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ECE SPOTLIGHT SERIES

BUILD TO LAST: PATHWAYS TO ASSESSMENT

Measuring School Readiness Skills

School readiness skills are a holistic set of behaviours and attitudes that enable children to thrive in school and life. Assessment of these skills is helpful to support learning by individualising instruction and smooth transition to primary education as well as to generate evidence to better understand system performance so that the quality, equity and inclusion of early learning services can be continuously improved.

By the first grade of primary school, learning [achievement gaps are already present](#)¹, especially for children living in disadvantaged circumstances. These gaps continue to widen as children progress through the education system.

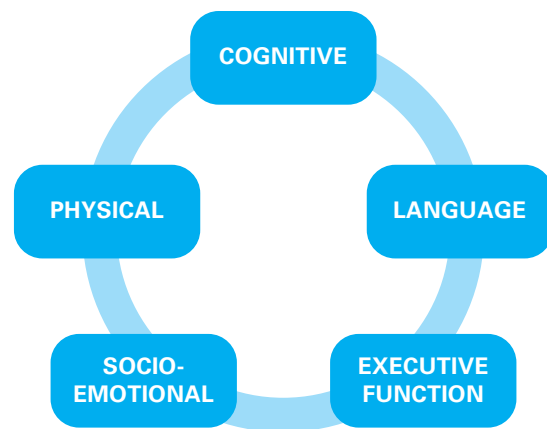
Quality early childhood education (ECE) can help close the gaps. Together, the physical, social, emotional and creative development skills fostered through play form the basis of school readiness. Imagine a group of children playing a game of market traders and shoppers. Through such play children would acquire new words and expressions, but more significantly, they would be practicing the skills to think, plan, negotiate and adapt. Through teamwork and persistence in their play tasks, they would learn to engage with peers, and develop the sense of well-being and resilience that fuels the motivation to try again and achieve.² These aspects of 'learning to learn' act as mediators in pathways between early learning experiences and later academic and social-behavioural outcomes.³

Providing at least one year of free and compulsory ECE results in a 12-percentage point improvement in primary graduation rates in low-income and lower middle-income countries.⁴ By providing all children with opportunities to develop holistically, in safe, inclusive environments, governments can begin to level the playing field, ensuring that children are prepared for their learning journeys, and equipped with the skills and attitudes they will need to succeed.

Children who receive quality early childhood education demonstrate positive improvements in socio-emotional competencies, cognitive skills, language, physical and motor skills, creativity and 'executive function' skills related to planning, following steps in a process, maintaining focus and self-regulation. Together these skills lay the groundwork for children to learn and thrive in school and life.⁵ Accordingly, learning outcomes data at pre-primary level should focus on the extent to which children have developed the range of holistic behaviours, skills and attitudes required to support effective learning and continuous development.⁶

The assessment of these holistic school readiness skills is the focus of this document.

Figure 1: Holistic School Readiness Skills



- 1 UNICEF, [A World Ready to Learn: Prioritizing Early Childhood Education](#), 2019a.
- 2 Sylva, K., Sammons, P., Melhuish, E. et al., 'Developing 21st century skills in early childhood: the contribution of process quality to self-regulation and pro-social behaviour', *Z Erziehungswiss*, 23, 2020, 465–484.
- 3 Sylva et al., 2020.
- 4 Earle, A., Milovantseva, N., & Heymann, J., 'Is free pre-primary education associated with increased primary school completion? A global study', *International Journal of Child Care and Education Policy*, 12, 2018, 13-33.
- 5 Martinez, S., Naudeau, S., & Pereira, V., 'Preschool and Child Development under Extreme Poverty', Policy Research Working Paper, 8290, World Bank Group, 2017.
- 6 Fernald, L., Prado, E., Kariger, P., & Raikes, A., '[A Toolkit for Measuring Early Childhood Development in Low- and Middle-Income Countries](#)', World Bank, 2017.

Why assess school readiness skills?

Assessing school readiness skills provides evidence about learning which can be used to enhance learning, to smooth the transition to primary school, and to support equity and quality in ECE systems by capturing the impact of policy interventions or specific programmes.

Quality of teaching and learning in individual ECE classrooms can be strengthened when teachers gather data on learning, and use it to inform their planning and classroom activities. By using data about knowledge or skill gaps in individuals or among cohorts of learners, teachers can focus teaching and learning strategies to support children to address these gaps and to progress on their learning journeys.

The period of transition to primary school is key to supporting children to succeed. A smoother transition to primary Grade 1 can be supported when data on new entrants' skills are used to inform policy and teaching and learning activities. For example, in [Sao Tome and Principe](#) early learning assessment (ELA) results indicated that many primary school entrants had significant language gaps in Portuguese, the official language of instruction.⁷ The Government took steps to address this gap, through broader policy reforms including revisions to teacher training and the primary curriculum. In the Philippines, the Early Childhood Care and Development checklist is administered by pre-primary teachers. Anchored in the national Kindergarten Curriculum Guide, the assessment and accompanying portfolios are handed over to Grade 1 teachers who can then use the findings to support their teaching and to smooth the transition to primary for children.⁸

Equity of ECE services is supported when decision makers have access to the evidence they need to develop needs-based strategies and budgets. In [Ethiopia](#), data generated from an evaluation of the impact of ECCD services on learning outcomes enabled the government to identify the rate at which children from different

socioeconomic groups were acquiring language and literacy skills so the Government could understand whether ECCD programming was supporting goals for equity.⁹ Data generated using the International Development and Early Learning Assessment (IDELA) tool indicated that children from the lowest socioeconomic groups benefited the most from programming, supporting the case for scale-up of services. Factors of marginalization vary between contexts but data on school readiness skills could be disaggregated by geographical location, household income, disability status, minority ethnic or language status, refugee status, and more.

Combined with data about the quality of the learning environment, data on school readiness skills can provide insights into system quality. In the United Republic of Tanzania, the results of a [Measuring Early Learning Quality Outcomes](#) (MELQO) study helped to shape policy reforms in Zanzibar including revision of the National Pre-Primary Curriculum, and National In-Service Education and Training Strategy to support learning in classrooms.¹⁰ Study results also led to the development of a parenting strategy to improve the quality of the home learning environment. In the [Central African Republic](#),¹¹ evidence generated from the assessment of school readiness skills will support evaluation of the [newly developed ECE national curriculum](#). To support assessment, the MELQO tool has been contextualized and adapted to align with the holistic competencies outlined in the new curriculum, which began piloting during 2023. The data on skills and competencies developed through the pilot will support the Government to understand the impact of the pre-primary curriculum package and to identify where it can be strengthened, before improving, adopting and scaling the use of the new curriculum throughout the country.

Data about school readiness skills can also support effective and efficient allocation of financial resources. For example, officials in [Mali](#) successfully advocated for an increase of the proportion of education budget

7 UNICEF, West and Central Africa Regional Office, [Every Child Learns, UNICEF Education Strategy 2019-2030](#), 2019b.

8 UNICEF Innocenti, [It's not too late to act on early learning: Understanding and recovering from the impact of pre-primary education closures during COVID-19](#), Innocenti Research Brief, 2021.

9 Dowd, A., Borisova, I., Amente, A., & Yeneew, A., 'Realizing Capabilities in Ethiopia: [Maximizing Early Childhood Investment for Impact and Equity](#)', *Journal of Human Development and Capabilities*, 2016.

10 United Republic of Tanzania Ministry of Education and Vocational Training and UNICEF, [Measuring Early Learning and Quality Outcomes \(MELQO\): Zanzibar](#), n.d.

11 Republique Centrafricaine, [Plan Sectoriel de l'Education 2020-2029](#)



allocated to ECE from 0.2 per cent to 4 per cent based on data captured in Mali's early learning assessment (ELA).¹² In [Cabo Verde](#), ELA results revealed that two years of pre-primary was most effective in supporting school readiness. As a result, the government changed the structure of pre-primary from three years to two years, and focused investment on improving quality of services for those two years.¹³

Transparency and accountability for ECE service delivery is achieved by providing parents and communities with the evidence they need to hold providers and governments to account for the quality of services. In [Peru](#), the Government publishes data from national assessments throughout the education system.¹⁴ Early childhood education has been the subject of a special report, published in seven languages. Reports are tailored to the reader, including parents.

12 UNICEF, 2019b.

13 UNICEF, 2019b.

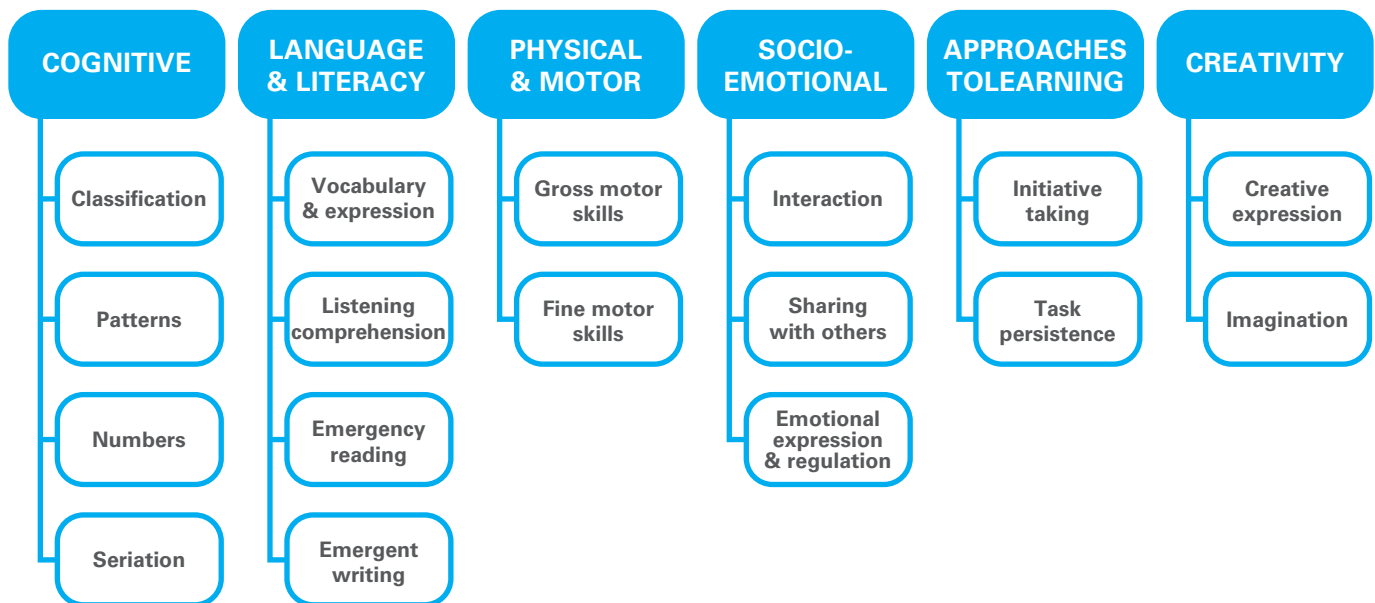
14 Clarke, M., & Luna-Bazaldua, D., [Planning a Large-scale Assessment of Student Achievement: What are essential elements of the assessment framework?](#) National Assessments of Educational Achievement Guidance Note, Washington, DC: World Bank, 2021a.

What to measure?

School readiness skills are measured by assessing performance across multiple domains. While there may be variation between the domains which are assessed

in each context¹⁵, or the weight allocated to each domain, a holistic school readiness skills assessment is likely to measure the skills shown in Figure 2.¹⁶

Figure 2: Across Developmental Domains



How to measure?

A range of existing tools are available to support the measurement of school readiness skills. Choosing the best-fit tool or tools will depend on a [range of factors](#)¹⁷ including:

- The goal of the assessment and the type of data required to achieve this goal;
- The ease with which the tool can be contextualized;
- The reliability and validity of the tool in measuring skills within priority domains in alignment with the national curriculum for ECE, including across contexts;
- Ease of use for administering the assessment;
- Cost of administering the assessment and analysing data;
- Frequency of assessment required.

Assessments may use a combination of [developmentally appropriate methods](#) such as observation by teachers and parents, interaction, and collection of samples of children's work.¹⁸ Assessment should be accessible for children, teachers and parents with sufficient flexibility to

15 See for example University of Hong Kong, Assessing Early Development and Learning: East Asia-Pacific Early Childhood Development Scale, [Brief, October 2017](#).

16 See for example Early Learning Partnership, [Measuring Child Development and Early Learning: Guidance Note](#), 2016; World Bank, [Anchor Items for the Measurement of Early Childhood Development](#), 2023.

17 Fernald et al., 2017.

18 Early Learning Partnership, [Measuring Child Development and Early Learning: Guidance Note](#), 2016.

ensure that speakers of minority languages, and children, teachers or parents with disabilities can participate.¹⁹ To ensure that assessment is feasible in all contexts, it should be possible to assess learning using materials which are already available in the setting, or locally, without the need to acquire specialized materials or toys.²⁰

The timing of assessment and availability of data should be linked to the goals of assessment.²¹ For example, if a goal is to establish a baseline of school readiness skills among learners entering Grade 1, the assessment should

take place in the first few weeks of primary school. If assessment data are being used to inform a multi-year ECE strategy for a new education section plan, they would ideally become available during the data analysis stage of the policy and planning cycle, with updated data informing strategic evaluations such as the midterm review and education sector plan final evaluation. Planning for the [availability of the workforce](#) to participate in key actions around data collection and analysis should be considered when planning the assessment road map to coincide with key milestones in the academic or planning calendar.²²

19 Clarke and Luna-Bazaldua, 2021a.

20 UNICEF, ARNEC, [Early Childhood Education Formative Assessment Package Part 1: Guidance on the formative assessment package](#), 2022.

21 Early Learning Partnership, 2016.

22 UNESCO, UNICEF, Brookings Institution and the World Bank, *Measuring Early Learning Quality and Outcomes: Overview*, 2017.



Assessment for learning or assessment of learning?

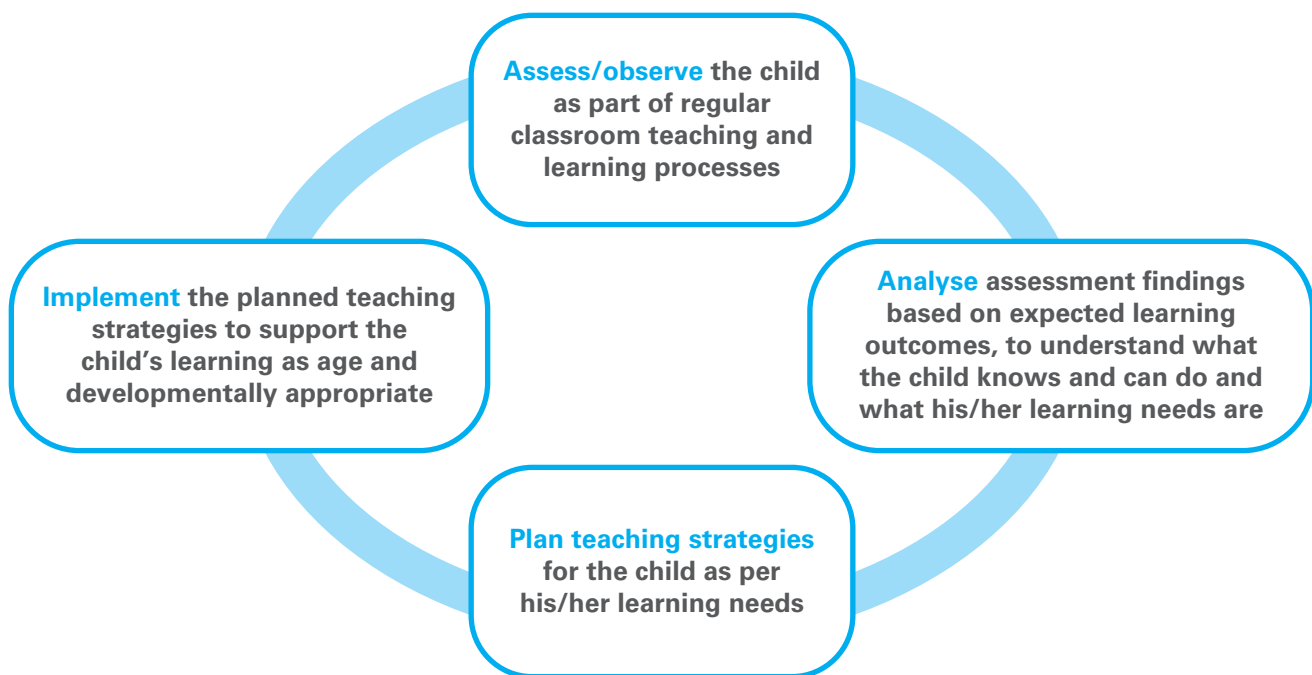
Approaches to assessment can broadly be categorized into assessment *for* learning and assessment *of* learning.²³ Choosing the right tool or combination of tools is critical to ensure that the data generated are appropriate for the purpose of the assessment.

Formative assessment provides information to teachers, learners and parents about the progress of an individual child in order to support next steps in learning. Sometimes called *assessment for learning*, or *continuous assessment*, formative assessment is an ongoing, cyclical approach usually managed by a teacher, and when paired with adaptation of learning interventions, is a core component of effective classroom practice (see Figure 3).²⁴

Formative assessment is a [systematic and ongoing](#)²⁵ part of the teaching and learning process. By

integrating assessment into standard classroom practice teachers can observe skills development on a continuous basis, adapting teaching processes and learning experiences in response to the information gathered through assessment. For example, through regular observation of play a teacher may notice that a child struggles to navigate conflict with peers. After analysing the behaviour, the teacher can work with the child and their parents to identify and adopt effective strategies to help the child develop this skill. The same teacher may observe that social skills are challenging for several children in the class and may use this information to create a series of play-based activities to support socio-emotional learning over the following days, weeks or months. Formative assessment data therefore allow teachers to tailor additional support to specific students, small groups, or the whole class.

Figure 3: The Process of Formative Assessment



23 Luna-Bazaldua and Clarke, 2022.

24 UNICEF, ARNEC, Early Childhood Education Formative Assessment Package: Part 1, 2022.

25 OECD/CERI International Conference, 'Learning in the 21st Century: Research, Innovation and Policy', [Assessment for Learning, Formative Assessment](#), n.d.

Following successful pilots in which learning in both mother-tongue and mathematics improved when formative assessment was used, [Ethiopia](#) has embedded an Assessment for Learning settings, and refugee camps to support teaching and learning.²⁶

In Nepal, formative assessment approaches are used to enhance classroom teaching, and also to support parents to strengthen the home learning environment by tailoring support to their child's individual learning profile.²⁷ Nepal's formative assessment package, adapted from the [UNICEF ROSA-ARNEC ECE Formative Assessment Package](#), was piloted after COVID-19 school closures to support teachers to identify and mitigate learning loss and learning lags in pre-primary children, and to engage parents in supporting learning in the home. Building on the Early Learning Development Standards child monitoring tool, the formative assessment package supports teachers to assess learning in the classroom, and to plan their teaching to address any gaps. Teachers share assessment information with parents on a quarterly basis, though the process of formative assessment is ongoing. Parents are encouraged to use the results to support home-based learning using simple activities. Preschool teachers support parents to understand and use the assessments using approaches such as SMS, home visits and more. To support resilience of the pre-primary subsector, the tool can be used to assess children's skills in the home through a combination of observation and activity-based tasks during temporary or permanent school closures.

Summative assessment produces a snapshot of performance at a moment in time. An assessment of learning, it is primarily used to benchmark performance against targets.²⁸ For example, summative assessment may be used to make decisions about grade progression, and forms the basis of the [high stakes](#) external examinations at primary and secondary level. It has traditionally been used to inform progression from pre-primary to primary in some contexts, though where this is the case governments are moving away from using pre-primary assessment data as a requirement for entry to primary school.

National or regional large-scale summative ECE assessments can be used to compare outcomes across domains, or to identify trends over time if conducted as part of a regular assessment cycle.²⁹ When accompanied by household survey data and disaggregated sufficiently, summative assessment data can be used to analyse the performance of groups of learners by factors such as geography, gender, disability status, and more. This makes summative assessment data useful for providing insight into how much learning is taking place, by who, and in which domains to draw conclusions about the quality of ECE, and the impact of policy implementation.³⁰

In West and Central Africa a key strategy to improve learning across all subsectors is to expand quality early learning services and integrate the measurement of early learning within national assessment systems.³¹ UNICEF has supported the development and implementation of the early learning assessment module which assesses children's cognitive, language, socio-emotional and motor skills to support a smooth transition to primary school.³² The tool has been contextualized and used to assess children's foundational skills in more than 13 countries, and has been adapted into PASEC, a regional tool to assess learning in Francophone countries.³³ The impact of conducting the ELA has been wide ranging and has informed policy reform and budget reallocation in several contexts.

The [East Asia-Pacific Early Childhood Development Scales](#) (EAP-ECDS) have been developed to monitor child development, track the development of vulnerable and at-risk children, and analyse the impact of early childhood policies and programmes on children.³⁴ A product of collaboration between UNICEF, Asia-Pacific Regional Network for Early Childhood (ARNEC), Open Society Foundations and the University of Hong Kong, EAP-ECDS is culturally and contextually appropriate, and has strong reliability and validity across seven domains. EAP-ECDS is available in both a long-form and short-form version, with the [short-form](#) offering flexibility without compromising validity to provide regular assessments at lower cost.³⁵ By [2020](#), EAP ECDS had been used by nine countries across the East Asia-Pacific region.³⁶

26 UNICEF, [Formative Assessment Places Student Learning at the Heart of Teaching](#), Education Case Study, 2021.

27 Webinar: 2022 Asia Pacific Regional Virtual Conference on Early Childhood Development, 5-8 July 2022.

28 Bazaldua and Clarke, 2022.

29 Clarke, Margaret M., & Luna-Bazaldua, Diego Armando, [Primer on Large-scale assessments of education achievement](#), 2021.

30 UNICEF, [Early Learning Assessment of Children Entering Primary Education: A regional prototype set of tools to support early childhood development policy making in West and Central Africa](#), 2015.

31 UNICEF, [Assessing Early Learning](#), Education Case Study, 2021.

32 UNICEF, 2015.

33 UNICEF, 2021.

34 Rao, N., Sun, J., Ng, M., Becher, Y., Lee, D., Ip, P., & Bacon-Shone, J., [Validation, Finalization and Adoption of the East Asia-Pacific Early Child Development Scales \(EAP-ECDS\)](#). UNICEF, East and Pacific Regional Office, 2014.

35 Rao, N., Su, Y. & Chan, S.W.Y., 'Reliability and Validity of the East Asia-Pacific Early Child Development Scales: A Longitudinal Validation Study in China', [Child Psychiatry Hum Dev](#), 2023.

36 University of Hong Kong, [Research Assessment Exercise 2020, Impact Case Study](#), 2020.

Another way to lower the cost of assessments is to use sample-based assessments to produce estimates of national or regional performance, based on the performance of individual children.³⁷ Since enrolment in ECE is not yet universal in many contexts, sample-based assessments of children in pre-primary may not be representative of the whole population, which may negatively impact the reliability and inclusivity of the data produced.³⁸ To mitigate this risk, sample selection can be structured to facilitate the collection of high quality, representative data.³⁹

Population-based surveys can be used to provide insight into school readiness skills, including for children who are not enrolled in ECE services. For example, in [Indonesia](#) the Early Childhood Development Index was first adapted and integrated into a household survey in 2018 in order to monitor progress towards Sustainable Development Goal 4.2.1. In 2021 an updated version

of the tool, the ECDI 2030, was piloted in over 1,700 households. ECDI 2030 assesses children aged 2-4 years, using 20 culturally relevant questions, includes a short module on disabilities, and implementation of aspects of the nurturing care framework. Alongside the use of ECDI 2030, Indonesia plans to introduce the [Global Scales for Early Development](#) (GSED) to measure holistic skills among children under 3 years.

Since the data generated from assessments serve different purposes, assessing school readiness skills will likely require a range of approaches.⁴⁰ While formative assessment may be used in classrooms on an ongoing basis to support the learning of individual students, governments may wish to plan for regular assessment of school readiness skills using a summative approach such as a national tool or regional tool in order to provide data about learning, and about the impact of ECE policies, at regular intervals.

37 Clarke and Luna-Bazaldua, 2021.

38 Consortium on Pre-primary Measurement in Africa (CPDMA) and USAID, [Technical Guide on Data for Impact in Early Childhood Education](#), 2020.

39 UNICEF, 2015.

40 CPDMA and USAID, 2020.



Establishing system capacity to assess school readiness skills

Assessment is not an end in itself, but the data generated can be a powerful tool to support improvements in learning and the strengthening of ECE systems.⁴¹

To achieve this, ECE systems need to support the collection, analysis, dissemination and use of data. In turn assessment data can strengthen ECE systems by generating the evidence needed to better understand system functioning and to illuminate scope for growth.

All [five core functions](#)⁴² of an effective ECE system are likely to impact the success of assessment, and to be impacted by the data generated. Assessment should therefore be considered in broader dialogue about planning and budgeting, curriculum, workforce development, engaging families and communities, and quality assurance to ensure sustainability. For example, measurement of school readiness skills should be integrated into the national monitoring system⁴³, data management systems may need to be expanded to accommodate data in school readiness skills⁴⁴, and the workforce competencies and skills may need to be developed⁴⁵ to embed assessment over time. Sufficient funds should be allocated from education budgets to support regular early learning assessment within national learning assessment systems.⁴⁶

Assessment approaches can build on existing resources and practices as captured in guidelines, standards or other relevant tools. Nepal's formative assessment strategy built on the established practice of monitoring based on the Early Learning Development Standards student report card.⁴⁷

Actors along the assessment chain need to be supported to develop the competencies required for their role.⁴⁸

For example, where summative assessment data are used, trained enumerators must develop competencies to administer, record and report student performance using appropriate systems and methodology.⁴⁹ Data officers and analysts must be equipped to clean, validate and analyse the data reported. Finally, decision makers at local, regional and central levels must be supported to interpret data effectively within the unique context, to ensure that data are used to fulfil their intended purpose.⁵⁰ In Rwanda, the Together for Early Childhood Evidence project has helped create a positive culture around data. Through an IDELA Classroom Environment (IDELA-CE) study, local education officials developed competencies in collecting and analysing data from ECE classrooms. As a result, local education officials were able to allocate financial and other resources more efficiently, as well as being able to tailor teacher training to stated needs.⁵¹

Introducing a [culture of formative assessment](#)⁵² requires investments in workforce development. Teachers must be supported to develop their knowledge of formative assessment, as well as to develop competencies to implement formative assessment confidently.⁵³ In addition to learning assessment techniques, teachers may require support to strengthen the teaching and learning strategies that will be required to close the loop between assessing learning, and then supporting children to address any gaps.⁵⁴ It will also be important for school leaders and

41 Ibid.

42 UNICEF, Build to Last: A framework in support of universal quality pre-primary education, 2020.

43 Early Learning Partnership, 2016.

44 CPDMA and USAID, 2020.

45 UNICEF, ARNEC, 2022; OECD/CERI, n.d.; Bazaldua and Clarke, 2022.

46 Early Learning Partnership, 2016.

47 Webinar: 2022 Asia Pacific Regional Virtual Conference on Early Childhood Development, 5-8 July 2022.

48 OECD/CERI, n.d.

49 Fernald et al., 2017.

50 CPDMA and USAID, 2020.

51 Heinzl-Nelson Alvarenga Lima, J., Sayre Mojgani, R., Raikes, A., Promoting Evidence-based Decisions Making for Early Childhood Education. Policy Brief. Research Technical Assistance Center: Washington, DC, 2022.

52 OECD/CERI, n.d.

53 Zi Yan, Ziqi Li, Ernesto Panadero, Min Yang, Lan Yang & Hongling Lao, 'A systematic review on factors influencing teachers' intentions and implementations regarding formative assessment', *Assessment in Education: Principles, Policy & Practice*, 28:3, 2021, 228-260, DOI: [10.1080/0969594X.2021.1884042](https://doi.org/10.1080/0969594X.2021.1884042)

54 OECD/CERI, n.d.

others to recognize the value of formative assessment and support the need for teachers to have time to gather data, reflect on it, and plan strategies to address gaps.⁵⁵

The capacity of existing data systems such as Education Management Information Systems must expand to accommodate data on school readiness skills.⁵⁶ A report into reorienting EMIS towards quality and inclusion noted of all the sectoral data categories for ECE⁵⁷, data on skills assessment were

the most lacking.⁵⁸ Data should be disaggregated by gender, and other factors of marginalization.

Budgets will vary considerably according to the scale of the assessment.⁵⁹ Factors to consider when using an international tool as part of a project evaluation or nationally representative study include costs related to: preparation of the study; adaptation of the tool to the cultural and linguistic context(s); training of key workforce; data collection, analysis, and dissemination.⁶⁰

Next steps

Introducing or reforming assessment of school readiness skills is a process which should be considered as part of broader dialogue about ECE system strengthening. Dialogue could be informed by some of the following steps:

1. **Clarify the goals of assessing school readiness skills and map the types of early learning assessment which are already ongoing or planned**, to identify the extent to which they are suitable to achieve the goals. As part of this step it may be useful to establish whether school readiness skills are already defined in policy, law or any other relevant guidance, and the extent to which these definitions reflect current evidence relating to the importance of holistic school readiness skills.
2. **Where there are gaps in assessment of school readiness skills, identify the appropriate type of assessment** to meet the gap and develop a road map adopting a tool (e.g. ELA, ECD-EAPS), or assessment approach (e.g. formative/summative).
3. **Consider all relevant members of the workforce who will support the measurement process**

through administering assessment, collecting and reporting results, analysing data and utilizing the results. Establish how they would be adequately supported to perform these roles effectively.

4. **Identify if and how data systems such as EMIS need to evolve** in order to capture data on school readiness systematically, and with sufficient level of disaggregation.
5. **Consider how data will be used, who they will be shared with, and how they will be disseminated.**

UNICEF advocates for inclusive access to quality ECE for all children. For further details, please see programme briefs on gender, disability inclusion, and ECE in emergencies.

55 Yan et al., 2021.

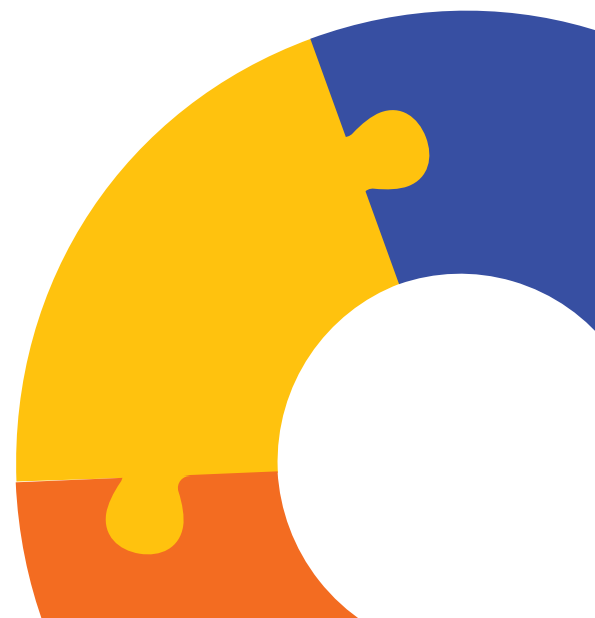
56 CPDMA and USAID, 2020.

57 Enrolment, teacher count, teacher training, government expenditure, household expenditure

58 Subosa, and West, M., [Re-orienting Education Management Information Systems \(EMIS\) towards inclusive and equitable quality education and lifelong learning](#), UNESCO Working Papers on Education Quality 05, 2018.

59 See Early Learning Partnership, 2016; UNICEF, *Assessing Early Learning West and Central Africa*, 2020.

60 Early Learning Partnership, 2016.



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