school resources. 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 is an assessment of pupils’ reading comprehension, also conducted by the IEA. It provides internationally comparable data about how well children read at the end of Grade 4. The study also collects information about home support, instructional practices, and school resources in each participating country. PIRLS Literacy (earlier known as pre-PIRLS) is based on the same view of reading comprehension as PIRLS, but is designed to test basic reading skills for 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 basic assessment at the end of primary school. It is intended for countries where the IEA’s TIMSS and PIRLS may be too difficult to implement.

Regional learning assessments

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

- SEACMEQ brings together 16 education ministries in Southern and Eastern Africa to share
experiences and expertise in scientific monitoring and evaluation of policies on school conditions and the quality of education. SEACMEQ projects are large scale cross-national research studies carried out to assess the conditions of schooling, and performance levels of learners 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 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, which contributes to the development and monitoring of primary school education achievement in member countries. In addition, PASEC carries out comparative evaluations across its member countries.

Regional Comparative and Explanatory Study (ERCE):

- **ERCE** are large-scale studies of learning achievement coordinated by the Latin American Laboratory for Assessment of the Quality of Education (LLECE) 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 grown to include writing and the natural sciences. LLECE assessments also aim to identify the factors associated with different levels of achievement, such as the socio-economic context, family life and personal issues, educational policies, and school processes. The third cycle, **TERCE**, was implemented in 2013. A new cycle of the Regional Comparative and Explanatory Study is underway in 2019.

Southeast Asia Primary Learning Metrics (SEA-PLM):

- **SEA-PLM** is a regional assessment aiming at establishing a common approach to assessing learning outcomes at primary Grade 5. It is a partnership of the Southeast Asian Ministers of Education Organization (SEAMEO), UNICEF and the Australian Council for Education Research (ACER).

Pacific Islands Literacy and Numeracy Assessment (PILNA):

- **PILNA** provides data on the literacy and numeracy outcomes of students in 13 Pacific Island countries who have completed Year 4 and Year 6. It is administered by the Educational Quality and Assessment Programme (EQAP) of the Pacific Community (SPC).

**Other international assessments**

**PISA for Development:**

- The **PISA for Development** OECD initiative aims to increase developing countries’ use of PISA assessments for monitoring progress towards nationally set targets for education improvement, with a focus on student learning outcomes. It is also designed to track international education targets in the Education 2030 framework.

**Teaching and Learning International Survey (TALIS):**
**TALIS** is an international, large-scale survey of the teaching workforce, the conditions of teaching, and the learning environments of schools. The study aims to provide comparable policy information regarding conditions of teaching and learning environments to participating countries.

**International Civic and Citizenship Education Study (ICCS):**

- **ICCS** investigates the ways in which young people are prepared to undertake their roles as citizens. This IEA study assesses pupils at the end of Grade 8. It 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 IEA, designed to evaluate students’ ability to use computers to investigate, create, and communicate so that they may participate effectively at home, at school, in the workplace, and in the community. The study is aimed at students at the end of Grade 8.

**Household and citizen-led learning assessments**

A growing civil society movement argues that conducting learning assessments in schools does not give a true picture of the state of learning within a country since it omits those who attend school irregularly or who have dropped out of school. While national household surveys have long collected information about literacy rates, there is now widespread recognition that simply asking people “Can you read and write?” does not yield as much information as assessing their literacy skills in practice. The result of these two trends has been a growing practice of incorporating simple learning assessments into household surveys – whether as part of government-sponsored demographic studies or in the form of citizen-led initiatives. Household-based assessments are typically based on a representative sample rather than the entire population.

Citizen-led assessment initiatives aim to gather evidence on learning and use it to increase awareness of low learning outcomes and stimulate actions that address the learning gap. The movement began in 2005 with the introduction of the Annual Status of Education Report (ASER) by Pratham in India. Now the People’s Action for Learning (PAL) Network brings together 14 countries implementing citizen-led assessments to assess children’s basic reading and numeracy competencies. To date, over 7.5 million children have been tested across countries such as Pakistan, Uganda, and Mexico. To ensure that citizen-led assessments are technically rigorous and generate robust evidence, the PAL Network has published a Data Quality Standards Framework (DQSF). Citizen-led learning assessments may also be used to support monitoring of SDG 4. The UIS is developing a new methodology to monitor progress towards SDG Indicator 4.1.1, which will include data from citizen-led assessments.

**Multi-national assessment tools**

**Early Grade Reading Assessment (EGRA):**

- **EGRA** is an oral assessment tool designed to measure basic skills for literacy in children in early grades. It is a one-to-one assessment focusing on the individual child. It measures
recognition of letters, reading simple words, understanding sentences and paragraphs, and comprehension. The assessment is adaptable for use by a particular country in a given language. EGRA helps to establish national reading performance and the level of children’s reading skills.

Early Grade Mathematics Assessment (EGMA):

- **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. It helps teachers to establish students’ level of understanding of foundational skills and to identify areas of improvement towards further tasks in upper grade.

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 four and six.

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. The network focuses on student learning assessment as a key tool for monitoring education quality, while acknowledging the importance of maintaining strong linkages with other enablers of learning in classrooms, including curriculum and pedagogy. 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. Its activities focus on research, knowledge sharing, and capacity building. It is coordinated by the UNESCO Office in Dakar.

Russia Education Aid for Development (READ) Trust Fund:

- The government of the Russian Federation and the World Bank have launched the second phase of the Russia Education Aid for Development (READ) Trust Fund program. READ 2 has three aims: to strengthen countries’ capacity to assess student learning and use this information to improve teaching and learning outcomes; to improve or reform high-stakes examinations programmes that influence, often decisively, students’ progression to the next level of the education system; and to strengthen training and professional development for
teachers in the use of classroom assessment practices to support teaching and learning.

References and sources

UNESCO-UIS. 2018. *Quick guide to education indicators for SDG 4*. Montreal, Canada: UIS.