ASSESSMENT-INFORMED INSTRUCTION:
Classroom Level

Introduction and Purpose

Using assessment to inform instruction is a necessary approach for improving the quality of teaching; increasing accountability for student learning; and ensuring more equitable improvements in performance.

When embedded throughout teaching, assessment serves as both a metric and a mechanism for quality, accountability, and equity in the classroom. As a metric, assessment can help tell us: Is the intended learning being acquired? Are all classroom actors (students, teachers, head teachers, coaches) progressing in their role in achieving the intended learning outcomes? Is learning being acquired by all students, or by just a select few? As a mechanism, assessment can help facilitate higher-quality instruction by providing time-sensitive information on student progress. When used constructively, assessment results may also help students, teachers, coaches, and head teachers hold one another accountable for achieving learning goals and can help teachers refine their remediation and instructional approaches. Assessment is useful for promoting improved instruction by informing lesson planning, materials use, and teaching strategies, as well as teacher training and ongoing support. It can also be used to promote equity when it is used to systematically identify, and address, students' individual- and group-learning gaps.

FIGURE 1. Overview of assessment-informed instruction

ASSESSMENT IN THE SYSTEM

See *Assessment-Informed Instruction: Systems Level Guide*

Measurement of teaching and learning outcomes across different levels of an education system

ASSESSMENT IN THE CLASSROOM

Covered in this guide

Assessments used to make changes to curriculum or instruction

SUMMATIVE

Assessment at specific **fixed periods in the academic calendar or at fixed points in an intervention**

Assessment at specific fixed periods in the academic calendar **to measure students' progress toward learning goals**

ASSESSMENT FOR LEARNING (AFL)

Process through which formative assessment is used to cyclically inform and change instruction. Summative assessment also becomes formative when it is used to inform next steps in instruction or modify resources and support to teachers or students

ASSESSMENT OF LEARNING (AOL)

Process of using summative assessment to evaluate students' knowledge and perfomance against the curriculum goals monitored throughout the unit using AFL and AAL. Can be used for future planning and teacher self-evaluation

FORMATIVE

Assessment used to **inform and adapt intervention design,** including curriculum, training, and ongoing teacher support

Ongoing formal and informal assessment to **check students' understanding and learning**

ASSESSMENT AS LEARNING (AAL)

Process of providing increasing opportunities for students to use formative assessment to chart their own progress and reflect on their own learning

The terms above are prominent in the existing literature on assessment and are sometimes used interchangeably or in overlapping ways. The above graphic presents the terminology that will be used in this guide. These terms are further elaborated, with examples, in following sections.

Assessment of learning, assessment as learning, and assessment for learning also exist at the systems level. However, for the purposes of this guide, we discuss them in the context of the classroom as indicated in the figure above.

Assessment-informed instruction in the classroom should fit within a broader system of assessments that are used to collect data about student learning, track students' progress, and inform systems-level decisions (see **Figure 1**, above). This larger assessment system includes assessments conducted through school or district examinations and through large-scale assessments for the purpose of system monitoring. This guide focuses on how policy makers, donors, and implementing partners can strengthen assessment-informed instruction in the classroom, and particularly on the support that teachers will need to integrate it into their teaching. This guide also provides support for how an assessment-informed instruction approach can be practically accomplished in ways that do not overburden the teacher by creating too much additional work. The *Assessment-Informed Instruction: Systems Level* guide explores assessment at other levels of the system.

ORGANIZATION

This guide is organized as follows: First, it discusses what is meant by assessment-informed instruction, explaining concepts central to understanding such instruction in the classroom and describing some key challenges experienced by teachers in low- and middle-income countries (LMICs). It then explores how assessment-informed instruction can be operationalized by teachers—namely, how do teachers assess for learning? Finally, it provides a series of recommendations for supporting assessment-informed instruction at scale as part of foundational literacy and numeracy (FLN) initiatives.

WHAT IS ASSESSMENT-INFORMED INSTRUCTION?

Assessment-informed instruction refers to the activities undertaken by teachers—and sometimes students, head teachers, and coaches—that provide timely information to track progress and modify subsequent teaching and learning activities. As shown in **Figure 2**, these activities vary in their duration, frequency, and format, from a one-minute observation of a child reading to a weekly spelling quiz or unit-long project on adding and subtracting in a pretend store. Both formative and summative assessments can be used to inform instruction, depending on whether the purpose is to determine the extent to which learning goals were reached (assessment *of* learning) or to inform the best path for achieving learning goals (assessment *for* learning).

Assessment-informed instruction should be about actually informing instruction. It is not a standalone diagnostic or summative test. Nor is it a process focused solely on identifying struggling students. Rather, assessment-informed instruction centers on the effectiveness of the teacher's pace and practice and, when used to its full potential, can help identify the strengths and gaps in learning for each child, thereby helping teachers teach better.

> **MEET TEACHER DEE**
>
> Teacher Dee is a grade 2 teacher in a primary school located far from major cities—but with a spectacular view of the mountain range. Her school has a beautiful garden and a trading center nearby, but no electricity. In her classroom, Teacher Dee has mother-tongue literacy and numeracy textbooks, as well as a set of storybooks, bottlecap counters, and slates for her 60 students. Teacher Dee loves her work and her students—she's been at this for 15 years! Still, she is faced with a learning crisis: only one-third of her students will have basic reading and numeracy skills by the end of grade 3.
>
> *Illustrative examples from "Teacher Dee" show how assessment-informed instruction interventions might look like in resource-constrained settings. Look out for Teacher Dee in call out-boxes throughout this guide!*
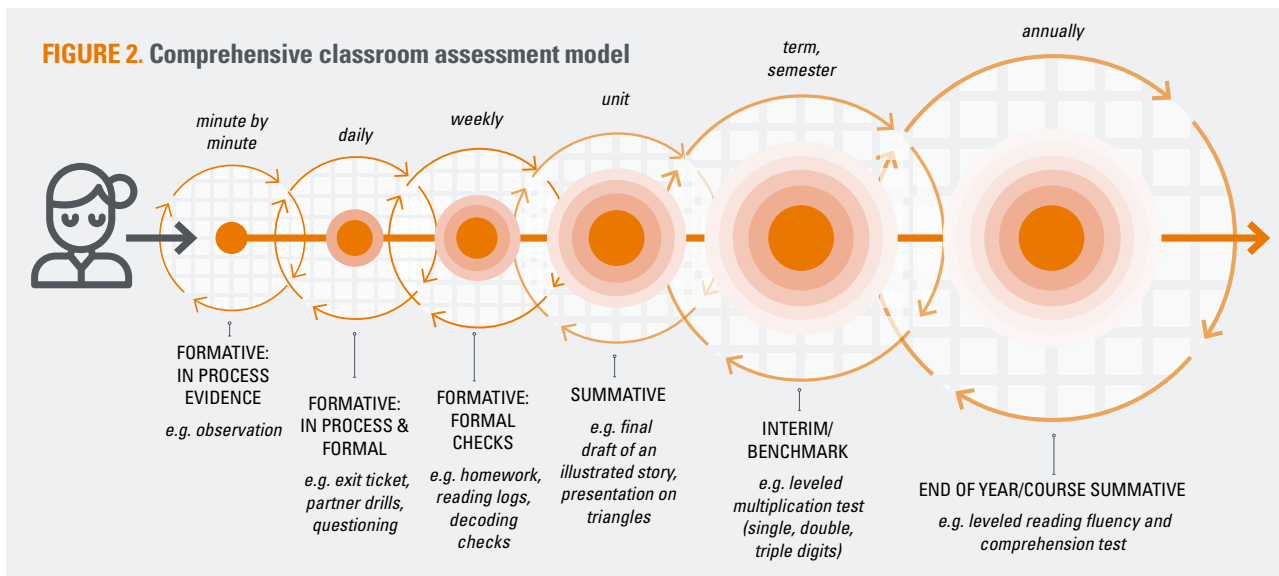
The most important component of assessment-informed instruction, and **perhaps the most challenging, is supporting teachers in taking specific actions in response to the information generated through assessment**. This is essential because it is the piece of the puzzle that can positively influence teaching and learning for the better. When teachers see their use of assessment to inform instruction help their students, they may in turn value and apply these practices more.

FIGURE 2. Comprehensive classroom assessment model

minute by minute

daily

weekly

unit

term, semester

annually

FORMATIVE: IN PROCESS EVIDENCE
e.g. observation

FORMATIVE: IN PROCESS & FORMAL
e.g. exit ticket, partner drills, questioning

FORMATIVE: FORMAL CHECKS
e.g. homework, reading logs, decoding checks

SUMMATIVE
e.g. final draft of an illustrated story, presentation on triangles

INTERIM/ BENCHMARK
e.g. leveled multiplication test (single, double, triple digits)

END OF YEAR/COURSE SUMMATIVE
e.g. leveled reading fluency and comprehension test

ASSESSMENT *OF* LEARNING

In the classroom, assessment *of* learning (AOL) refers to the use of summative assessments administered at the end of a unit of instruction, threshold in the curriculum, or specific period of time (such as mid-term or end of year). AOL is backwards-looking and determines what students have achieved compared to the learning goals that teachers should already have been monitoring throughout the unit or year using formative assessment. These summative assessments should be used to inform instruction and create equitable learning experiences, rather than to punish students who are behind in the curriculum. They can be compared to similar assessments conducted at the start of the unit or time period to measure change; be used to inform planning for the next unit; inform remediation to close gaps between where students are and where the curriculum expects them to be; and provide teachers with an opportunity for self-reflection on "what worked."

ASSESSMENT *FOR* LEARNING

Assessment *for* learning (AFL) is the ongoing, often informal, evaluation of the teaching and learning processes taking place in a classroom to guide adaptations to instruction and target remediation and enrichment. Assessment and instruction are part of an intrinsic cycle to promote student learning—indeed, teachers should assess learning frequently to determine the extent of students' progress toward achieving learning goals and how best to get them there. Both formative and summative assessments can be used *for learning*, but the structure and frequency of formative assessments—which are embedded in the teaching process or as a routine check for understanding—mean that these are the simple assessments most frequently used for this purpose (see Table 1).

AFL is an important strategy because it can create opportunities for students to recall, reinforce, and apply skills and content knowledge on a regular basis in foundational numeracy and literacy. This helps them build these skills from the basics (letter sounds and number identification) to more complex tasks (comprehension and inference questions, as well as multiple-step math problems). Formative assessment approaches can also promote higher-order thinking skills if they challenge students to self-reflect on their learning and collaborate during peer-assessments. There is evidence that effective classroom AFL can be especially impactful for improving learning outcomes among struggling students,[10] which is

TEACHER DEE'S ASSESSMENT

Teacher Dee has just been invited to a district-level training on using assessment for learning. She hasn't heard of this type of activity before. Her teaching generally focuses on helping her students pass comprehensive exams so they can move on to grade 3, when they will take the national exam. In her classroom, Dee tries to call on students in both the front and the back of the classroom, and sometimes she has them read in pairs. She also asks them to solve simple math problems on their slates and has them practice writing words in their exercise books, which she checks. However, she was trained to strictly follow the teachers' guides for mother tongue literacy and for numeracy, so she doesn't quite understand what she would change in her teaching based on her students' actual work.

The Global Reading Network's Assessment to Inform Instruction: Formative Assessment[9] paper provides a detailed, in-depth look at formative assessment evidence and best practices in support of structured pedagogy.

why many leaders in the field of assessment argue that AFL, used correctly, can have notable impacts on international test performance in countries in the global North[11] and even more robust impacts in LMICs.[12] All of this depends, of course, on simplifying these practices for typical teachers, supporting their consistent use, diversifying assessment products, and encouraging a climate where assessments are seen as assistive rather than intimidating[13].

ASSESSMENT *AS* LEARNING

Assessment *as* learning (AAL) functions as a complementary process through which students direct their own or one another's learning, creating opportunities for self-reflection and ownership. AAL begins with teachers and students identifying their learning goals, and students taking the lead in tracking their progress toward these goals. This can also include peer assessment. For example, students can mark their own math homework and discuss common mistakes, or read each other's essays and share comments or feedback. This approach has shown to increase students' confidence,[14] self-efficacy, and active learning.[15] AAL strategies and activities should align with the cognitive, social, and emotional development of students in early primary school, and draw from many of the same approaches as AFL, with the key difference being that the student—not the teacher—plays the role of assessor. To ensure that all students benefit equitably from AAL, teachers should be supported in clearly communicating the assessment purpose, product, and scoring criteria, and in adjusting each of these according to the different abilities and needs of students[16]. For the purpose of this guide, and given that there is often overlap between AAL and AFL, both concepts are encompassed in the term "assessment for learning."

Table 1. Assessment *for* learning versus assessment *of* learning

	ASSESSMENT TYPES	FORMATIVE OR SUMMATIVE?	LITERACY EXAMPLES	NUMERACY EXAMPLES
Assessment *for* and *as* Learning (AFL and AAL)	Practice during instruction	**Formative:** During instruction, the teacher assesses students as they are practicing skills in class and provides ongoing support.	Students work in pairs to practice blending target letter-sounds, with their partner giving feedback and the teacher observing and supporting.	Students "show and tell" adding single-digit numbers on slates, while the teacher observes and gives feedback.
	Anecdotal observations	**Formative:** The teacher assesses and takes notes, for her own reference, about what students can and can't do during the daily lesson. *She pairs students based on her observations.*	The teacher reads a story aloud and asks questions before, during, or after reading, tracking who is able to answer questions correctly when called on.	The teacher takes notes during an activity as students arrange objects by size.
	Marking exercise books	**Formative:** The teacher reviews and marks students' exercise books. *She reteaches "gap" areas that she identifies.*	The teacher reviews and comments on the compositions that students write in a grade 3 literacy program, and makes time for *students to revise based on feedback.*	The teacher marks a place-value exercise that students have completed in their exercise books, circling errors *for students to review and correct.*
Assessment *of* Learning (AOL)	Weekly quiz	**Summative:** At the end of the week, the teacher assesses whether students have mastered foundational literacy or numeracy concepts and content introduced that week. *She develops a plan for those who need remediation or more challenging tasks.*	Students read a short text or list of words comprising letters learned during the unit. *Students who are unable to read at least three out of five items are asked to join the reading club for 20-30 minutes after school that day.*	Students are given a set of single-digit addition problems to solve using manipulatives. *Those who score lower than seven out of ten are given additional help by an older student or the teacher.*
	Tests	**Summative:** At the end of a sequence of lessons, unit, or semester, the teacher gives written or oral tests to measure students' mastery against an expected goal. *She develops a plan for those who need remediation or more challenging tasks.*	Students read a short text, utilizing vocabulary words covered in the unit, and then answer a set of questions about the text.	The students complete a set of measurement problems that match the type of problems covered during the unit.

Evidence shows that assessment-informed instruction using AFL is most effective in improving FLN outcomes when what is being taught, and assessed, is aligned with students' abilities, needs, and learning goals.[17] Of course, assessment for learning improves outcomes only when teachers are able to conduct, analyze, and interpret results from assessments, which is why FLN programs should not have their expectations around these tasks be too complicated or formulaic. **Figure 3** summarizes four principles that have emerged from successful approaches to FLN, documented by RISE as the Aligning Levels of Instruction with Goals and the Needs of Students (ALIGNS) principles[18]. These principles should underpin the design of a high-quality AFL intervention.

FIGURE 3. ALIGNS Principles

Principle 1: Set clear learning goals that are coherent with children's current learning levels.

Principle 2: Make instruction coherent with children's current learning levels and targeted learning progress.

Principle 3: Provide effective and coherent support to teachers.

Principle 4: Find contextually appropriate ways to implement the preceding principles.

Coherence refers to practices that meet students and teachers at their level of understanding.

Despite broad recognition of the potential utility of AFL,[19] effectively implementing formative assessment approaches has proved difficult for teachers and systems across contexts.[20] This is not the fault of teachers but due to poor program design that does not take into account the realities of classrooms in LMICs and often is unrealistic compared to the typical daily decisions teachers need to make in the context of effective FLN interventions.

Outlined below are four key challenges to implementing assessment for learning. Possible ways to address these challenges will be discussed in the subsequent sections.

1. Knowing what to assess and when: When assessment is not directly addressed in teachers' guides and textbooks, teachers need to determine when to carry out assessments and need to create their own assessments. However, this can be very challenging for those teachers who are not used to conducting formative assessments; such teachers would need to receive substantial training and support in identifying easy opportunities to undertake no-frills assessments.

2. Creating the time needed for assessment and remediation: In many contexts, teachers feel that the lesson time available for reading and math is not sufficient to keep pace with the curriculum, much less for assessment, review, and remediation. In addition, large class sizes can make assessing students, interpreting results, and differentiating lessons in response to those results extremely time-consuming. Teachers need support on how to practically use these methods, with a focus on how they can be both fun and brief.

3. Recording and tracking assessment results: The need to not only assess students but also track their progress becomes particularly challenging in large classrooms, as well as in cases where teachers are not accustomed to recording assessments on an ongoing basis. Tracking student progress also requires materials, including paper, storage folders, or tablets, which may be in short supply. Some assessment efforts have been undermined by creating too much administrative burden for teachers, and effective assessment in the classroom need not always require teachers to track every child in every round of assessment.

4. Using results: What matters most is teachers actually using the results, but teachers may feel that they either don't know how to use the results or don't have the resources to provide the remedial support or extension activities that the results might call for. While the instructional planning that teachers need to do based on assessment results can be broad (involving techniques for differentiating instruction or tapping into a remedial instruction program), introducing even simple ways to use assessment results can increase teacher uptake.

TEACHER DEE'S FIRST REACTION TO ASSESSMENT IDEAS

"Here we go again with the new teaching approaches. How much time do these people think I have? Have they ever taught 60 eight-year-olds in one room? It takes me 10 minutes to take attendance, 20 minutes to pass out books and get every child on the right page (because one-third of them missed school yesterday), and 2 hours most evenings to mark exercise books by my little solar-powered lamp. **And now I am being asked to track how all 60 of my students are progressing minute by minute?"**

The remainder of this guide focuses primarily on AFL because it is a particularly high-leverage practice for improving FLN outcomes in LMICs and is currently underutilized compared to AOL. The discussion below offers strategies for mitigating the four key challenges to implementing AFL outlined above.

How Do Teachers Assess for Learning?

The Teaching at the Right Level (TARL) approach, developed by Pratham and J-Pal, focuses on helping teachers use formative assessment data:

"By testing children one-on-one, instructors understand the specific learning needs of each child. Instructors use these assessment results to create manageable groups of children with similar learning needs and use level-appropriate activities to help children learn. The assessment process also allows instructors and mentors to track improvements and keeps the whole system focused on the child's learning progress."[22]

When planning AFL activities in their classroom, teachers could ask themselves four guiding questions[21]:

1 **Why am I assessing?**

2 **What am I assessing?**

3 **What methods of assessment should I use to collect evidence of student learning?**

4 **How can I use the information from this assessment, and when will I do this?**

Teachers will vary in their ability to utilize these questions to apply assessment-informed instruction. It is useful to see teachers as falling along a continuum from initial and basic use of classroom assessment (tier 1) to more advanced and comprehensive use of assessment, including higher-order questioning, for instructional planning (tier 4), as described in **Table 2**. It should be noted that many FLN programs target teachers who are likely to need the type of support shown in tiers 1 or 2—and moving along the continuum can take multiple years of support. It is counterproductive to have a teacher support program focus on moving teachers from tier 3 to 4 when the vast majority are at tier 1 or below, so it is important to target the support to teachers' actual levels.

TABLE 2. Continuum of AFL implementation in the classroom

	WHAT IT LOOKS LIKE IN THE CLASSROOM	EXAMPLE	APPROPRIATE SUPPORT TO REINFORCE AND MOVE TEACHER TOWARD THE NEXT TIER
Tier 1: Basic	The teacher moves around the classroom, observing and giving support to students.	The teacher redirects students' fingers to the words they should be reading. They mark exercise books with ticks and x's but do not record.	**Generating enthusiasm and self-efficacy** **Materials:** Simple and fun formative assessment games in teacher materials. May include a simple chart to record results (for example, *"Thumbs up/ thumbs down—count how many students showed the correct gesture."*) **Training:** Trainers build buy-in among teachers through fun assessment games and demonstrations from "champion" teachers. **Ongoing teacher support:** Coaches ask teachers to engage in a "show and tell" where they show their peers how they adapted an assessment game for their class. Coaches walk teachers through formatively assessing a small number of students and recording and discussing the information. Teachers share experiences "testing" different assessment approaches in guided Community of Practice discussions.
Tier 2: Developing practice	The teacher is supported in using simple assessments and recording forms (provided in teachers' guides) and in planning for class review.	The teacher gives students an "exit ticket" problem at the end of every math lesson, which they must solve using their slates. Using a tracker, the teacher notes who got the problem wrong and thinks about how to help them in next lesson. If students got the problem correct, the teacher leaves tracker blank to reduce workload.	**Using information to target support** **Materials:** A menu of formative assessment activities that teachers may choose from. A tracker (written or electronic) for noting students' mastery of key FLN competencies over time. **Training:** Teachers select which assessment approaches they want to test and learn two to three techniques to simplify their use of assessment information. (For example, *"Stack all the notebooks of students who did very well on the math homework in one pile, and those who did poorly in another pile. The following day, pull one book from each pile to pair students."*) **Ongoing teacher support:** Facilitators hold group grading and planning sessions with teachers where they ask teachers to share how many of their students are behind on the skill or content being taught—and how they can target support. Coaches use videos to build teachers' classroom management skills for group activities.

	WHAT IT LOOKS LIKE IN THE CLASSROOM	EXAMPLE	APPROPRIATE SUPPORT TO REINFORCE AND MOVE TEACHER TOWARD THE NEXT TIER
Tier 3: Establishing practice	The teacher creates simple assessments based on scope and sequence/ learning goals, and in planning for differentiation and grouping. The teacher integrates lower-level questioning, asking students to summarize and interpret content being taught.	For a writing unit on "setting," the teacher develops a checklist for assessing students' one-paragraph descriptions of their classroom. The teacher gives students the scored checklist and marked paragraphs the next day. While the students revise their paragraphs, the teacher pulls aside the five students who got only one check and works with them individually. For the three students who got zero checks, the teacher asks them to describe the classroom orally and then write down the names of any objects in the classroom that they can identify. The teacher then offers additional support in an after-school club.	**Developing higher-order thinking** **Materials:** Call-out boxes or supplementary pamphlets that create opportunities for questioning that ask students to explain, defend, or justify their answer. (For example, *"Ask students to estimate the number of beans in a jar. Then ask 2-3 students to explain how they made that guess."*) **Training:** Trainers address the importance of a positive, safe, and encouraging classroom climate, where guessing and getting it wrong is celebrated. They draw on teachers' own experiences and on social-emotional learning and school climate curricula. **Ongoing teacher support:** Coaches hold discussions with teachers about how to target support to students. They lead reflection discussions that consider questions such as *"What part of your lessons this week do you think students learned the most from? What did they struggle with the most? How do you know? What did you do about it?"* Over time, teachers take a growing leadership role during these sessions.[23]
Tier 4: Advanced practice	The teacher develops a variety of assessment tasks based on a review of syllabus and teaching and learning materials, and in planning for differentiation. The teacher integrates higher-level questioning, asking students to make predictions and evaluate their own and others' ideas.	For a unit on measurement, the teacher ends each day by calling on different students to play a distance estimation game. The teacher pulls practice questions from the student exercise books for a weekly review quiz, with students checking each other's work. Using results from the weekly quiz, the teacher assigns mixed-ability groups of learners at different levels an oral project where they, as a group, guess the length of three objects and then measure them and discuss what they found. As students work, the teacher monitors and makes notes on where students struggle most, to use when planning tomorrows lesson. When students present, the teacher asks them to justify and evaluate their initial guesses, and how both estimation and measurement can be applied in their lives.	**Promoting self-directed assessment and reflection** **Materials:** Trackers for students, including reading logs and reflection journal prompts. Supplementary materials for both enrichment and remediation. **Training:** Trainers help teachers learn about and conduct student self-assessment and peer-assessment activities. **Ongoing teacher support:** Coaches work with teachers to identify specific remedial activities that they will try with struggling students, track, and discuss at the next coaching session. Teachers review and discuss student work together or videotape one another as they teach; they then re-watch the video, pointing out strengths and times where the students seem confused.

As noted above, one key challenge that teachers—especially those at tiers 1 and 2 of their utilization of assessment—may face is knowing what to assess and when. Two other key challenges are recording and tracking results (and the time this takes) and, perhaps most critical to AFL, knowing how to use the results. When they are the right fit to purpose, various formative assessment techniques, including those in **Table 3** below, can help teachers navigate such considerations before, during, and after teaching. The keys to successful implementation are that the techniques in question makes sense to the teachers, that they view them as valuable, and that they are comfortable using the information generated. In selecting or designing formative assessment tools for an FLN program, the importance of simplicity cannot be overstated. Use this table to identify simple assessment practices that could be added as a quick win in an existing FLN program or could be included in the design of a future intervention.

TABLE 3. Illustrative assessment techniques for instructional decision-making

	BEFORE TEACHING WHAT IS IT? WHAT CAN THIS TOOL TELL ME? (IS IT WHAT I WANT TO MEASURE?)	DURING TEACHING HOW MUCH TIME WILL THIS TAKE? HOW WILL I KEEP TRACK OF STUDENT PERFORMANCE?	AFTER TEACHING HOW CAN I CHANGE IN MY PLANNING IN LIGHT OF THESE RESULTS?
Thumbs up/ thumbs down; traffic lights; smiley/sad face	Students show their understanding or answer a yes/no/true/false question physically (using their thumbs, hands, or expression). It allows the teacher to quickly check the class's understanding of a concept.	*Minimal Time* Quickly observe students' responses.	Reteach any concept that received a negative response (thumbs down, red light, or sad face) from more than 1/3 of students before moving on.
No-hands-up rule	The teacher calls on students at random, rather than having students raise their hands. This increases the "stakes" for learners to pay attention and prepare to be called on. It also allows the teacher to take stock of shy and more reluctant students. Note: This activity may be intimidating for some learners and should be preceded by partner discussions or think-pair-share.	*Minimal Time* Call on students in the back or who haven't spoken in a while. Although this tool is a time-efficient strategy, it also requires establishing a safe and supportive classroom environment.	Note in a class tracker any students who could not answer or who got the wrong answer, and check in with them later about their understanding and their feelings during the activity.
Exit ticket	Every student must complete a single, 3- to 5-minute task before leaving the lesson or classroom. The task can be done on a slate, a strip of paper, or orally. This tool provides the teacher with a snapshot of every student's understanding of a limited amount of lesson content.	*Moderate Time* Scan and sort exit tickets at the end of a lesson, during independent work, or during a break.	Pair students who got the exit ticket correct with those who did not. If most of the class got the exit ticket wrong, reteach; if only a handful of students got the exit ticket wrong, pull them aside for extra support.
Weekly quiz	This tool provides information on each student's mastery of content taught, using a simple and ideally routine format that students are used to: 5 to 10 questions (close- and open-ended) with material pulled directly from the week's exercises and practice.	*Substantial Time* Mark students' scores, record them, and return them to students and parents.	Identify and celebrate content and skills that students have mastered. Identify and review the content and skills reflected in questions that more students answered wrong. Provide extra attention or additional review time to students who performed poorly overall.
Journal entry	Students use a journal to elaborate on their understanding, give details, and demonstrate writing skills. This gives the teacher deeper insights into students' understanding, written communication skills, and, sometimes, their mood or well-being.	*Substantial Time* Read each student's entry, and record their scores.	Group students based on their demonstrated understanding of the topic or on their writing skills. For students who struggled to write, check their conceptual understanding orally to better target support.
Questioning	The teacher asks questions that require students to use the thinking skills that the teacher is trying to develop. This tool allows the teacher to evaluate students' understanding while allowing students to develop critical thinking and independent thinking skills.	*Moderate time* During lesson, jot down the names of students struggling to answer questions, and place a star next to questions that few students attempt to answer or answer correctly.	Review questions that were challenging for the class. Check in (either individually or in small groups) with students who gave the wrong answer.
Writing checklist	The teacher gives students 3 to 5 areas of focused evaluation to guide their reading of their own or a partner's writing (e.g., title; punctuation; vocabulary).	*Moderate Time* Have students assess themselves and one another; teacher can also evaluate a sample of students' writing.	Identify writing components to revisit in future lessons.
Student presentation rubric	Oral, visual, or artistic presentation that is scored on multiple criteria that are communicated in advance. This tool allows the teacher to assess students' knowledge through mediums other than written assignments and tests. It gives students time to prepare and lets them know what they will be evaluated on in advance.	*Substantial Time* Mark in real time, and record scores after.	Determine if students have adequately mastered content or if more remediation or re-teaching of specific rubric components is needed.
Partner practice	Allows students think about their partners' (and in turn their own) learning processes, while the teacher observes. It enables all students to practice and receive feedback.	*Moderate Time (preparation)* Create a simple template or criteria for partners to give each other feedback; observe pairs as they work; ask students to report out; record scores.	Try different combinations of students (for example, if two students struggle, re-pair them with two students demonstrating mastery).

	BEFORE TEACHING WHAT IS IT? WHAT CAN THIS TOOL TELL ME? (IS IT WHAT I WANT TO MEASURE?)	DURING TEACHING HOW MUCH TIME WILL THIS TAKE? HOW WILL I KEEP TRACK OF STUDENT PERFORMANCE?	AFTER TEACHING HOW CAN I CHANGE IN MY PLANNING IN LIGHT OF THESE RESULTS?
Numbered heads together	Students are broken into teams of 4, and numbered off from 1 to 4. The teachers presents a question and a time limit. Students work together on answer, and then the teacher calls a number (1 to 4). The students with that number then give the answer. This tool gives students an opportunity to ask follow-up questions and justify their answers. The teacher is able to check the understanding of a sample of students while all students actively review.	*Minimal time* Include time to go over how groups got answers. Note students who are unable to explain how they got an answer, groups who gave more than one incorrect answer, and questions that were difficult for students to answer. When using this strategy routinely, students will become accustomed to counting off.	Review difficult concepts on the spot or at the start of a lesson the next day. Give struggling students extra attention during independent work.

The effective use of formative assessment techniques—especially as teachers advance toward tiers 3 and 4—hinges on the classroom climate and culture, and teachers' classroom management. Teachers who have established routines for getting into groups, quieting learners down at the end of group work, and managing materials will feel more comfortable using and acting on formative assessments. Students who are consistently celebrated for trying, even if they get the answer wrong, and who are given choices and an opportunity to speak will also be more responsive to formative assessment tasks. For example, if a child is repeatedly punished for giving wrong answers, they may feel anxious if asked an open-ended, higher-order question. Conversely, if a child is rewarded for volunteering in class, they will feel more confident justifying or elaborating on their opinions. Because a positive classroom climate and consistent classroom management is especially challenging in large classes, multilingual classes, classes with learners of different abilities, and classes in conflict-affected settings, techniques also need to be adaptable for different contexts. The best people an FLN program can tap to test and adapt these techniques are teachers themselves—with substantial support.

How Can Teachers Be Supported in Assessing for Learning at Scale?

Because many of the teachers implementing foundational literacy and numeracy programs likely have limited exposure to implementing assessments for learning, this section will focus particularly on how interventions working at scale can integrate supports for teachers in tiers 1 and 2.

IMPROVED UNDERSTANDING OF CONTEXT

There are a number of contextual factors that can impact the ease with which teachers successfully integrate AFL into their practice. It is important to identify these factors and take them into account.

TEACHER DEE'S FAVORITE TOOL

Teacher Dee loves numbered heads together (see Table 3). During a recent district-level training, the trainer had the teachers themselves respond to open-ended questions this way. It was so much fun, and she saw how it could give her a sense of how well her students understood different content and concepts.

She adapted the assessment activity for 60 students by creating teams of 5 students who would work together to solve double-digit addition problems. Teacher Dee selected a different group to observe as they worked through each of six math problems. Students loved this activity, and because they knew there was a chance they'd be called on each time, they all worked hard to understand how to solve the problems. When she asked all the "number 2"s to give the answer to problem 1, for example, she also asked students from two of the other teams to show how they got the answer on the board. This created an opportunity for review and gave Teacher Dee a sense of what steps are difficult for students.

A recent study by Julius Atuhurra and Michelle Kaffenberger examined the curriculum and examination systems of Uganda and Tanzania using the Surveys of Enacted Curriculum methodology. Focusing on English and mathematics, the authors found a high level of incoherence between national exams and curriculum standards in both countries. For example, in Uganda, only 4 of the 14 topics in the English curriculum standards were found on the primary leaving exam, and two of the topics identified as high priority in the curriculum did not even appear on the exams. Establishing linkages between formal examinations, instruction and curriculum is essential to incentivizing higher-quality teaching.[24]

Assessment policy: Most countries have policies regarding assessment, but these policies may or may not explicitly include assessment in the classroom, and often do not promote AFL. Examine the policies that influence current classroom assessment practice to determine if they are mandated by national or subnational bodies and the extent to which they align with assessment for learning principles and the curriculum. In many cases, focusing on informal, formative assessment can provide teachers with a way to gain valuable information to inform their instruction, even if there are limited opportunities to change the more formal assessments being used.

System coherence: Look at whether there is alignment between assessments at different levels, as well as between those assessments and curricular learning goals. There is increasing evidence of substantial mismatches between curricula, instruction, and assessments (see box). Such mismatches can make it difficult for teachers to know what to focus on in classroom assessments and how to use assessment results.

Where formative or summative data are readily available, look at subnational-level gaps between what is being assessed and how students are performing on these assessments—this can be useful information as you design approaches that meet students where they are with meaningful AFL, which, in turn, will help move them toward their learning goals.

An effective FLN program will encourage teachers to utilize simple assessments that align with the instructional approach as well as the broader structures for student promotion and for teacher management and evaluation. Working with the existing system surrounding classroom assessment will make your program more cohesive; see the *Assessment-Informed Instruction: Systems Level* guide for a discussion of how to address incoherence at the systems level.

What is happening in classroom: How assessment policy is carried out at ground level is important to understand, as the beliefs and current practices of teachers, head teachers, and local education officials will have a strong influence on their readiness to implement AFL. It is also important to understand which "tier" the teachers are generally starting from in order to gauge the amount and type of support needed.

Visit with local government offices and head teachers to gain a sense of what value, if any, is placed on assessment-informed instruction by leadership. Ask to see any past promotion exams, report cards, or other evidence of assessment tied to student promotion. Discuss the weight of these documents in the instructional decision-making of teachers and the degree to which any "smaller" assessments—for instance, monthly tests and weekly quizzes—are used to build up to these larger evaluations. This type of initial mapping should be done thoughtfully, by first reviewing existing research and reports, and by planning visits to schools in coordination with government entities and partners doing similar work. Aggregate data on class size, repetition rates, first-language distributions, school-related gender-based violence rates, and disability prevalence can be useful for developing your hypotheses concerning the potential barriers to enacting assessment-informed instruction. It is equally important to identify the resources, experiences, attitudes, and shared goals that can be leveraged to nurture AFL. Interviews with teachers can confirm or expand on barriers and assets, and the involvement of teachers at all steps of the assessment design and testing process will help keep the techniques and processes you train and support teachers on relevant and usable.

Classroom observations for diagnosing which tier teachers are starting from should focus on the following:
- Teachers' use of formal and informal assessments
- Teachers use of different levels of questioning (summarizing, interpreting, predicting, and evaluating)
- Teachers' responses to right and wrong answers by students
- Teachers' records of any assessments

TEACHER DEE'S MULTILINGUAL STUDENTS

Teacher Dee loves that her students come from different parts of the country and speak different languages—but this makes assessment particularly difficult. For example, she recently gave a word problem quiz (in the language of teaching and learning) to the class, and all of her minority-language speakers (including some of her best math students) failed! Both she and her students felt so discouraged.

In alignment with program materials, the program built an assessment item bank in different languages with answers. Dee was then able to use these in her lessons to assess students in other languages without a ton of extra work. She even noticed how eager her multilingual students have become for quiz day!

- Teachers' practices of grouping, differentiation, or individual attention as a result of assessments
- Teachers' change in pace, approach, or re-teaching as a result of assessments

The World Bank's *Teach* observer tool includes criteria to gather data on the effectiveness with which teachers check for understanding, give feedback, and promote critical thinking through open-ended questions.[25]

These observations should be followed by an interview with teachers that asks the four key questions for teachers to consider (outlined above in "How Do Teachers Assess for Learning?") and that also inquires about their knowledge of formative assessment (Have you ever heard of it? Could you describe it?) and their attitude toward assessment in the classroom generally. Even a handful of school visits in multiple districts can help you determine what tier many of your teachers are on in regard to formative assessment, and, in turn, how to help them advance. When communicating these findings, it is critical to first clarify the difference between time allocated for formative versus summative assessment, and to demonstrate the difference between formative assessment and student repetition (call and response). When stakeholders confound these, they may believe assessment-informed instruction is occurring more than it is.

Akyeampong et al. conducted a study to examine teachers' current instructional and assessment practices and to identify the impact of in-service training. Of concern to the authors was the prevailing practice in Sub-Saharan Africa. Teachers were often perceived as authoritarian and students were expected only to listen and memorize answers, with limited assessment for learning. In addition, teachers' understanding of assessments focused on students recalling the facts they memorized. Changing this prevailing practice needs to be gradual and focused on high-leverage but simple changes.[26]

Curriculum and Materials

Regarding other areas of FLN instruction, the teacher's guide can be thought of as a scaffolding tool to support teachers in applying assessment-informed instruction. AFL should be embedded throughout teaching materials. While teachers at tier 4 may be able to utilize the curriculum to develop, apply, and analyze their own assessment strategies, teachers at tiers 1 or 2 will benefit from simple, discrete strategies embedded in the guides. The amount of explicit direction incorporated into a teacher's guide should reflect the level of most, if not all, teachers in a given context. Even for higher tiers, teachers may benefit from hints and tips on assessment strategies. The following strategies for integrating AFL guidance into learning materials can help teachers apply assessment-informed instruction:

Identify natural points for assessment: Incorporate a classroom assessment model that provides suggestions for using AFL on a daily basis and that suggests a small number of focus areas and recommended timings for conducting more formal formative and summative assessments linked to curricular learning goals. Some teaching and learning materials—particularly teachers' guides—include specific suggestions for daily and weekly assessments, thus offering a simple way to support teachers in their implementation. For example, the last day of the week might be earmarked as an assessment and review day, when teachers undertake formative assessments of the week's content and review the skills that students are struggling with—or provide extension activities if students have mastered the target skills for the week. For teachers in tiers 3 and 4, it is especially important to support teachers in using "deep" questioning—open-ended questions that students do not already assume the teacher has an answer to.[27] Questions that ask students to elaborate on their initial answer, or relate different ideas, support a change in children's cognitive processes and develop higher-order skills. Example questions should be aligned to existing grade-level text and include questions that are conceptual and ask "why" and "how" rather than only "what" or "when." **Figure 4** presents an example of materials from South Africa that provide guidance for teachers on how to conduct AFL in their classroom.
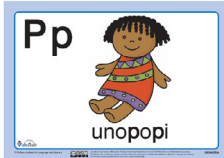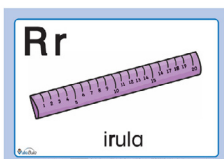
Consider the time implications of assessment: While much informal AFL does not take additional time, more formal assessment activities—and the recording of results—can take time. Teachers who are new to AFL may not be as familiar with informal AFL and may see assessment as a burden that is taking time away from curriculum coverage. Incorporating AFL guidance into materials can help teachers learn how to conduct informal assessment in a way that does not take much time, as well as ensure that sufficient time for appropriate formal assessment and recording of results can be done.

One of the simplest and most time-effective approaches to carrying out informal formative assessment is for the teacher to move around the classroom while students are working on a task and observe individual students' skills; Teachers can be reminded to do this in the teacher's guide.

FIGURE 4.
Classroom assessment tasks integrated into Funda Wande materials

Week 3: Day 5

Phonics *(15 min)* `ASSESSMENT`

- **Resources:** letter cards of sounds that have been taught; flash cards of **/p/** and **/r/** words
- **Preparation:** Make sure that each learner has letter cards for all the sounds that have been taught. Make sure there are two flash cards for each **/p/** and **/r/** word.
- **Lesson objective(s):** Identify and call letters quickly. Read the words with letters they have learned. Create short sentences.

ACTIVITIES

1. Letter cards and phonics
- Ask the learners to put their cards face up so that they can read them.
- Call out each sound and ask the learners to pick up the appropriate letter card.
- Observe and identify the learners who struggle to match the sounds and letters.

2. 2. Phonics words
- Give each learner a card, making sure that each word is also on another card.
- Tell the learners that you will say a word and the two learners who have that word card must stand and exchange seats.
- For each word:
  ◦ Say it = **itoti**.
  ◦ Break it up into its sounds = **i/t/o/t/i**.
  ◦ Say it as it again as a whole = **itoti**.
  ◦ Repeat if necessary until the learners get used to this exercise.
- Give all the learners a chance to read and exchange seats.

Create a simple recording system: Simple methods for recording assessment results can be integrated into teachers' guides and provided during in-service trainings. For instance, a grid with assessment tasks written along the side of a page and a list of children's names at the top can be used, as shown in the example provided in **Figure 5**. An example can be provided in the teacher's guide, along with strategies for its use.

Regardless of what checklist or tool is used, it is important to emphasize that the tool is meant to help teachers rather than to monitor or evaluate them. Any tools that are to be used should be introduced during training, supported through ongoing teacher support, and improved over time based on teacher feedback. Teachers should never be penalized for using a recording tool "incorrectly"—and, ideally, using such tools would be optional. If teachers feel that a tool is cumbersome or confusing, they will likely stop using

FIGURE 5. Illustrative example of an assessment checklist tool

PHONOLOGICAL AWARENESS ACTIVITY PERFORMED BY STUDENT	STUDENTS' NAMES			
	Janet	Brenda	Abdul	Ishaan
Claps the number of words in a simple sentence	✓	✓	✓	✓
Claps out compound words	✓	✓		✓
Recognizes words that rhyme	✓			
Orally produces words that rhyme		✓		✓
Identifies the syllables in a two- or three-syllable word				✓
Orally blends and segments two-syllable words		✓		✓
Orally blends and segments three-syllable words		✓		

Programs can develop (or digitize) tracker inserts that allow teachers to enter student names and to simply note students' demonstration of key competencies throughout the course of the unit.
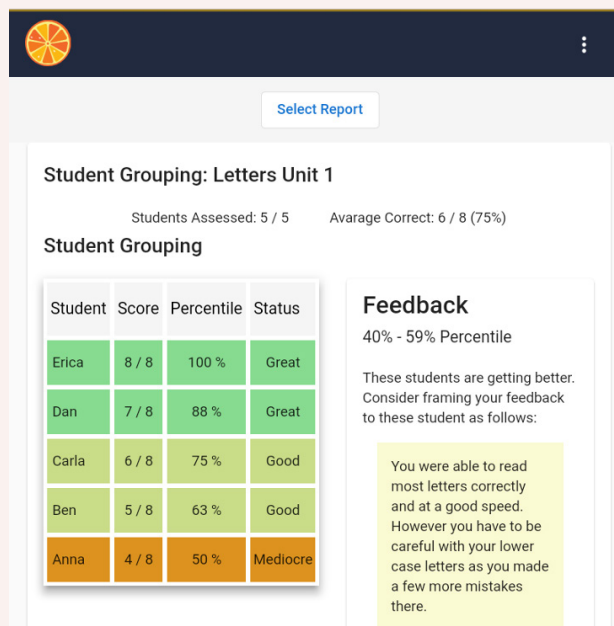
it. Where feasible, technology is a good fit solution for capturing formative assessment data, as new assessments can easily be added to an app-based tracker, such as the Tangerine:Teach app example shown in **Figure 6.** A clean interface will prevent teachers from getting confused or overwhelmed, and algorithms can remove much of the analysis work for teachers while also generating actionable feedback.

Include strategies for using results: The teacher's guide can also include tips and strategies for using the results of AFL. These can include brief review sessions, targeted homework, after-school groups, the grouping of children by assessment

FIGURE 6. Tangerine:Teach

Tangerine:Teach helps educators understand student progress and mastery of reading and mathematics through customized curriculum-based checks. Through rapid assessment, educators can pinpoint when and where to refocus instructional time and compare performance trends against benchmarks and targets. Working entirely offline, Tangerine:Teach provides simple-to-use reports that can help teachers see which of their students are doing well (colored in green, at right), and which may need remediation and more attention (those in red and orange).[28]

results, and the pairing of high and low performers. Focusing on simple things that teachers can do based on assessment results can help teachers feel motivated and empowered to undertake classroom assessment. **Figure 7** shows an example of a teacher's guide from Liberia that provides some suggestions for teachers on how to differentiate instruction based on assessment results.

FIGURE 7. Teacher's guide providing ideas on how to help students who need additional support
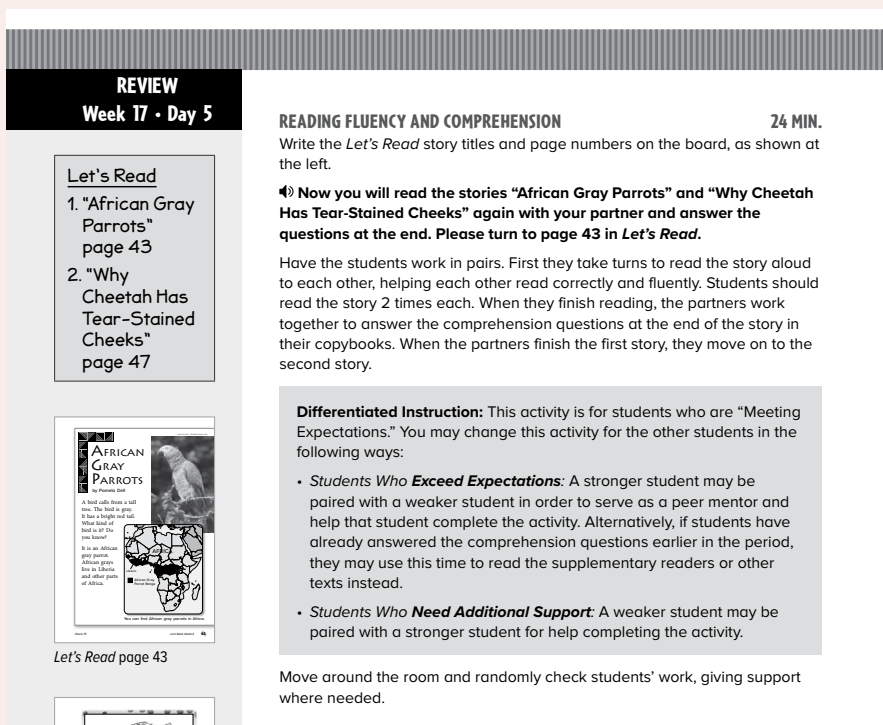
Teacher Professional Development

PRE-SERVICE TEACHER EDUCATION

Courses on teaching literacy and numeracy should integrate classroom assessment content and include the following elements:

- Contextualization or adaptation of particular AFL techniques for local classroom contexts
- Emphasis on "right-fit" strategies (when to use a formative assessment versus a summative assessment)
- Demonstration and practice with higher-order questioning
- Practical strategies for assessing large numbers of students
- Classroom management techniques to support facilitating and using assessments
- Establishment of a safe classroom climate and culture aimed at supporting students through formative assessments
- Strategies to capture, record, and track students' formative assessment performance informally and formally
- Analysis and interpretation of assessment results in relation to the unique strengths, experiences, and needs of students
- Lesson-planning instruction that incorporates formative assessment evidence
- Strategies for using results to provide feedback and to plan for remediation and enrichment
- Exploration of the various assessment types and the role of formative assessment in increasing summative assessment results

The USAID-funded Ethiopia Read TA project developed a pre-service module focused on primary classroom assessments, including grouping and how to differentiate instruction to meet the needs of diverse learners. The module included quick informal and formal assessment strategies (formative and summative) across the five components of reading (phonemic awareness, graphophonemic awareness, vocabulary, fluency, and comprehension), plus writing. Activities included analyzing case studies to practice identifying instructional needs. During focus groups with college instructors and students, respondents said that the assessment techniques were context appropriate and meaningful because they were integrated into the reading education classes.

IN-SERVICE TEACHER TRAINING

In-service training should be built on what teachers already know about assessment and already do in their classrooms. Teachers not only need to learn about assessments but also need to practice administering simple practical assessments and using the results to provide feedback to students and make decisions about instruction.

The first goal of in-service training—especially for teachers in tiers 1 and 2—should focus on inspiring planned behavior change by showing how specific AFL techniques support the attainment of existing teacher incentives; instilling a sense of control and efficacy in teachers through opportunities to practice and reflect on AFL techniques; and establishing practical AFL as a norm among teachers' peers, initially by showcasing those teachers who are early adaptors. Training should begin with a discussion of teachers' prior experiences using assessment results in lesson planning. The training agenda should also provide ample time to discuss and practice the skills, strategies, and activities used during formative and summative assessments.

TEACHER DEE'S FUN AT TRAINING

Teacher Dee thought that the two-day District training was actually fun! The trainers began the first session by asking teachers to show a "thumbs up" or "thumbs down" to indicate their favorite math topics. Teacher Dee never realized *everyone* dislikes introducing division. On Day 2, teacher Dee and her group modified "thumbs up/thumbs down" to be a "stand up/sit down" game - to both energize their colleagues and assess their understanding of the training topics being covered. Best of all, Teacher Dee realized that this fun game is something she can use in her own classroom.

The second goal of in-service training on assessment for learning should be to keep the skills and content as simple and focused as possible—a single dose at a time, rather than everything all at once. Embed selected assessment techniques from materials throughout trainings so that teachers can experience them firsthand. Many formative assessments can be fun when they are presented as a game. When formative assessments are clearly explained, easy to implement, and demonstrated in a playful way, teachers are more likely to use them in their classroom.

The third goal of in-service training should be to give teachers the opportunity to practice the simple assessment options

themselves in the training. This allows them to see that the suggestions we are making are not as time consuming as they might appear and are actually quite simple. This might include providing choices in their assessment approach: for example, a choice between two game-like options for tier 1 teachers and a menu of approaches for tier 2 and 3 teachers. Bridge the trainings to communities of practice, teacher meetings, and coach visits by asking teachers to further test the approaches in their classrooms and report back on how it went and what they would change about it.

ONGOING TEACHER SUPPORT

Teachers need ongoing support in implementing AFL activities. Coaches should discuss assessment results with teachers and provide them with guidance on how to remediate in response to the results when appropriate. Proficient coaches can model simple techniques aligned to a particular teacher's AFL tier alongside them in class; when teachers see an AFL technique used in their own class, its application will seem more in reach. Coaches who are less familiar with AFL themselves can be given video demonstrations by other teachers to share and discuss during visits. Coaching observation tools, especially those used within the education system, should include explicit, easy-to-observe indicators of formative assessment (for example, *"Were students asked to practice or give an answer on their own, without the teacher's prompting? Did the teacher respond to correct or incorrect answers given? Did the teacher pause and correct, or reteach, when students indicated they did not understand?"*).

TEACHER DEE'S MONTHLY COACH VISIT

Today, the sector coach met with Teacher Dee for their monthly school visit- it was so encouraging! From their last phone call, she knew her coach would be observing for one thing: questioning. Teacher Dee prepared by writing the questions from the teachers guide on the board before the lesson started, and she remembered to also give students time to explain how they got their answer. Her coach was thrilled! After celebrating her good work, the coach asked her to think of one open-ended, higher order question she could ask about next week's story. Her coach then shared with her a simple table for tracking students, and their responses and shared short videos of other teachers demonstrating examples of higher-order questioning.

Communities of practice (also referred to as professional learning communities, teacher learning circles, and other terminology depending on the country) can be avenues for teachers to share their experiences in using and adapting formative assessments and discuss how they will use this information in their planning for the next day, week, or unit. For example, teachers could select one formative assessment technique from a menu of options in one session, test this approach in their classrooms, and then share tips and experiences with one another afterwards. Communities of practice and teacher meetings are also a great opportunity for materials making, assessment marking/analysis, and lesson planning—this makes teachers feel that their time is not being wasted and allows for questions to be asked that help teachers identify and plug gaps in student learning.

Conclusion

FLN programs aim to ensure that children master the literacy and numeracy skills necessary to succeed in school. It is essential for teachers to be able to effectively monitor their students' progress and provide targeted support to help them achieve those skills. By recognizing the continuum of knowledge and skills that teachers already have in implementing assessment-informed instruction, you can target support and guidance to empower teachers to integrate these assessment techniques into their pedagogical practice. By being able to regularly reflect on whether students have learned the intended skills and content, and to take appropriate action if they haven't, teachers will be more effective in improving learning outcomes for all students in their classroom.

Guide authored by **Dr. Wendi Ralaingita, Rachel Jordan, Elizabeth Long, Dr. Benjamin Piper, and Dr. Marion Fesmire**

RESOURCES

Go-to resource when mapping the assessment context where your FLN program is working:
 https://riseprogramme.org/publications/aligning-levels-instruction-goals-and-needs-students-aligns-varied-approaches-common

10 easy-to-implement, evidence-based instructional practices that link closely to formative assessment and can be incorporated into FLN materials and training: https://files.eric.ed.gov/fulltext/EJ971753.pdf

Overview of technical considerations, when designing formative assessment:
https://www.globalreadingnetwork.net/sites/default/files/media/file/Assessment%20to%20Inform%20Instruction.pdf

A guide on continuous assessment geared toward teachers:
https://www.worldcat.org/title/continuous-assessment-a-practical-guide-for-teachers/oclc/247540134

Funda Wande's video resource collection, which includes videos on how to assess various skills:
https://fundawande.org/video-resources

Tangerine:Teach, a low-cost, offline, and easy-to-use formative assessment app:
 http://www.tangerinecentral.org/class

TECHNICAL EXPERTISE NEEDED

- Reading or mathematics instruction, with a special focus on formative assessment, to support development of the classroom assessment model.
- Teacher professional development (pre-service, teacher training, and ongoing teacher support) to support integration of classroom assessment into teacher professional development systems.
- Classroom management and school climate, to develop contextually responsive strategies for facilitating different types of assessment and for targeting and remediating for learners who are struggling.
- Basic data analysis and communications, to develop a format and template for teachers that makes capturing and using classroom-level data approachable.

REFERENCES

1   Henry Braun, Anil Kanjee, Eric Bettinger, and Michael Kremer, *Improving Education through Assessment, Innovation, and Evaluation* (Cambridge, MA: American Academy of Arts and Sciences, 2006).

2   Barbara Bruns, Deon Filmer, and Harry Patrinos, *Making Schools Work: New Evidence on Accountability Reforms* (Washington, DC: World Bank Group, 2011); Tahir Andrabi, Jishnu Das, and Asim Ijaz Khwaja, "Delivering Education: A Pragmatic Framework for Improving Education in Low-Income Countries," World Bank Policy Research Working Paper No. 7277 (2015).

3   EFA Global Monitoring Report Team, *Education for All 2000–2015:* Achievements and Challenges (Paris: UNESCO, 2015).

4   Paul Black and Dylan Wiliam, "Classroom Assessment and Pedagogy," *Assessment in Education: Principles, Policy & Practice* 25, no. 6 (2018): 551–575.

5   Sonali Nag, Shula Chiat, Carole Torgerson, and Margaret J. Snowling, *Literacy, Foundation Learning and Assessment in Developing Countries: Final Report* (London: Department for International Development, 2014).

6   Patience Sowa, Rachel Jordan, Wendi Ralaingita, and Benjamin Piper. *Higher Grounds: Practical Guidelines for Forging Learning Pathways in Upper Primary Education* (in press).

7   Adapted by Dylan Wiliam, "Formative Assessment: Getting the Focus Right," *Educational Assessment* 11 (2011): 283–289; Michael Scriven, "The Methodology of Evaluation," in Perspectives of Curriculum Evaluation, vol. 1, edited by Ralph W. Tyler, Robert M. Gagné, and Michael Scriven (Chicago, IL: Rand McNally, 1967); Benjamin S. Bloom (ed.), *Taxonomy of Educational Objectives: Book 1, Cognitive Domain* (Montreal: Education Nouvelle, 1969).

8   Sowa et al., *Higher Grounds*; Dylan William and Paul Black, "Meanings and consequences: a basis for distinguishing formative and summative functions of assessment," *British Educational Research Journal* 22 (1996).

9   Young-Suk Grace Kim and Marcia Davidson, *Assessment to Inform Instruction: Formative Assessment* (Washington, D.C.: USAID, 2019).

10 Lant Pritchett, Rukmini Banerji, and Charles Kenny, *Schooling Is Not Education! Using Assessment to Change the Politics of Non-Learning* (Washington, DC: Center for Global Development, 2013).

11 Wiliam and Black, "Meanings and Consequences," 1996.

12 Dean Fink and Louise Stoll, "Educational Change: Easier Said Than Done," in *International Handbook of Educational Change*, edited by Andy Hargreaves, Ann Lieberman, Michael Fullan, and David Hopkins (Dordrecht: Springer, 1998).

13 H. Richard Milner IV, "Confronting Inequity/ Assessment for Equity," *Educational Leadership* 75, no. 5 (2018): 88–89; Yusuf Sayed and Anil Kanjee, "Assessment in Sub-Saharan Africa: Challenges and Prospects," *Assessment in Education: Principles, Policy & Practice* 20, no. 4 (2013): 373–384.

14 Bernard Weiner, *Achievement Motivation and Attribution Theory* (Morristown, NJ: General Learning Press, 1974).

15 Connie M. Moss and Susan M. Brookhart, *Advancing Formative Assessment in Every Classroom: A Guide for Instructional Leaders*, 2nd ed. (Alexandria, VA: Association for Supervision and Curriculum Development, 2019).

16 Linda F. Winfield, "Performance-Based Assessments: Contributor or Detractor to Equity?," in *Equity and Excellence in Educational Testing and Assessment*, edited by Michael T. Nettles and Arie L. Nettles (Dordrecht: Springer, 1995); Peter Afflerbach, Barbara Kapinus, and Marshá Taylor DeLain, "Reading Assessment: Equity and Performance-Based Assessment: An Insider's View," *Reading Teacher* 48, no. 5 (1995): 440–442.

17   Yue-Yi Hwa, Michelle Kaffenberger, and Jason Silberstein, "Aligning Levels of Instruction with Goals and the Needs of Students (ALIGNS): Varied Approaches, Common Principles," *RISE Insight Series* 2020/022 (2020).

18 Ibid.

19 Wiliam and Black, "Meanings and Consequences," 1996.

20 Maaike Christine Heitink, Fabienne van der Kleij, Bernard P. Veldkamp, et al., "A Systematic Review of Prerequisites for Implementing Assessment for Learning in Classroom Practice," *Educational Research Review* 17 (2016): 50–62.

21 Lorna Earl and Steven Katz, *Rethinking Classroom Assessment with Purpose in Mind: Assessment for Learning, Assessment as Learning, Assessment of Learning* (Winnipeg, Manitoba: Western Northern Canadian Protocol, 2006).

22 Teaching at the Right Level, "Assessment," https://www.teachingattherightlevel.org/the-tarl-approach/assessment.

23 E. M. Botha, "Turning the Tide: Creating Professional Learning Communities (PLC) to Improve Teaching Practice and Learning in South African Public Schools," *Africa Education Review* 9, no. 2 (2012): 395–411.

24 Julius Atuhurra and Michelle Kaffenberger, "System (In)Coherence: Quantifying the Alignment of Primary Education Curriculum Standards, Examinations, and Instruction in Two East African Countries," RISE Working Paper Series 20/057 (2020). Atuhurra and Kaffenberger, "System (In)Coherence," 2020.

25 World Bank Group, *Teach Observer Manual* (Washington, DC: World Bank Group, 2019).

26 Kwame Akyeampong, John Pryor, and Joseph Ghartey Ampiah, "A Vision of Successful Schooling: Ghanaian Teachers' Understandings of Learning, Teaching, and Assessment," Comparative Education 42, no. 2 (2006): 155–176.

27 John Hattie, *Visible Learning: A Synthesis of Over 800 Meta-Analyses relating to Achievement* (New York, NY: Routledge, 2009), p. 28.

28 Tangerine, "Tangerine:Teach," http://www.tangerinecentral.org/class.

29 Icek Ajzen and Martin Fishbein, *Understanding Attitudes and Predicting Social Behavior* (Englewood Cliffs, NJ: Prentice-Hall, 1980).