

From assessment to action: ensuring foundational learning for ALL children

The child in this picture is reading. The text is in Hindi and it translates as: *The sun has come out. Light is spread everywhere. Darkness is gone. Children are going to school.*

This picture symbolises the promise of education to brighten lives and create happiness. Together we must ensure that all children can read and understand simple texts like these and do basic math.

But it is not enough to hope that they will acquire these skills just by staying in school.

From measuring schooling to measuring learning

The Millennium Development Goals (MDGs) adopted in the year 2000 created a push for universal access to education. Since then, many countries have acted to expand school enrollments.¹ But improvements in the quality of education outcomes have not kept pace.²

More recently, Goal 4 of the Sustainable Development Goals (SDGs), defined by world leaders in 2015, calls for a greater focus on inclusiveness, equity and quality in education. Learning outcomes feature prominently in SDG 4, with five targets and six indicators calling for data on learning outcomes and skills (UNESCO Institute of Statistics (UIS), 2018a).³

Within SDG 4, the first target - Target 4.1- states: *"By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes."*

In particular, Indicator 4.1.1 will measure the *"proportion of children and young people:*

(a) in Grade 2 or 3;

(b) at the end of primary education; and

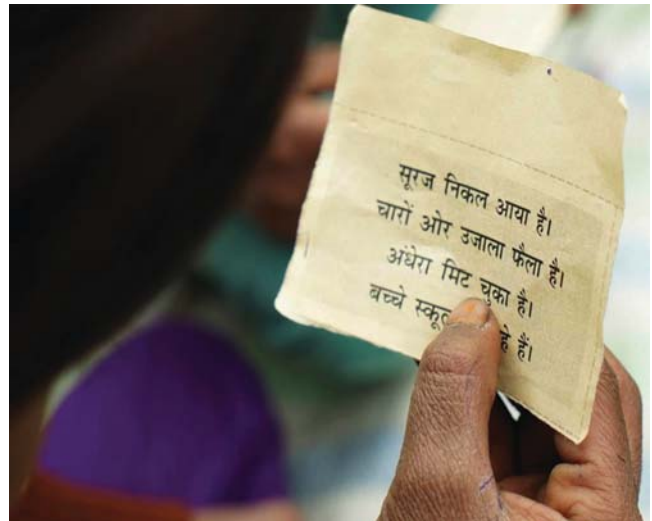
(c) at the end of lower secondary education

achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex".

In order to enable monitoring of these new global education targets under the SDGs, specifically Target 4.1.1, robust, regular, and comparable (both within a country over time as well as cross-nationally) data are needed on children's learning outcomes.

Insufficient evidence on learning gaps in the early grades

New estimates from UNESCO Institute for Statistics (UIS)⁴ show that 617 million children and adolescents worldwide



are not achieving minimum proficiency levels in reading and mathematics (though robust estimates are missing for many countries, particularly low and middle-income countries). About two-thirds of these children and youth are in school (UIS, 2017a). The gap between what children can do and what is expected of them often appears in the very first years of school. Almost all education systems expect children to acquire foundational abilities of reading and mathematics⁵ by Grade 2 or 3 so that they can negotiate more difficult content in higher grades. In most school systems, classroom teaching is guided by the need to cover an ambitious curriculum. Keeping pace with children's learning, especially struggling learners, is seldom prioritised (Banerji, 2017). Children who lag behind in early grades are usually not offered a chance to catch up.

In the most recent World Development Report, the World Bank (2018) highlights that learning outcomes will not change unless learning is used as a guide and metric. The importance of assessments is emphasised by the fact that assessing learning is visualized as the first step in a 3-step strategy to tackle the learning crisis.⁶ The other two being:

- 1) Acting on evidence collected from learning assessments; and
- 2) Aligning all actors to make the system of education work for learning.

¹ See United Nations (2015) to understand progress made under the Millennium Development Goals.

² For instance, see World Bank (2018) for a detailed discussion on the crisis of learning.

³ See UIS (2018b) for a list of all targets and indicators for SDG 4 on education.

⁴ UIS is the custodian UN agency for SDG 4 data. The UIS not only has the mandate to produce the global monitoring indicators but also to help all stakeholders - countries, donors, civil society groups, and technical partners - use the findings to get all children in school and learning by 2030.

⁵ Acquisition of these foundational skills in early grades is strongly positively associated with later school performance. For instance, see Glick & Sahn (2010).

⁶ Some critics would argue that in recent times a lot of assessments have mushroomed leading to a risk of an overemphasis on assessment data. But in many countries the problem is still availability of too little relevant and actionable assessment data - not too much.

Intuitively, it seems reasonable for all countries to assess learning in early grades (Grades 2 or 3) to ensure that all children are acquiring foundational abilities of reading and mathematics that are critical to successfully negotiating the curriculum in higher grades. Evidence from such an assessment would ensure that learning gaps are identified in time to provide effective remedial action where needed.

Currently, none of the major international assessments measure foundational learning abilities for Grades 2 or 3.⁷ And out of several regional assessment initiatives,⁸ only the Programme for the Analysis of Education Systems of CONFEMEN (PASEC) and the Latin American Laboratory for Assessment of the Quality of Education (LLECE) assess learning outcomes for children in Grades 2 and 3, respectively. Some countries cover early grades in their national assessment programs. A recent review by UIS and UNESCO's International Bureau of Education (UNESCO-IBE) found that around 50 countries have assessment frameworks for Grades 2 or 3, but only a few publish learning outcomes or successfully complete the administration of their assessments (UIS, 2017b).⁹ One reason for this absence of attention to foundational skills is that they are much more difficult to assess.

Is there a viable assessment of foundational learning to produce actionable evidence as well as track progress on learning outcomes under SDG 4.1.1?

The Annual Status of Education Report (ASER) assessment: Relevant, robust, and replicable

Much before international acceptance of the existence of a learning crisis came about, Pratham,¹⁰ one of the largest civil society organizations working to improve quality of education in India, realized the problem of low learning outcomes while working with children in its intervention programs. Pratham developed a simple assessment tool to help understand and track children's reading and numeracy levels. The assessment is oral, administered one on one with each child, and quick and simple both to do and to understand. This assessment fed directly into Pratham's instructional practice as children were grouped for instruction based on their level. It was also helpful in explaining to parents what their children were able to do and where they required more assistance, and for tracking children's progress over time. This assessment was later standardized and scaled up to form the core of a large scale household survey that collects data on schooling status and learning outcomes of children in rural India known as the Annual Status of Education Report, or ASER (ASER Centre, 2015).

Pratham pioneered the ASER assessment model in 2005. Since then, the ASER survey has been conducted every year across rural India using simple¹¹ but robust one-on-one assessment tools.¹² It engages citizens and local organisations/institutions in evaluating and understanding basic learning outcomes in reading and mathematics of a representative sample of over 600,000 children in approximately 16,000 villages and over 565 rural districts each year (Banerji, 2016).¹³

⁷ Progress in International Reading Literacy Study (PIRLS) is an international study of reading (comprehension) achievement in Grade 4. Similarly, Trends in International Mathematics and Science Study (TIMSS) is a series of international assessments of the mathematics and science knowledge of students around the world in Grades 4 and 8. Both PIRLS and TIMSS are conducted by the International Association for the Evaluation of Educational Achievement (IEA) using a pencil-and-paper format. The Programme for International Student Assessment (PISA) is a worldwide study by the Organisation for Economic Co-operation and Development (OECD) in member and non-member nations, intended to evaluate educational systems by measuring 15-year-old school pupils' scholastic performance in mathematics, science, and reading.

⁸ The Latin American Laboratory for Assessment of the Quality of Education (LLECE) is a regional assessment led by UNESCO's Regional Bureau for Education in Latin America and the Caribbean (OREALC/UNESCO). It has been administered in mathematics and language (reading and writing) in Grades 3 and 6, and in natural sciences (Grade 6 only).

The Programme for the Analysis of Education Systems of CONFEMEN (PASEC) is a regional assessment for monitoring the quality of education systems belonging to the CONFEMEN. It measures student competencies at the beginning (Grade 2) and end (Grade 6) of primary education, in language (oral/listening comprehension, decoding and reading) and mathematics.

The Pacific Islands Literacy and Numeracy Assessment (PILNA) is a regional assessment that measures language/literacy and mathematics/numeracy skills in Grades 4 and 6. The Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) is a regional assessment that assesses performance levels of students and teachers in Grade 6 in language/literacy, mathematics/numeracy, and health.

The Southeast Asia Primary Learning Metrics (SEA-PLM) is a regional assessment developed to assess Grade 5 students in language, mathematics, and global citizenship.

⁹ Due to lack of existing and clear methodologies, SDG 4, Target 4.1, Indicator 4.1.1(a) was only recently upgraded to a Tier II indicator (an indicator which is conceptually clear, established methodology and standards available but data are not regularly produced by countries) from a Tier III indicator (an indicator for which there is no established methodology and standards available or methodology and standards are being developed or tested).

¹⁰ For more information about Pratham, see - <http://www.pratham.org>

¹¹ In ASER survey, children in the age group of 5 to 16 years are assessed in their homes. All children are assessed using the same tools as the objective of the survey is to ascertain whether or not children have attained foundational abilities of reading and mathematics. The ASER reading assessment has 4 tasks: recognizing letters, decoding words, decoding a Std I level text, and a Std II level text. The ASER mathematics assessment also has 4 tasks: recognizing numbers (1 to 9), recognizing numbers (11 to 99), subtraction, and division. For both reading and mathematics, each child is marked at the highest level of the assessment based on the tasks she completes successfully. A child who cannot even do tasks at the easiest level is marked as a "beginner".

For more details, see ASER assessments tasks - <http://img.asercentre.org/docs/Publications/ASER%20Reports/ASER%202016/aserassessmenttasks.pdf> and ASER process for conducting the survey - <http://img.asercentre.org/docs/Publications/ASER%20Reports/ASER%202016/aservillageprocess.pdf>.

¹² See Vagh (2016) for a discussion on validity of ASER assessment tools. Also, see Banerji & Bobde (2013) to understand the development and evolution of ASER English tool.

¹³ See ASER's Trends over Time report that presents trends in enrolment, reading, mathematics, and English for children in rural India from 2006 to 2014 - <http://www.asercentre.org/Keywords/p/236.html>

Over the past 13 years, the ASER assessment model has been borrowed and adapted by many countries. In 2015, the People's Action for Learning (PAL) Network - a partnership of member countries working across three continents to assess the basic reading and numeracy competencies of children, in their homes, through regular citizen-led assessments was formally established with a Secretariat based in Nairobi, Kenya.¹⁴ The PAL Network believes that citizen-led, household-based ASER-like assessments of basic reading and numeracy competencies are the only way to find out whether ALL children are acquiring the foundational skills that are necessary for future progress.

By consistently producing data on low learning outcomes for the PAL Network member countries,¹⁵ ASER and its family of assessment initiatives have been pushing to shift the focus from access and provision to learning for all and to bring children's learning to the centre of all global discussions and debates on education.

Assessing foundational learning for ALL children: ASER architecture and its relevance for developing country contexts

Current knowledge of and experience with learning assessments is largely based on models and methods that have evolved over time in high income developed countries. Not surprisingly, these respond to the needs and capabilities of the contexts in which they originated. These contexts have characteristics that are often very different from those of developing countries. For example, they typically have child populations that are stable over time, several decades' worth of experience with universal enrollment, comprehensive records of all schools in the country, and significant proportions of parents who have themselves been to school. It is also the case that in these education systems, assessment is usually an integral part of the larger teaching-learning framework that guides the functioning of schools. Data on students' progress feeds into decisions and plans for improvements in the education system (ASER Centre, 2017a).

In the light of the widespread learning crisis and the recent push to assess learning for SDG 4.1.1 monitoring, as countries develop and experiment with metrics and measurement, they need to consider the extent to which

the existing assessment approaches and models are appropriate, relevant or useful for their current context. Should they modify or adapt existing paradigms? Or do they need to develop/adapt different indicators, tasks and processes that better serve their current needs and are more aligned to existing capabilities?

The architecture of ASER and its family of assessments is based on ground realities that need to be taken into consideration if assessment data is to be translated easily into effective interventions. The points below summarize and explain some of the key decisions that were taken as the ASER assessment was evolved. These decisions are relevant for countries that have just started thinking or are in early phases of designing assessment programs to measure foundational learning.

- 1. Assessments conducted in the households, in order to include ALL children** - Despite making significant progress in increasing enrollments, not all children in the school going age-group in most developing countries are currently enrolled in school. Of those who are enrolled, many attend unrecognized schools. Education systems in many countries lack a comprehensive list of all kinds of schools. Attendance rates also vary vastly across and within countries, and school-based assessments generate estimates of learning that are biased towards students who attend more regularly. Hence, only a household-based assessment can adequately represent ALL children.¹⁶
- 2. Oral one-on-one assessments** - Even after several years of attending school, many children in developing countries lack foundational skills like reading. For instance, in Ghana and Malawi, more than four-fifths of students at the end of Grade 2 were unable to read a single familiar word such as 'the' or 'cat' (Gove & Cvelich, 2011). In Peru (a middle-income country) before the recent reforms only half of all children could do so. In 2016, national level ASER assessments in India and Pakistan¹⁷ revealed that even in Grade 5 about half of all children could not read a Grade 2 level text (ASER Centre, 2017b; ASER Pakistan, 2017). Over 25% children in grade 5 in the Mexican state of Veracruz could not comprehend a simple story that they read (Medición Independiente de Aprendizajes (MIA), 2016).

¹⁴ See <http://palnetwork.org> for more information about the PAL Network.

Also, see <http://palnetwork.org/our-growth/> for information on the growth of the Network over the years.

¹⁵ See http://palnetwork.org/wp-content/uploads/2017/11/2017_COMMS_InformationBrief_CLA4PagerSDG4.1.1_VO2_EN.pdf for a quick snapshot of foundational learning levels in reading and mathematics in various PAL Network member countries across Africa, Asia and Latin America.

¹⁶ Is a sample based learning assessment appropriate, or is a census required? This is a question that often comes up in assessment-related discussions. To answer this question, it is important to consider the purpose of the assessment. If the objective is to obtain reliable estimates at a systemic level, then, statistically well designed and carefully administered assessments can provide reliable estimates of most variables of interest. Such assessments can also be administered more often. Schools/children participating in these assessments do not have to be identified. This helps lower the stakes, making the assessments less susceptible to biases and ill practices. However, if the objective of the assessment is to use these estimates for targeting of specific actions or interventions, then a census may be needed.

While deciding the sampling design (for sample-based assessments), care should be taken to ensure that learning assessment data that is generated is representative at the level of decision-making. In India, the unit for planning, allocation and implementation in the elementary education sector is the district and the city. Hence, the ASER survey in India aims to reach all rural districts to provide useful data for decision-making at district level as well as state and national levels.

¹⁷ For more information about ASER Pakistan, see - <http://www.asercentre.org/#alu7g>

Children who cannot read cannot be assessed using pencil-and-paper tests. Oral one-on-one assessment is the only meaningful option for understanding learning outcomes of a majority of children in the developing world at least at the primary school level.

3. Assessment of foundational abilities of reading and comprehension (in own language) and mathematics -

Learning outcomes are far below grade level for many children currently enrolled in school. For instance, in rural Bangladesh, after completing Grade 9 about 80% of students attain Grade 5 competencies in oral and written mathematics. The fact that written mathematics competency is significantly lower than oral, points to the difficulties that children have in reading, understanding, and writing (Asadullah et al., 2009 as cited in Dundar et al., 2014). Therefore, in many developing countries, it will be useful to begin assessment programs with a focus on basic reading and comprehension (in own language) and mathematics, rather than implementing subject-wise tests. As the system becomes increasingly capable of implementing, analysing and effectively using data, more subjects and more levels can be incrementally incorporated.

4. Common, frequent, and consistent assessment in early grades and beyond to ensure tracking of foundational abilities -

As elaborated earlier, most international assessments target children in older age groups. But learning deficits are harder to address for older children. Basic data on children's foundational skills in early grades can be linked to quick corrective action, thus preventing the accumulation of learning deficits if taken at the right time and at the appropriate level. Assessment of foundational abilities should also be continued for older age-groups (in addition to any other metric) to ensure that all children have successfully acquired these skills.¹⁸ Also, to make such assessment data useful for monitoring and planning action, findings should be available at regular and predictable intervals.¹⁹ The use of uniform methodologies, approaches, and psychometrics across different rounds of assessment is crucial for education systems to understand trends in learning over time.

5. Simple instruments, processes and data to generate awareness and build capacity -

Assessment of children's learning has a relatively long history in developed countries, making sophisticated measurement systems

for data collection and different levels of analysis possible. A culture of measurement is not well developed in most developing countries, where the capacity to design assessments, analyze learning outcomes data and link assessment results to action on the ground has yet to be built. Simple, easy to use assessment tools and processes, easily understandable data, and evidence that can effectively be translated into action are all important elements that can fuel policy dialogue and action in the developing country context. Concerted and consistent efforts using a hands-on approach over time will build assessment capacity of government officials at different levels. Simple tools can also engage teacher and parents to understand learning goals expected of children at different stages of the school system.

- ### **6. Collaboration with stakeholders -**
- In most developing countries, years of schooling are not highly correlated to value-addition in terms of learning for each year spent in school. Involving a wide cross-section of stakeholders in the assessment is useful, given the need to highlight the fact that the issue of learning needs focus and national attention. Often it is only first-hand experience of a problem that changes mindsets. Assessments that are developed and administered with the collaboration of various stakeholders are more likely to be considered valid and relevant at local levels.²⁰ Local partnerships and simple tools and processes also help reduce the overall cost of assessment.²¹

Looking ahead

The SDGs ushered in a new era of ambitions for education aiming to ensure that every child is in school and learning well. The reporting format for SDG 4.1.1 has two basic requirements for assessment programs:

- 1) Content/skills covered that can be aligned to minimum proficiency levels (MPLs). The minimum proficiency levels agreed for monitoring under SDG 4.1.1(a) for Grades 2 and 3 are as follows (UIS, 2018c):²²
 - Grade 2 reading - Children read and comprehend most of written words, particularly familiar ones, and extract explicit information from sentences.
 - Grade 3 reading - Children read written words aloud accurately and fluently. They understand the overall meaning of sentences and short texts, and identify the topic of texts.

¹⁸ ASER 2018 indicates that even in Grade 8, close to a quarter of enrolled children are unable to read fluently at Grade 2 level and less than half of all children in Grade 8 can correctly solve a simple numerical division problem (3-digit number divided by 1-digit number). Similar trends can be seen from ASER Centre's research studies with children in the post-primary age-group.

¹⁹ Since its inception in 2005, the ASER survey was done annually for 10 years till 2014. Two more rounds have been completed in 2016 and 2018.

²⁰ In India, ASER partners with local institutions and organizations in each district to carry out the ASER survey and also to discuss and disseminate the ASER results. Partners are from varied backgrounds but a large proportion comprises teacher training colleges, other colleges and universities.

²¹ For instance, participation in one round of a large international assessment programme (such as TIMSS and PISA) costs a country around US\$800,000. The figure is lower - US\$200,000 to US\$500,000 - for regional cross-national programmes, such as LLECE and PASEC (UIS, 2018a). In comparison, despite a design that yields estimates at district, state and national levels covering over 550,000 children, ASER 2016 cost less than US\$1,000,000.

²² ASER Centre and the PAL Network played a critical role in shaping these MPLs (to include foundational learning) and achieving global consensus by actively participating in the UIS-Global Alliance to Monitor Learning (GAML) initiative. For more details on GAML see <http://gaml.uis.unesco.org>.

- Grade 2 and 3 mathematics - Children demonstrate skills in number sense and computation, shape recognition, and spatial orientation.
- 2) Stringent quality control processes to ensure procedural consistency with data from other assessment programs/countries.

ASER and its family of assessments are well aligned to both these requirements for successful reporting on SDG Indicator 4.1.1.²³

In addition, though it is mostly known for its use in large-scale ASER survey in India, the ASER assessment tool is also widely used for formative purposes in classroom intervention programs²⁴ and for program evaluation purposes.²⁵ Due to its rapid and simple design, ASER assessments can also be conducted along with existing school-based assessments to gain deeper insights on foundational learning levels.²⁶ ASER assessments can also be included at little additional cost with existing household surveys conducted both nationally (such as income and consumption surveys) and internationally.²⁷

Lastly, the links from assessment to action are neither automatic nor straightforward. For learning to improve, not only does evidence from learning assessments need to be available, but also someone needs to act on them. The SDGs have provided a catalyst for focusing on learning; an assessment like ASER is available to provide relevant and actionable evidence that can kick-start the process of change. Now we need a concerted effort to ensure that education fulfills its promise of bringing light and happiness in every child's life.

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²³ See page 279 of this report for a discussion on the ASER survey's quality control process. Also, in May 2018, the PAL Network published network-wide Data Quality Standards Framework (see https://palnetwork.org/wp-content/uploads/2018/04/2018_PAL-Network_DQSF_FINAL.pdf) as a central element to the network-wide commitment to producing high-quality and robust assessment data.

²⁴ For instance, see Banerji & Chavan, 2016

²⁵ For instance, recently, the ASER reading assessment was used along with Early Grade Reading Assessment's (EGRA) oral reading fluency measure to evaluate USAID funded early grade reading programs in 7 states of India.

²⁶ In a school-based assessment conducted by ASER Centre in partnership with UNICEF in the state of Bihar, oral ASER assessment tools were used in addition to curriculum-pegged pencil-and-paper assessments. See - <http://www.asercentre.org/Keywords/p/252.html> for more details.

²⁷ For instance, UNICEF's Multi Indicator Cluster Surveys (MICS) included a foundational learning module similar to the ASER assessment for its 6th round conducted in 2016-2018. Like ASER, MICS is also a household survey. For more details on MICS, see - <http://mics.unicef.org/about>.

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