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Teacher-led
Learning Circles
for Formative Assessment

**Teacher-Led Learning Circles
for Formative Assessment:
FULL REPORT OF
INTERNATIONAL
RESEARCH FINDINGS**



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Teacher-led
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FULL REPORT OF INTERNATIONAL RESEARCH FINDINGS

**Teacher-Led Learning Circles on Formative Assessment (T3LFA) Project:
Developing Teacher Leadership and Teaching Practice for the Use of
Formative Assessment to Improve Students' Learning**

Carol Campbell, Christopher DeLuca,
Danielle LaPointe-McEwan,
Maeva Ceau, and Nathan Rickey



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Education International (EI)

Education International represents organisations of teachers and other education employees across the globe. It is the world's largest federation of unions and associations, representing thirty million education employees in about four hundred organisations in one hundred and seventy countries and territories, across the globe. Education International unites teachers and education employees.

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Chapter 1: Introduction

1.1 Introduction

The Teacher-Led Learning Circles on Formative Assessment (T3LFA) project facilitated professional learning and development to advance teachers' leadership of educational improvement with a focus on increasing confidence in, understanding, and use of student-focused effective formative assessment practices. This dual focus on both teachers' development and students' learning is vital and timely.

Two pressing challenges are facing education globally. First, a global crisis in the teaching profession manifesting in fewer people entering the teaching profession, increasing attrition, and concerns about working conditions and wellbeing (United Nations, 2024). Second, ensuring students' learning and progression and tackling inequities for students' opportunities, experiences, and outcomes, especially following the ongoing impacts of educational disruptions during the COVID-19 pandemic (OECD, 2023). While a range of actions are required to address these challenges, effective professional learning and development for teachers and effective formative assessment with timely, useful feedback for students are two of the highest impact educational strategies. The T3LFA project directly addresses, and supports, these twin strategies to support large-scale educational change across seven countries – Brazil, Côte d'Ivoire, Ghana, Malaysia, South Korea, Switzerland, and Uruguay – spanning four continents.

Following three years of experience and evidence from implementation of the T3LFA project (2020-2023), this final international research report updates our previous international research [Literature Review](#) (Campbell et al., 2022) and international [Research Framework](#) (LaPointe-McEwan, 2022) and presents original findings from a substantial multiple methods study gathering data from project participants, including teachers, local facilitators, local union representatives, and national researchers.

1.2 Overview of Teacher-Led Learning Circles on Formative Assessment Project

The T3LFA project was led by Education International with funding from the Jacobs Foundation. The overarching goal of the project was to identify, codify, and disseminate effective formative assessment practices to support students' learning. The T3LFA project was implemented over three years (2020-2023) in seven countries: Brazil, Côte d'Ivoire, Ghana, Malaysia, South Korea, Switzerland, and Uruguay. The T3LFA project involved participation in the Teacher-Led Learning Circles process to support teachers' professional learning and development, teacher leadership, and an inquiry process for teachers to apply, reflect on, and adapt formative assessment practices in their classrooms. Project participants included teachers, local facilitators, local union representatives, national researchers, international facilitators, and international researchers.

Year 1 of the T3LFA project focused on developing Learning Circle resources, planning for national and international data collection, writing national country profiles, and training local facilitators and local union representatives in Learning Circle processes. Year 2 of the T3LFA project focused on the implementation of Learning Circles within the participating countries

and data collection from project participants. Year 3 of the project focused on analyzing and codifying project data collected during Years 1 and 2 and reporting on key findings, both nationally and internationally. (See Chapters 3 and 4 for complete project and research details.)

1.2.1 Learning Circle Professional Learning and Development Programme

The Learning Circle professional learning and development programme was designed to span one academic year (10 months; Year 2 of the project) and include seven 2-hour workshop sessions with all teachers in the Learning Circle, three one-on-one tutorials between the facilitator and each teacher in the Learning Circle, and two network events with teachers across multiple schools. Within each Learning Circle, local facilitators and local union representatives helped teachers (a) create an Action Plan to guide their development project processes and formative assessment practices; (b) develop, identify, apply, adapt, and review formative assessment practices; (c) complete ongoing reflections in a Record of Participation; (d) construct a Portfolio of evidence related to teacher leadership processes and formative assessment practices; and (e) create a Vignette to share their learning and experience within and beyond the project. Overall, the T3LFA project supported 21 Learning Circles with a total of 172 teachers (average of 8/Circle), 43 local facilitators (average of 2/Circle), and 17 local union representatives (average of 1/Circle).

1.2.2 International Research Questions

The international [Research Framework](#) (LaPointe-McEwan et al., 2022) guided the collection, analyses, and reporting of evidence on effective formative assessment practices, including consideration of teachers' practices, students' learning, and the professional learning and development processes that supported teacher leadership for improvements in use of formative assessment practices. The framework employed a multiple methods research design to test, iteratively develop, and codify effective formative assessment practices. Project data collection and analysis occurred at three levels: classroom, national, and international.

The international [Research Framework](#) is rooted in two broad research questions and associated guiding questions.

1. In the Teacher-Led Learning Circles, what promising teacher-led formative assessment practices were identified?

- a) What teacher-led formative assessment practices were used, and how were they implemented?
- b) How did technology support the implementation of formative assessment practices?
- c) Which teacher-led formative assessment practices provided effective feedback to students?
- d) What benefits from using formative assessment were identified for teachers' practices?
- e) What benefits from using formative assessment were identified for students' learning?

2. In the Teacher-Led Learning Circles, what professional learning and teacher leadership processes supported teachers' formative assessment practices?

- a) How were teachers supported in understanding, developing, and using formative assessment practices?
- b) What helped or hindered effective use of formative assessment practices?

The theory of action underpinning the T3LFA project is that through engaging in effective professional learning and development to advance teachers' leadership skills and their formative assessment knowledge and practices, teacher-led formative assessment practices will be developed and tried out, and effective practices will be further implemented in classrooms to benefit students and their learning.

1.3 Summary and Report Structure

This chapter has provided an introductory overview of the T3LFA project and linked international research study. Chapter 2 situates the T3LFA project within a literature review of relevant research concerning the importance of the teaching profession, teacher and teaching quality, effective professional learning and development, teacher leadership, and the history, definition, and conceptualization of formative assessment and evidence-informed formative assessment strategies and practices for implementation in classrooms. Chapter 3 provides further details on the Teacher-Led Learning Circles professional learning and development design and implementation. Chapter 4 builds on the international [Research Framework](#) (LaPointe-McEwan et al., 2022) to outline the research design and research questions, plus details of the data sources and data collected. After situating the T3LFA project in the wider research literature and detailing the T3LFA project and research design, we turn to presenting evidence and findings from the international and national research. Chapter 5 provides a summary country profile for each of the seven participating countries, including an overview of the country's demographics, education system, education policies, assessment practices, professional learning approaches, and teacher participants' demographics. Chapter 6 provides the international research study findings concerning promising teacher-led formative assessment practices and professional learning and development to support teachers' formative assessment practices. Finally, Chapter 7 provides overall conclusions and lessons learned from the T3LFA project with a focus on effective professional learning and development experiences and teachers' confidence in and use of formative assessment practices.

Chapter 2: Literature Review

Before moving into the specific details of the T3LFA project from Chapter 3 onwards, this chapter summarizes and updates our initial [Literature Review](#) (Campbell et al., 2022) for this project. We situate the Teacher-Led Learning Circles approach within a review of relevant research literature concerning the importance of the teaching profession, teacher and teaching quality, effective professional learning and development, teacher leadership, and the history, definition, and conceptualization of formative assessment and evidence-informed formative assessment strategies and practices for implementation in classrooms.

2.1 Developing Teachers and Teaching: The Importance of Effective Professional Development and Learning for Teachers' Leadership of Educational Improvements

This section reviews research evidence concerning the importance of the teaching profession, teacher quality, teaching quality, teacher leadership, and effective professional development and learning.

2.1.1 The Importance of the Teaching Profession, Teacher Quality, and Teaching Quality

It is well-established that teachers are central to education systems and that teaching quality is vital for educational improvements to support students' learning. For example, the OECD (2021) combined and analyzed data from the 2018 Teaching and Learning International Survey (TALIS) and the Programme for International Student Assessment (PISA), involving data "from more than 30 000 students and more than 15 000 teachers from more than 1 000 schools on four different continents" (OECD, 2021, p.3). In his forward to the report of this analysis, the OECD's Director for the Directorate of Education and Skills, Andreas Schleicher, concluded:

So what have we learned? If there was only one conclusion to take away from this report, it is that what teachers do in and outside the classroom matters the most – and the most directly – for the cognitive and social-emotional outcomes of the school's students. Classroom practices that create opportunities to learn, teachers' use of working time, as well as the well-being and job satisfaction of the teachers are among the most influential school factors (OECD, 2021, p.4).

Based on analyses of education systems that are higher performing in terms of student achievement and more equitable in their student outcomes, Darling-Hammond et al. (2017) identified the importance of education systems valuing and developing both teacher quality (the professionals' knowledge and skills) and teaching quality (their practices, including instruction, curriculum, and assessment). The development of teachers and teaching quality is central to Education International and UNESCO's Global Framework of Professional Teaching Standards (2019) which involves three domains: Teaching Knowledge and Understanding, Teaching Practice, and Teaching Relations.

However, teachers' work and the quality of their professional practices are not simply about an individual's development. Teachers' professional lives and work are influenced by a range of

personal and professional factors, including the policies, culture, and working conditions of the education systems, schools, and classrooms they are located in (Cordingley et al., 2019; OECD, 2021). Worryingly, there is pressing evidence and concerns about teachers' deteriorating working conditions, with the United Nation's (2024) identifying a global crisis affecting the teaching profession.

Based on his analyses for Education International's The Global Report on the Status of Teachers 2021, Thompson (2021, p. 114) proposed it "is time to recalculate" the adage about education quality to become: "the quality of an education system cannot exceed the extent to which it supports, sustains, and invests in the status of its teachers." Recent international reviews, activities, and reports support the need for global advocacy and action to provide systemic supports for the education profession. In 2024, both the United Nation's Secretary General's High-Level Panel on the Teaching Profession and the UNESCO Global Report on Teachers set out a concerning combination of declining attractiveness of teaching to recruit new people into the career, increasing attrition, shifts to use of unqualified or short-term contract teachers, lack of adequate professional development, poor working conditions, and deteriorating wellbeing, all resulting in fewer people entering and/or staying in the profession. Within a wide range of recommendations, system support for high-quality accessible professional development and the cultivation and valuing of teacher leadership are integral to achieving Sustainable Development Goal 4 for all learners to access inclusive, equitable, and quality education and for realizing the United Nation's imperatives for humanity, dignity, equity, diversity and inclusion, quality, innovation, and leadership for the education profession.

2.1.2 Effective Continuing Professional Learning and Development

The necessity of continuing professional learning and development is recognized in the United Nation's Sustainable Development Goals (United Nations, 2015), and specifically in the Framework for Action for Sustainable Development Goal 4: Towards inclusive and equitable quality education and lifelong learning for all (UNESCO, 2016), and in the recommendations from the United Nation's (2024) High-Level Panel on the Teaching Profession. Continuing professional development (CPD) involves in-service teachers' development and learning over their career, as contrasted with initial teacher education for people being trained to become teachers (OECD, 2019). In TALIS, CPD is defined as "activities that aim to develop an individual's skills, knowledge, expertise and other characteristics as a teacher" (OECD, 2014, p.64). Cordingley et al. (2019, p. 20) distinguished between:

Continuous Professional Development (CPD): The sustained support offered to teachers to develop their skills, knowledge and experience, beyond their initial teacher training.

Continuous Professional Learning and Development (CPLD): The processes and activities teachers undertake as they participate in and respond to CPD.

The T3LFA project includes both formal professional development and continuing professional learning. For example, facilitated workshops are formal professional development, whereas the resulting reflection, inquiry, collaboration, and action occurring in teachers' day-to-day work and classroom practices are professional learning.

Meta-analyses of the outcomes from professional development indicate that there can be a positive effect on teachers' self-efficacy and instructional practices (Garrett et al., 2021; OECD, 2019), and on students' learning and academic achievement (Sims et al., 2021). It is important to recognize that the effect of professional development is mediated through a process of changes in, first, teachers' self-efficacy, professional knowledge, and practices and then, second, in students' learning and achievement (Garrett et al., 2021).

However, not all professional learning and development is effective or equally so. We draw on several existing reviews, syntheses, and meta-analyses (e.g., Campbell et al., 2017; Cordingley et al., 2015; Dagen & Bean, 2014; Darling-Hammond et al., 2009; Desimone, 2009; Garet et al., 2001; Garrett et al., 2021; Jensen et al., 2016; Learning Forward, 2022; OECD, 2019, 2021; Sims et al., 2021; Timperley, 2008; Timperley et al., 2007), plus other relevant research studies to identify six key features of effective professional learning and development.

1. Effective Professional Learning and Development is Linked to Teachers' Identified Priorities for their Work to Support Students' Needs, Improve Student Learning, and Enhance Related Student Outcomes

Typically, effective professional learning and development starts with a teacher identifying a particular priority professional need, which is usually linked to supporting their students' needs (Learning Forward, 2022; OECD, 2021). This process of identifying a professional development priority is sometimes referred to as identifying a 'problem of practice' directly connected to teachers' daily work (Cordingley et al., 2015; Croft et al., 2010; Timperley, 2008). Deciding the specific priority requires careful consideration of, and balance between, system and school priorities for students' learning and outcomes and teachers' identified needs for their students and for their own professional learning priorities (Campbell et al., 2017). This balance can be challenging to achieve. Sims et al.'s (2021) analyses of implementation fidelity and effectiveness suggest that professional development priorities and linked changes are more likely to be achieved and sustained if there is a clear linkage to school priorities and classroom contexts. However, teacher agency, choice, and voice are also important for effective continuing professional learning and development (Taylor et al., 2011; Thompson, 2021).

2. Effective Professional Learning and Development is Differentiated for Teachers' Professional Values, Experiences, and Work in their School and Classroom Contexts

As we concluded in the State of Educators' Professional Learning in Canada study: "there is no one size fits all approach to professional learning and nor should there be. The specific professional development needs identified will vary over a teacher's career, teaching responsibilities, changing student populations, and classroom and school contexts" (Campbell et al., 2017, p. 41). The OECD's (2019, p. 157) TALIS report concludes that: "The literature indicates that training is potentially more effective when teachers are able to participate in a wide range of formats (Jensen et al., 2016; Hoban & Erickson, 2004; Scheerens, 2010)." Furthermore, professional learning and development that connects with teachers' personal and professional values, and with their prior experiences and professional knowledge tends to be more effective (Desimone, 2009; OECD, 2019). Therefore, teachers should be supported to engage in a range of professional learning and development activities differentiated to their professional needs over their career.

3. Effective Professional Learning and Development Provides Useful, Research- and Practice-informed, Quality Content Relevant to Identified Professional Development Needs

Once teachers have identified a priority need, it is important that their professional development opportunities include relevant, useful, research- and practice-informed quality content. Developing strong instructional, curricular, and assessment knowledge is more effective than generic skills development (Dagen & Bean, 2014; Desimone, 2009; Desimone & Stuckey, 2014; Garet et al., 2001). Shulman (1986, pp. 9-10) identified that developing teachers' expertise required professional learning and development to support a combination of subject matter content knowledge (i.e., knowing the principles and detailed information about a subject's content), pedagogical content knowledge (i.e., knowing how to appropriately and effectively teach and support students' learning of the subject), and curricular knowledge (i.e., understanding the relevant subject curricula and linked instructional materials). Developing teachers' knowledge and practices for use of formative assessment and feedback is particularly important (OECD, 2021). Furthermore, it is important to develop teachers' expertise in "developing content knowledge to underpin such strategies and exploring how they work for different groups of pupils" (Cordingley et al., 2015, p. 5); this process includes consideration of how teachers can support the diversity of students in their classrooms (OECD, 2019).

4. Effective Professional Learning and Development Supports Evidence-Informed Active Professional Learning, Inquiry Processes, Critical Reflection, and Collaborative Professional Learning to Value and Develop Teachers' Leadership and Professional Agency

Effective professional development involves active and collaborative professional learning processes. As the OECD (2019, p. 162) explained: "Active learning refers to pedagogical approaches that put learners at the centre of instruction (OECD, 2014)." Based on analyses of TALIS data, the OECD (2019, p. 162) found:

On average across the OECD, among teachers who report that their training was impactful, the characteristics of this dimension were that the training:

- 1) "provided opportunities to practice/apply new ideas and knowledge in [their] own classroom" (86%);
- 2) "provided opportunities for active learning" (78%);
- 3) "provided opportunities for collaborative learning" (74%); and
- 4) "focused on innovation in [their] teaching" (65%).

Active professional learning can involve an inquiry process cycle using evidence, professional judgement, and reflective questions to identify students' learning needs and linked professional learning needs, followed by a process of inquiry and action to further improvements in practices and outcomes (Timperley et al., 2007; Timperley, 2008). In such processes, teachers' use of formative assessment data is important for identifying students' learning needs, and for observing and monitoring student learning and progress when implementing changes in instructional and assessment practices.

Collaborative professional learning opportunities can be particularly powerful. When collaborative professional learning is done effectively, benefits for teachers' self-efficacy, professional knowledge, skills, and practices, and for students' learning and achievement have been identified (Bolam et al., 2005; DuFour & Eaker, 1998; Cordingley et al., 2015; Lieberman

& Wood, 2003; McLaughlin & Talbert, 2001; 2006; Stoll et al., 2006). Careful attention to the agreed shared purpose and intended outcomes of collaboration, and to developing authentic and genuinely collaborative professional relationships and processes, are required. Therefore, “it is not simply collaboration that is required; it is forms of collaboration that enable co-learning, co-development, and joint work for educators” (Campbell et al., 2017, p. 42), including sharing knowledge and practices and providing feedback to improve each other’s practices (OECD, 2019). Deeper forms of professional collaboration include “team teaching, providing feedback based on classroom observations, engaging in joint activities across different classes and participating in collaborative professional learning” (OECD, 2021, p. 49).

5. Effective Professional Learning and Development Requires Adequate Provision of Funding, Time, and Expert Resources

The provision of, and participation in, professional development requires funding to cover resources involved and costs incurred. Jay et al. (2017, p. 31) described allocation of time for professional learning and development as “the most crucial condition” for success. There are several aspects to the provision of adequate time. First, teachers need release time to participate in professional development activities outside of their own classroom (and/or school). Second, teachers need time integrated within their workday to engage in reflection, inquiry, and continuing professional learning to apply, evaluate, and adapt changes in their teaching practices and to observe impacts for students’ learning. Third, teachers need time to collaborate with peers within their schools and in professional networks beyond their school. Fourth, effective professional development involves professional learning supported and sustained over a longer period to enable cumulative improvements in teachers’ knowledge and practices (Darling-Hammond et al., 2009).

Resources to provide quality content and facilitate learning are also required. Access to expertise through the provision of coaches, external experts/facilitators, and teachers with specialist knowledge, plus opportunities to attend professional development events and training, are important (Cordingley et al., 2015; Sims et al., 2021; Timperley, 2008). Teaching resources and materials to support the integration of teachers’ changing practices are also important. In their evaluation of effective implementation of changes from professional development, Sims et al. (2021, p. 51) noted:

Resources took three crucial forms: guidance documents, teaching resources (such as lesson plans or resources for students), and technological resources (such as iPads or computer programmes). The unifying theme across these categories was clear: teachers welcomed resources which met their needs simply and effectively but abandoned resources which did not do so. The precise nature of the resource depended on the intervention.

Importantly, professional learning also involves teachers’ leading the development and sharing of resources to provide expert, practical content for other teachers (Campbell et al., 2017; Frost et al., 2019).

6. Effective Professional Learning and Development Involves System, School, and Teacher Leadership Prioritizing and Supporting the Importance of Professional Learning and Development

The provision of effective professional development involves the active leadership, engagement, and support of government leaders and the education profession, including teacher unions and educators. In particular, the involvement and support of school leaders is vital. Robinson, Hohepa, and Lloyd's (2009) best evidence synthesis to examine School Leadership and Student Outcomes: Identifying What Works and Why identified the importance of "pedagogical leadership," with the most impactful practice by school leaders being "promoting and participating in teacher learning and development" (pp. 38-39). School leaders can: (co) establish a shared vision, priorities, and plan for professional development; ensure provision of relevant opportunities and resources; establish collaborative professional learning as an essential part of the school culture; and model the importance of professional learning by engaging with staff and in their own professional development (Campbell & Osmond-Johnson, 2018; Cordingley et al., 2019; Hord, 1997; Sims et al., 2021).

School leaders' advocacy for, and support of, teacher leadership is also necessary and important (Crowther et al., 2002). School leaders can enable teacher leadership by cultivating a school culture that values and provides opportunities for teachers to exercise their leadership influence; attending to practical constraints such as time and resources to enable teachers' leadership development; fostering professional collaboration; and providing opportunities for teachers to lead and engage in decision-making and educational changes (Nguyen et al., 2019). This means that school leaders also need to intentionally learn how to effectively support teacher leadership (York-Barr & Duke, 2004).

Teachers' leadership of their own professional development and their leadership of colleagues' professional learning is important. In their review of teacher leadership research, York-Barr and Duke (2004, p. 282) identified:

In terms of content emphases for teacher leadership development, three primary themes emerged: continuing to learn about and demonstrate advanced curricular, instructional, and assessment practices; understanding the school culture and how to initiate and support change in schools; and developing the knowledge and skills necessary to support the development of colleagues in individual, small group, and large group interactions.

Teachers need professional development content, scaffolding, and support to grow their leadership and to inform their teaching.

Intentionally developing teachers' leadership skills through opportunities and experiences to lead in practice is vital. This does not mean that teachers must take on formal leadership responsibilities; rather teachers—within and beyond their classrooms— should have opportunities to lead learning, (co)development of knowledge, de-privatization of practices, and generating networks to share ideas and practical resources to bring about change (Campbell, 2018, p. 79). In their review of teacher leadership research, Wenner and Campbell (2017, p. 152) explained:

One of the primary duties of teacher leaders tends to be supporting the professional learning of colleagues. As such, it was encouraging to find that many teachers benefited from PD presented by teacher leaders. Not only did teacher leaders provide more opportunities for PD (Carpenter & Sherretz, 2012) but also better quality and more relevant PD (Hickey & Harris, 2005; Vernon-Dotson, 2008; Westfall-Rudd, 2011). Additionally, teacher leaders were seen as resources capable of providing assistance and support with pedagogy and content in a non-PD format (Gordin, 2010; Margolis & Deuel, 2009).

Intentionally developing teachers' leadership through professional development and supporting teachers to lead their own and peers' professional learning are important.

2.1.3 Teacher Leadership

There has been growing interest in the concept and practice of teacher leadership, especially from the 1990s onwards. However, there is a wide array of definitions of teacher leadership. In a seminal review of the research literature, York-Barr and Duke (2004, pp. 287-288) offered the following definition:

We suggest that teacher leadership is the process by which teachers, individually or collectively, influence their colleagues, principals, and other members of school communities to improve teaching and learning practices with the aim of increased student learning and achievement.

A more recent review of teacher leadership research drew on a previous definition from Katzenmeyer and Moller:

Teacher leaders *"lead within and beyond the classroom, identify with and contribute to a community of teacher learners and leaders, and influence others toward improved educational practice; and accept responsibility for achieving the outcomes of that leadership"* (Katzenmeyer & Moller, 2001, p. 6). From this definition, it is posited that teacher leadership can happen within and beyond the classroom, and that teaching and leadership are integrated. (Nguyen et al. 2019, p. 63)

Based on their review of 150 empirical articles published between January 2003 and December 2017, Nguyen et al. (2019, p. 71) identified the following "four common hallmarks of teacher leadership":

(a) Teacher leadership is a process of influence; (b) teacher leadership is exercised on the basis of reciprocal collaboration and trust; (c) teacher leadership operates within and beyond the classroom; and (d) teacher leadership aims to improve instructional quality, school effectiveness, and student learning.

While there are teachers who hold formal roles as specific leaders, such as Heads of Department and curriculum specialists, teacher leadership is about supporting all teachers to develop their leadership capacities, practices, influence, and impact. Cordingley et al. (2019, p. 21) provided a helpful clarification of the distinction between formal leaders linked to specific promoted positional roles, and broader teacher leadership of all in the profession:

Positional leadership based on authority conferred through an official position e.g., as a head of subject/department/phase, deputy or assistant head or head teacher.

Non-positional leadership occurring when teachers make decisions and enable things to happen across groups of stakeholders based on their expertise, experience and personal professional goals and values.

Frost (2011) developed the term “non-positional teacher leadership” to refer to “a set of assumptions, beliefs and values, central to which is the conviction that any teacher or other educational practitioner can be enabled to exercise leadership” (Frost, 2019, p. 4). This concept and approach to development of teacher leadership is integral to the T3LFA project.

Central to effective teacher leadership is the intentional and thoughtful exercise of influence. Nguyen et al.’s (2019, p. 73) review identified:

Sources of influence can be grouped into two broad categories: human capital and social capital. The former includes a teacher leader’s expertise and experience (e.g., Allen, 2016; Avidov- Ungar & Tamar, 2017; Hatch et al., 2005), whereas the latter places an emphasis on the teacher leader’s professional relationships with peers including social networks (e.g., Firestone & Martinez, 2007; Fairman & Mackenzie, 2015).

We add a third category of influence and capital; the importance of teachers’ decisional capital—a term developed by Hargreaves and Fullan (2012) to refer to professional experience, judgement, expertise, and agency in taking decisions and actions.

Teacher leadership can influence educational change. Wenner and Campbell (2017, p. 146) identified the following themes, including:

- *Teacher leadership goes beyond the classroom walls.*
- *Teacher leaders should support professional learning in their schools.*
- *Teacher leaders should be involved in policy and/or decision making at some level.*
- *The ultimate goal of teacher leadership is improving student learning and success.*
- *[Teacher leadership includes] working toward improvement and change for the whole school organization.*

Several benefits of teacher leadership for educational change and improvement have been identified (Campbell et al., 2018; Harris, 2005; Nguyen et al., 2019; Wenner & Campbell, 2017; York-Barr & Duke, 2004). The most significant benefits of exercising and experiencing teacher leadership are for the teachers directly involved, including:

- Increased leadership knowledge and skills.
- Positive changes in instructional knowledge and practices.
- Increased commitment, motivation, and job satisfaction.
- Increased self-efficacy.
- Enhanced professionalism, and leadership identity and growth.

When teacher leadership involves actively leading/co-leading educational changes in collaboration with other educators, there can be benefits for those educators' professional learning, including improving their knowledge and practices and contributing to improved school cultures and enhanced self-efficacy and collective efficacy.

Teacher leadership can model democratic leadership for students, and students can benefit from teachers' enthusiasm, motivation, and commitment to innovation and improvement in teaching and learning (York-Barr & Duke, 2004). More broadly, teacher leadership can influence school principals' work and teachers' work with indirect effects for student outcomes. Referencing a study by Supovitz et al. (2010), Nguyen et al. (2019, p. 81) summarized:

Two paths through which teachers influence upon peers affects students' learning outcomes: a) teacher-peer influence has a significant effect on student learning through the mediating variable of teacher classroom instruction; and b) teacher peer influence functions as a mediator of principal leadership and teacher instruction, that in turn, positively affects student learning outcomes.

While teacher leadership is about teachers' leading the way forward for educational change and improvement, it also requires governments, teacher unions, and school leaders who support and enable teacher leadership. Challenges to teacher leadership, such as conflict from colleagues, unsupportive school cultures, and practical constraints, including time for teacher leadership, need to be addressed.

2.2 Formative Assessment

Assessment is one of the most profound drivers of student learning in classrooms, defining and prioritizing learning goals for students, directing how students approach learning, and even shaping their identities (Nieminen, 2024). As drawn from and reported in our previous [Literature Review](#) for this project, formative assessment involves the purposeful integration of feedback throughout teaching to support and accelerate student learning through a variety of daily assessment activities that:

- Clarify learning goals and success criteria;
- Engage students in meaningful questioning and classroom discussions;
- Involve peer- and self-assessment activities; and
- Monitor progress towards learning goals through diverse forms of feedback about next steps for development.

Formative assessment works in conjunction with summative assessment practices (i.e., assessments that seek to evaluate and report on student learning) as part of a programme of assessment that monitors, supports, and reports on student learning.

2.2.1 History and Implementation of Formative Assessment

The roots of formative assessment are in the field of program evaluation. Formative assessment was initially recognized by Scriven (1967) as an assessment process to provide information for program improvement. When applied to educational contexts, formative assessment was first associated with teachers' use of assessment information to adjust and tailor their teaching practice to become more effective for student learning. The emphasis was on teachers as the active users of assessment information.

In 1998, Black and Wiliam wrote a seminal paper that reviewed over 250 feedback studies, highlighting evidence of the crucial role feedback plays in learning. Based on this review, the Assessment Reform Group in the UK developed a set of foundational principles under the banner, assessment for learning (AfL). This purposeful change from 'formative assessment' to the term 'assessment for learning' was intended to emphasize the distinction between formative and summative assessment activities as well as the active role students should play in assessment processes. The Assessment Reform Group defined AfL as "the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to get there" (2002, n. p.).

AfL has since become widely adopted in educational policies and practices across countries in every continent (see Birenbaum et al., 2015; Laveault & Allal, 2016). AfL has been adapted through its implementation across contexts, leading to a variety of understandings of how to implement AfL. As initially noted by Marshall and Drummond (2006), AfL implementation varies from the letter (i.e., procedural and piecemeal implementation) to the spirit (i.e., a pervasive pedagogical change where AfL becomes a driver of teaching and learning). Given the range of implementation, the effects on learning vary widely (Laveault & Allal, 2016). As Baird et al. (2014) concluded in their state of the field review, the empirical research suggests a "modest, but educationally significant, impact on teaching and learning" (p. 6). Meta-analyses of formative assessment practices have continued to highlight formative assessment as a powerful pedagogy for supporting academic achievement and self-regulated learning (Lee et al., 2020; Panadero et al., 2017; Yan et al., 2022).

Importantly, the potential challenges to widespread adoption have been observed through repeated efforts of AfL implementation across contexts. Challenges include enacting effective system-wide professional development and supporting teachers' AfL knowledge, beliefs, and practices (DeLuca et al., 2015; DeLuca et al., 2019; Heitink et al., 2016); shifting assessment cultures from highly summative to formative (Baird et al., 2014; Heitink et al., 2016; Shepard, 2000); and moving beyond procedural implementation of AfL to embrace the spirit of AfL in schools (Brooks et al., 2021; DeLuca et al., 2019; James & McCormick, 2009; Marshall & Drummond, 2006). Overcoming these challenges requires sustained commitments to ongoing professional learning that often involve collaborative professional learning and development models, leveraging assessment experts and educational coaches, and an ongoing emphasis on reflective practice (DeLuca et al., 2015; DeLuca et al., 2019).

2.2.2 Definitions and Essential Features of Contemporary Formative Assessment

AfL has continued to evolve as a concept since its initial definition, as presented by the Assessment Reform Group in 2002. In 2009, Klenowski highlighted the essential integrated

nature of AfL with teachers' and students' everyday practices: "Assessment for Learning is part of everyday practice by students, teachers and peers that seeks, reflects upon and responds to information from dialogue, demonstration and observation in ways that enhance ongoing learning." (Klenowski, 2009, p. 264). In their text on the global implementation of AfL, Laveault and Allal (2016) defined AfL as: "the collection and interpretation of assessment information whose intentional use enables teachers and students, acting individually or interactively to reach decisions that have a positive impact on instruction and learning" (p. 7).

Underpinning these definitions are essential features of contemporary formative assessment. Embedded within teaching and learning activities, AfL essentially involves the four interrelated strategies which are based on the gathering of evidence related to student learning through various daily assessment activities (Lysgaht et al., 2017, 2019):

1. Clarifying, sharing, or co-constructing learning intentions and success criteria with students;
2. Leveraging questioning and classroom discussion to deepen student learning and provide in-the-moment feedback for next steps;
3. Engaging in self- and peer-assessment practices to promote a community of learning, student ownership in learning, and learner agency;
4. Providing ongoing feedback to close the gap between where the student is and their learning goals.

When used in combination, the strategies enable learners to take ownership of their learning and understand what success looks like; encourage student agency in their learning through engagement in self- and peer-assessment processes; and accelerate learning by providing targeted feedback to close the gap between where learners are in their learning, where they need to go, and how best to get there.

2.2.3 Conceptual Underpinnings of Formative Assessment

AfL is situated within a socio-cultural and constructivist view of learning, which recognizes that learning is a result of shared meaning making within a participative community of practice propelled by daily assessment practices (Willis, 2010). AfL involves a transfer of power from teacher to student within the assessment process, which has traditionally resided with teachers. In contemporary formative assessment practices, students have agency and are active creators and users of assessments and assessment information, cultivating foundational self-regulation and metacognitive skills (Andrade & Brookhart, 2020). Self-regulation is understood as individuals adjusting their behaviour and learning practices in ways that better enable them to achieve their goals. Metacognition involves one's awareness of such a practice.

Through self- and peer-assessment processes, students support one another and themselves in setting learning goals, identifying gaps in their learning, and planning next steps for their development. These processes are necessarily tied to and simultaneously work to enhance students' self- and co-regulation, whereby regulating behaviours are influenced by others (Greene, 2020). Through such processes, students become more autonomous, self-regulating, and agentic in their learning. Students also become less reliant on teacher feedback and more

able to sustain their learning independently (Hawe & Parr, 2014). Transferring some power in the assessment process to students reduces traditional power imbalances in classrooms (Nieminen, 2022) and can enhance the inclusion of students' voices and values in the learning process (Bourke & Mentis, 2013).

2.2.4 The Important Role of Feedback

Central to effective formative assessment is continuous engagement with high-quality feedback processes generated from self-, peer-, and teacher-assessments. Feedback is at the heart of self- and co-regulation processes, helping students identify where they are in their learning and where they need to go (Yan & Carless, 2021). Research on feedback has a long history, with studies consistently showing that high-quality feedback can positively support and promote student learning but also that poor-quality feedback can limit and deter learning (Wisniewski et al., 2020). Based on various systematic reviews of feedback research, the effect size of feedback practices on student learning ranges from 0.48 (Wisniewski et al., 2020) to 0.79 (Hattie and Timperley, 2007), signalling that feedback is one of the most powerful pedagogies teachers can leverage.

The key factor in unlocking the power of feedback is understanding the various kinds of feedback and how best to implement them within teaching and learning. Feedback can emphasize different content areas, be delivered via different methods, be directed to different people/pupils, and be given at different points in the learning process (Education Endowment Foundation, 2021). Based on an integrative review of feedback models, Panadero and Lipnevich (2022) identified five core components of feedback that can influence learning and social outcomes: the content of the feedback message, how and when feedback is implemented, the characteristics of the student receiving the feedback, the context of the feedback, and the agent providing the feedback. Feedback is a complex but highly valuable process in teaching and learning.

Hattie and Timperley (2007) developed a model for various kinds of feedback based on a conceptual analysis of feedback literature and evidence. Feedback from teachers, peers, or students themselves can respond to three broad questions:

1. *Where am I going?* Which serves to clarify the learning goals and is known as 'feed up';
2. *How am I going?* Which serves to reflect on the student's current performance level and is known as 'feed back'; and
3. *Where to next?* Which serves to support students' next steps and learning actions and is known as 'feed forward.'

Each of these questions can be answered at four different levels, representing different qualities of feedback to students:

- *Task level:* reflecting on how well the specific task was being performed;
- *Process level:* reflection on how well the underpinning processes needed to perform the task (e.g., writing skills for a persuasive essay) were being performed or understood;

- *Self-regulation level*: reflection on the student’s self-monitoring, self-assessment, and regulation actions; and
- *Self-level*: reflection on personal qualities and affect of the student.

Through their conceptual analysis, Hattie and Timperley (2007) deduced that while self and task level feedback were most common in schools, self-regulation level feedback followed by process level feedback were most effective in supporting learners’ progress.

Feedback is viewed as an essential driving force and maps onto core AfL strategies (see Figure 1). Integrating AfL strategies throughout the learning period creates a classroom rich with feedback. This feedback can cultivate recursive opportunities for students to revisit their learning and enhance their work when it:

- Is anchored to explicit learning goals,
- Provides opportunities to revise work and integrate feedback into learning, and
- Activates self-regulatory behaviours in students (e.g., via self- and peer-assessment).

AfL strategies also provide feedback to teachers on the effectiveness of teaching strategies (James & McCormick, 2009); in essence, AfL can enhance both learning and teaching.

Figure 1

Integrated Model of AfL Strategies and Use of Feedback (Adapted version of William, 2018 drawing on Lysgaht et al., 2017, 2019 AfL principles and instrument for classroom assessment)

	Where am I Going?	How am I Going?	Where to Next?
Learner	Clarifying, sharing, or co-constructing learning intentions and success criteria with students	Engaging in self- and peer-assessment practices to promote community learning, student ownership in learning, and learner agency	
Peer		Leveraging questioning and classroom discussion to deepen student learning and provide in-the-moment feedback for next steps.	Providing ongoing feedback to close the gap between where the student is and their learning goals
Teacher			

2.2.5 Evidence-Informed Formative Assessment Strategies

Various research studies across educational contexts have investigated the impact of different formative assessment strategies on students’ learning, motivation, and performance. While the research evidence is not necessarily unified or comprehensive (Kingston & Nash, 2011), some trends have emerged.

1. *While feedback is essential to propel learning forward, not all feedback is of equal value in supporting student learning.*

Substantive feedback that is focused on process and self-regulation levels has higher value than feedback focused solely on task activities (Hattie & Timperley, 2007; Wisniewski et al., 2020). In addition, self-level feedback (often in the form of praise or punishment) can have a counter effect on learning. A study of 1079 Canadian elementary students found that they valued teacher feedback processes more than peer feedback and that assessments that clarified learning intentions and success criteria were highly valued in supporting their learning (DeLuca et al., 2018). Researchers have increasingly recognized that the effects of feedback are fundamentally driven by how students process feedback (e.g., interpretations, emotional reactions) in addition to the content and source of the feedback (Lui & Andrade, 2022).

2. *For feedback and AfL processes to positively impact learning, teachers need to engage in ongoing professional learning about formative assessment and have multiple levels of support.*

Heitink et al. (2016) noted the multiple contextual factors necessary to support the implementation and uptake of formative assessment in classrooms. At the school level, these factors include leadership, school assessment culture, and professional development supports. At the classroom level, factors include teachers' and students' knowledge, skills, attitudes, and beliefs, as well as the assessment context (i.e., alignment and integration of AfL with content and pedagogy). Research on the adoption of AfL in schools suggests that several of these factors can be effectively supported via professional development initiatives, which aim to build learning communities around AfL concepts and practices (Brooks et al., 2021). These communities should extend to students as explicit instruction of AfL concepts and processes has been shown to increase the uptake and perceived value of AfL processes by students (DeLuca et al., 2018).

3. *All AfL strategies are based on gathering evidence of student learning through ongoing assessments. These assessments should be varied and triangulated.*

Central to AfL practices is the gathering of evidence related to student learning through various daily assessment strategies. A common framework for AfL strategies includes a triangulated approach to collecting evidence and providing students with multiple feedback opportunities. Triangulated evidence enhances the reliability (i.e., consistency) and validity (i.e., accuracy) of feedback by ensuring that students receive more than one piece of feedback, typically from multiple sources (i.e., teacher, peer, and self). Practically, through a triangulation approach, students are encouraged to think more critically and deeply about their learning and work. Evidence of student learning and feedback on student work can be generated through a variety of assessment activities. Importantly, students themselves can be supported in generating and documenting their own evidence of their learning. Discussing this evidence with students can help teachers understand the full context of students' learning and make visible how teachers and students are interpreting evidence of learning (DeLuca et al., 2024).

2.2.6 Implementing AfL in the Classroom

Meaningful implementation of contemporary formative assessment in classrooms often requires significant shifts in teacher practices to adopt a spirit of AfL. The goal is to let formative assessment strategies drive teaching and learning in classrooms; assessment is pedagogy. Specifically, continuous experimentation and implementation of the following strategies – with feedback from students on their effectiveness – will promote an AfL approach to teaching and learning. Importantly, while initial implementation may involve procedural adoption of specific practices (i.e., implementing the letter of AfL), through continuous teacher reflection, professional learning, and explicit engagement with students about developing an AfL culture within the classroom, AfL strategies should become increasingly embedded into teaching and learning processes. These practices have been explicitly drawn from Lysgaht, O’Leary, and Ludlow’s instrument for AfL in the classroom (2017, 2019).

Strategy 1: Clarifying, sharing, or co-constructing learning intentions and success criteria with students

- Learning intentions are stated using words that emphasize knowledge, skills, concepts, and/or attitudes (i.e., what the students are learning, NOT what they are doing).
- Students are reminded about the links between what they are learning and the big learning picture.
- Child-friendly language is used to share learning intentions with students.
- Success criteria related to learning intentions are differentiated and shared with students.
- Students demonstrate that they are using learning intentions and/or success criteria while they are working.

Strategy 2: Leveraging questioning and classroom discussion to deepen student learning and provide in-the-moment feedback for next steps.

- Assessment techniques are used to facilitate class discussion (e.g., brainstorming).
- Questions are used to elicit students’ prior knowledge on a topic.
- Students are encouraged to share the questioning role with the teacher during lessons.
- Students’ incorrect responses are used to guide teaching and learning.
- Students can explain to others what they are learning.

Strategy 3: Engaging in self- and peer-assessment practices to promote community learning, student ownership in learning, and learner agency

- Students are given an opportunity to indicate how challenging they anticipate the learning will be at the beginning of a lesson or activity (e.g., by using traffic lights).
- Students are encouraged to record their progress using, for example, learning logs.
- Students are encouraged to use a range of assessment techniques to review their own work.
- A visual record of students' progress is maintained to celebrate students' learning and show areas of/for development.
- Time is set aside during parent/guardian-teacher meetings for students to be involved in reporting on some aspects of their learning.

Strategy 4: Providing ongoing feedback to close the gap between where the student is and their learning goals

- Feedback to students is focused on the original learning intention(s) and success criteria.
- Assessment techniques are used during lessons to help the teacher determine how well students understand what is being taught.
- Diagnostic information from standardized tests is used to identify strengths and needs in teaching and learning.
- Students are formally involved in providing information about their learning to their parents/guardians, other students in their class, or other visitors to the classroom.
- In preparing to provide students with feedback on their learning, the teacher consults their records of achievement against key learning intentions from previous lessons.

2.2.7 Gathering Evidence of Student Learning

All AfL strategies are predicated on gathering evidence of student learning and engaging in assessment activities on that evidence. Teachers can gather such evidence through observations, conversations, and products. Combining these various forms of evidence contributes to a triangulated approach to student assessment in classrooms.

Observations include teacher or peer observations of student performance and can be recorded digitally or via more traditional anecdotal records. Conversations provide opportunities for in-the-moment, responsive feedback. Through dialogue, teachers and peers can assess students' understanding and support next steps. Conversations can be between teacher and student, involve small groups, or whole class, all of which can comprise assessment evidence of student learning. Both observations and conversations can be guided by standardized protocols (e.g., criteria checklists, rubrics, qualitative notes) or may be more ad hoc. Products refer to any artifact of student work from a quiz/test to an essay to a performance/presentation or other constructed assignment. Products provide natural opportunities for formative feedback (via self, peer-, or teacher-assessments) of work-in-progress and feedback at summative submission points.

2.2.8 Technology-Enabled Formative Assessment and Feedback

Technology has the potential to enhance formative assessment processes to make them more efficient and effective for students and teachers (Pellegrino & Quellmalz, 2011; Shute & Rahimi, 2017). Common digital technologies have been adopted for assessment processes (e.g., laptops, tablets, software) in addition to purposefully created tools for assessment tasks (e.g., automated feedback software; Blundell, 2021; Harris et al., 2010). Adaptive assessments, e-portfolios, collaborative feedback and grading software, digital self- and peer-assessment tools, game/augmented reality environments for assessment and feedback, and assessment analytic packages are among the current platforms that shape the digital assessment reality in some classrooms today (Blundell, 2021).

The rapid rise in generative artificial intelligence (AI, e.g., ChatGPT) has important implications for assessment in schools. Volante et al. (2023) highlighted a pathway for formative assessment facilitated by generative AI. Specifically, ChatGPT affords students with opportunities to critically assess the work they produce using ChatGPT, activating higher order thinking skills of evaluation and creativity. Students can assess the accuracy of ideas, build or enhance connections within and between texts, and extend their learning to their personal contexts or to more authentic ways of demonstrating their learning. AI can thereby facilitate critical self- and “peer” assessment processes. Another potential application of generative AI is to provide students with personalized, AI-generated feedback on their work. As AI technologies continue to develop quickly, they will likely shape how formative assessment operates within schools.

The extent to which technology can be used to support formative assessment strategies will depend on a number of factors, including the availability of technology, teacher and student experience and training, and students’ bandwidth (i.e., degree of digital poverty) (Doucet et al., 2020). Where available, technology may support all dimensions of contemporary formative assessment, from clarifying learning goals and intentions to gathering diverse forms of evidence to supporting self-, peer-, and teacher-feedback processes.

2.3 Summary of Literature Review

Drawing on and updating our T3LFA project [Literature Review](#) (Campbell et al., 2022), this chapter has examined research evidence concerning the importance of supporting teachers and teaching quality, effective features of professional learning and development, teacher leadership, and the history, definitions, features, conceptual understanding, and implementation of formative assessment, including the important role of feedback, gathering evidence, and potential uses of technology. Two years after the publication of our original review, some key current issues emerged, including pressing concerns about a global crisis affecting the teaching profession (UNESCO, 2024; United Nations, 2024) and the rapid rise in AI, both of which have major implications for teachers’ work and for students’ learning.

As discussed further in the following chapters, research on effective features of professional learning and development and about effective formative assessment practices have informed the design and implementation of the T3LFA project and the linked international research. In particular, we have integrated and adapted the six key features of effective professional learning and development into the T3LFA research, namely effective professional learning and development:

- Is linked to teachers' identified priorities for their work to support students' needs, improve student learning, and enhance related student outcomes.
- Is differentiated for teachers' professional values, experiences, and work in their school and classroom contexts.
- Provides useful, research- and practice-informed, quality content relevant to identified professional development needs.
- Supports evidence-informed active professional learning, inquiry processes, critical reflection, and collaborative professional learning to value and develop teachers' leadership and professional agency.
- Requires adequate provision of funding, time, and expert resources.
- Involves system, school, and teacher leadership prioritizing and supporting the importance of professional development.

We have also drawn on the research reviewed concerning effective formative assessment practices to inform the Learning Circles foci and for the international research design, particularly the four interconnected strategies identified by Lysaght et al. (2017, 2019):

- Clarifying, sharing, or co-constructing learning intentions and success criteria with students.
- Leveraging questioning and classroom discussion to deepen student learning and provide in-the-moment feedback for next steps.
- Engaging in self- and peer-assessment practices to promote community learning, student ownership in learning, and learner agency.
- Providing ongoing feedback to close the gap between where the student is and their learning goals.

As we move from the research literature review in this chapter, it is important to clarify the terminology that we used in the T3LFA international research study.

There is considerable debate about definitions of, and distinctions between, "professional development" and "professional learning" (e.g., see Campbell et al., 2017). In this chapter, we have drawn on Cordingley et al.'s (2019, p. 20) definition of "professional development" as "the sustained support offered to teachers," for example, formal activities and events, and "professional learning" as "the processes and activities teachers undertake," for example, continuing inquiry, adaption, and implementation of new practices. The T3LFA project involves both of these features, and therefore, we use the terminology of both professional development and professional learning. In this, we agree with Fullan and Hargreaves (2016, p. 3): "In our view, professional learning and development (PLD) are like a big Venn diagram — not a total eclipse of one by the other, but a lot of mutual interaction and overlap".

There are also a range of definitions of “formative assessment.” As discussed in this chapter, following the seminal work of Black and Wiliam (1998), the UK Assessment Reform Group (2002) established the term “Assessment for Learning” (AfL) to differentiate this type of assessment from summative assessments, such as standardized tests, and to focus on student agency and engagement in assessment and learning. AfL has been widely used internationally (Birenbaum et al., 2015; Laveault & Allal, 2016), but has also been adapted in local contexts with varying approaches to implementation. Following discussion with national researchers and local union representatives in the seven countries participating in the T3LFA project, we were advised and agreed that “formative assessment” was the term that most resonated across all participating contexts. Therefore, we use the term “formative assessment” as encompassing the features, strategies, and practices identified for AfL in the Teacher-Led Learning Circles on Formative Assessment project.

Chapter 3: Professional Learning Context

This chapter provides an overview of the T3LFA project's professional learning and development model, participants and their roles, and a summary of main activities for each of the three years of the project.

3.1 Professional Learning and Development Model

The T3LFA project was led by Education International (EI) with funding from the Jacobs Foundation. The project adapted the [HertsCam Teacher-Led Learning Circle programme](#), a professional learning and development model that engages groups of teachers and facilitators in sustained learning and discussion about an educational topic of collective interest and teacher leadership. In this project, Learning Circles focused on formative assessment practices and strengthening teacher agency, priorities identified by Education International in consultation with the Jacobs Foundation team and Education International's member organizations in the seven participating countries.

The T3LFA project was implemented over three years (2020-2023) across classroom, national, and international contexts in seven countries: Brazil, Côte d'Ivoire, Ghana, Malaysia, South Korea, Switzerland, and Uruguay. Project participants included teachers, local facilitators, local union representatives, national researchers, international facilitators, international researchers, and the project team from Education International. Each participating country was asked to implement three Teacher-Led Learning Circles following the HertsCam programme, with each Circle intended to include ten teachers, two local facilitators, and one local union representative.

3.2 T3LFA Project Participants

Participant roles in the T3LFA project are briefly described below.

- **Education International:** T3LFA project implementing agency
Coordinated and supported overall project activities at international, regional, and national levels, including onboarding, scheduling meetings (virtual and in-person), international data collection, knowledge mobilization, and dissemination in cooperation with national unions.
- **International Researchers:** Researchers from the Ontario Institute for Studies in Education [OISE/University of Toronto](#) and the [Queen's Assessment and Evaluation Group](#), Queen's University
Provided expertise on effective formative assessment practices and linked professional learning supports and leadership development processes for the T3LFA project, led international data collection and reporting, and supported national researchers' data collection and reporting.

- International Facilitators:** Professional learning facilitators from the [HertsCam Network](#) with an established teacher development programme (i.e., Teacher-Led Learning Circles)

Trained and supported local facilitators and local union representatives throughout the T3LFA project virtually.
- National Researchers:** National leaders in educational research

Coordinated and supported Teacher-Led Learning Circles in their country and led national data collection and reporting, including National Report Part 2: Final Country Profile¹.
- Local Union Representatives:** Members of national teacher unions associated with participating schools

Coordinated and facilitated Teacher-Led Learning Circle activities in their country, including teacher learning about formative assessment and implementation of formative assessment practices.
- Local Facilitators:** Educational leaders in participating schools

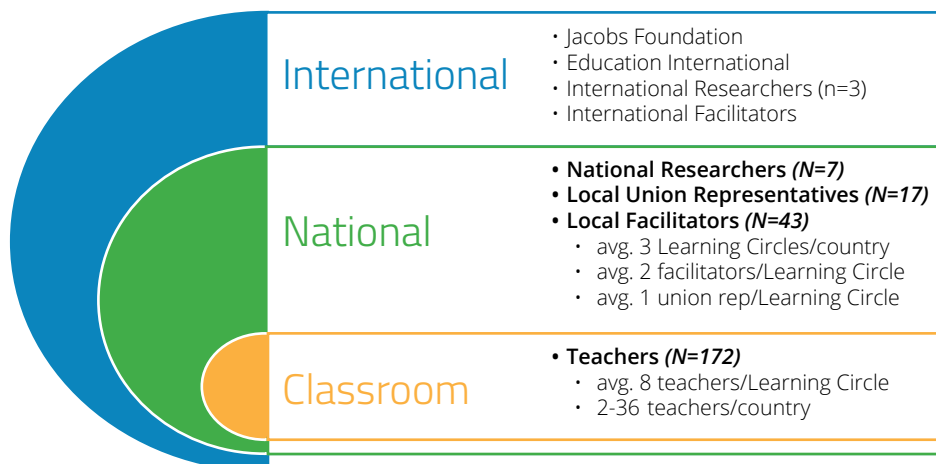
Coordinated and facilitated Teacher-Led Learning Circle activities in their country, including training teachers in formative assessment and supporting teachers' participation in Learning Circle activities (e.g., developing Action Plans, creating Portfolios, and writing Vignettes).
- Teachers:** Classroom teachers from participating schools

Engaged in Learning Circle group activities with teacher colleagues (both within and between schools), local facilitators, and local union representatives; identified and implemented formative assessment practices with their students.

Figure 2 provides an overview of the Teacher-Led Learning Circles project participants at international, national, and classroom levels with the number of participants across roles.

Figure 2

Teacher-Led Learning Circles on Formative Assessment (T3LFA) Project Participants at International, National, and Classroom Levels



¹ See Appendix C.

3.3 T3LFA Project Activities

3.3.1 Year 1

Year 1 of the T3LFA project focused on developing Learning Circle resources, planning for national and international data collection, and training local facilitators and local union representatives in Learning Circle processes. First, international facilitators (from the [HertsCam Network](#)) worked with Education International and international researchers (from OISE, University of Toronto and Queen's University) to create handbooks and tools for local facilitators and teachers to guide their participation in the T3LFA project. The Learning Circle professional learning and development programme was designed to span one academic year (10 months) and include seven 2-hour workshop sessions with all teachers in the Learning Circle, three one-on-one tutorials between the facilitator and each teacher in the Learning Circle, and two network events with teachers across multiple schools (see Figure 3 and Facilitators Handbook).

Figure 3

Recommended Teacher-led Learning Circle Programme Structure from Facilitators Handbook

Month	Activity
Month 1	Workshop Session 1
Month 2	Workshop Session 2
Month 2	Tutorial
Month 3	Network Event
Month 4	Workshop Session 3
Month 4	Tutorial
Month 5	Workshop Session 4
Month 6	Network Event
Month 7	Workshop Session 5
Month 8	Workshop Session 6
Month 9	Tutorial
Month 10	Workshop Session 7

Next, the international researchers, in collaboration with national researchers and Education International, developed an overarching [Research Framework](#) to guide data collection within the project across classroom, national, and international levels. National researchers from each country also wrote National Report Part 1: Country Profile to provide an overall profile of the context of their country's education system, assessment policies, and formative assessment practices.²

² See Chapter 4 for a summary of the international data collection activities.

Finally, the HertsCam international facilitators conducted virtual sessions with the local facilitators and local union representatives, training them on the Teacher-Led Learning Circles process and how to use the [Facilitators Handbook](#) and [Participants Guide](#) for teachers. The international facilitators from HertsCam designed tailored programmes for each country unique to the nature of the project and the country contexts.

3.3.2 Year 2

Year 2 of the T3LFA project focused on the implementation of Learning Circles within the participating countries. The project supported an average of three Learning Circles in each country, providing professional development and promoting teacher leadership among groups of teachers to support their understanding and use of formative assessment practices. Each Learning Circle included an average of eight teachers, two local facilitators, and one local union representative. Teachers were selected based on their interest in promising formative assessment practices and commitment to the Teacher-Led Learning Circles process. Overall, the T3LFA project supported 21 Learning Circles with a total of 172 teachers (average of 8/Circle), 43 local facilitators (average of 2/Circle), and 17 local union representatives (average of 1/Circle). See Table 1 for the total number of Learning Circles, teachers, local facilitators, and local union representatives for each participating country.

Table 1

Total Number of Learning Circles, Teachers, Local Facilitators, and Local Union Representatives for Participating Countries in the T3LFA Project

Country	Number of Learning Circles	Number of Teachers	Number of Local Facilitators	Number of Local Union Representatives
Brazil	3	21 (6, 7, 8/Circle)	6 (2/Circle)	3 (1/Circle)
Côte d'Ivoire	3	30 (10/Circle)	6 (2/Circle)	2 (across all 3 Circles)
Ghana	6	36 (6/Circle)	12 (2/Circle)	6 (1/Circle)
Malaysia	3	30 (10/Circle)	6 (2/Circle)	3 (1/Circle)
South Korea	3	28 (8, 10, 10/Circle)	6 (2/Circle)	1 (across all 3 Circles)
Switzerland	1	2	1	1
Uruguay	2	20 (10/Circle)	6 (2/Circle)	1 (across both Circles)
TOTAL	21 (avg. 3/country)	167* (avg. 8/Circle)	43 (avg. 2/Circle)	17 (avg. 1/Circle)

Note. *The T3LFA project began with 172 teachers, but 5 did not complete the project.

Learning Circle activities were guided by the HertsCam toolkit, [Facilitators Handbook](#), and [Participants Guide](#) for teachers. Within each Learning Circle, local facilitators and local union representatives helped teachers (a) create an Action Plan to guide their development project processes and formative assessment practices; (b) develop, identify, apply, adapt, and review formative assessment practices; (c) complete ongoing reflections in a Record of Participation; (d) construct a Portfolio of evidence related to teacher leadership processes and formative assessment practices; and (e) create a Vignette to share their learning and experience within and beyond the project. Teachers also completed international data collection activities during Learning Circle sessions: Teacher Pre- and Post-Surveys (Pre-Survey during Session 2 and Post-Survey during Session 7) and the Teacher Codification Framework Questionnaire (toward the end of Year 2).

The national researcher in each country supported teachers' data collection and analysis to help them identify and describe effective formative assessment practices and associated impacts on students' learning. In addition, international researchers gathered questionnaire data from local facilitators, local union representatives, and national researchers at the end of Year 2.

Throughout Year 2, Education International fostered regular exchanges between teachers globally, regionally, and nationally through in-person and virtual sessions, including thematic webinars and cross-regional learning events. In addition, the national project teams facilitated national networking and learning events.

3.3.3 Year 3

Year 3 of the project focused on analyzing and codifying project data collected during Years 1 and 2 and reporting on key findings, both nationally and internationally.

Each national researcher completed a National Report Part 2: Final Country Profile (see Appendix C), informed by project data from teachers, local facilitators, and local union representatives and including their National Report Part 1: Country Profile from Year 1.

International researchers used project data³ to codify effective formative assessment practices and teacher development processes that supported teachers' use of formative assessment across participating countries, generating international findings for this report.

³ See Chapters 5, 6 and 7.

Chapter 4: International Research Framework

4.1 Overview of International Research Framework

The international [Research Framework](#) (LaPointe-McEwan et al., 2022) guided the collection, analyses, and reporting of evidence on effective formative assessment practices in the T3LFA project, including consideration of teachers' practices, students' learning, and the professional learning and development processes that supported teacher leadership and improvements in teachers' assessment practices. The framework employed a multiple methods research design to test, iteratively develop, and codify effective formative assessment practices.

Project data collection and analysis occurred at three levels: classroom, national, and international. The original [Research Framework](#) was adapted based on ongoing collaboration between international researchers, national researchers, and Education International to ensure an appropriate research plan, design, and data collection instruments were applied in each country. Education International translated all data collection instruments from English to French, German, Korean, Malay, Portuguese, and Spanish to enable participants' responses. In addition, Education International and the international researchers translated participants' responses to English as needed to facilitate international data analysis and reporting.

4.2 International Research Questions

The international [Research Framework](#) is rooted in two broad research questions and associated guiding questions.

1. In the Teacher-Led Learning Circles, what promising teacher-led formative assessment practices were identified?

- a) What teacher-led formative assessment practices were used, and how were they implemented?
- b) How did technology support the implementation of formative assessment practices?
- c) Which teacher-led formative assessment practices provided effective feedback to students?
- d) What benefits from using formative assessment were identified for teachers' practices?
- e) What benefits from using formative assessment were identified for students' learning?

2. In the Teacher-Led Learning Circles, what professional learning and teacher leadership processes supported teachers' formative assessment practices?

- How were teachers supported in understanding, developing, and using formative assessment practices?
- What helped or hindered effective use of formative assessment practices?

4.3 International Data Sources

The international research team used five primary data sources to gather T3LFA project participants' perspectives and experiences: Teacher Pre- and Post-Surveys, Teacher Codification Framework Questionnaire, Local Facilitator Questionnaire, Local Union Representative and National Researcher Questionnaire, and National Reports. Each of these data sources is described below, and all instruments are included in Appendix A.

4.3.1 Teacher Pre- and Post-Surveys

The **Teacher Pre- and Post-Surveys** gathered information about teachers' formative assessment practices, professional development experiences, and demographics at the beginning and end of their participation in the T3LFA project (i.e., during Year 2). Teacher participants completed these 20-minute surveys during designated Learning Circle sessions (Pre-Survey during Session 2 and Post-Survey during Session 7). The Teacher Pre- and Post-Surveys were designed to stimulate discussion and reflection within Learning Circles and to provide data for this report. Each survey included fixed-response items (33 on the Pre-Survey, 36 on the Post-Survey) and one open-response item. Both surveys were organized into three parts, described in more detail below⁴.

Part 1: Formative Assessment Practices

As explained in Chapter 2, the term "formative assessment" was used throughout this project for data collection (instead of AfL) as it was more readily understood across all seven jurisdictional contexts. Nonetheless, a contemporary perspective on formative assessment was adopted that drew on core AfL strategies.

Part 1 of the Teacher Pre- and Post-Surveys was adapted from the [Assessment for Learning Measurement Instrument](#) (Lysaght et al., 2017) and focused on teachers' formative assessment practices. It consisted of 20 fixed-response items on the Teacher Pre-Survey and 26 fixed-response items on the Teacher Post-Survey. Teachers were asked to report their **confidence** using formative assessment practices (not at all confident to highly confident) and the extent to which these practices were **embedded** in their classrooms (never to embedded) at the start and end of the project in four research-based formative assessment categories:

1. Learning Intentions and Success Criteria

Teachers communicate the knowledge, skills, and concepts students need to learn and how students will demonstrate their learning.

⁴ See Appendix A for the Teacher Pre- and Post-Survey instruments.

2. Questioning and Classroom Discussion

Teachers facilitate questioning and classroom discussion to deepen student learning and provide in-the-moment feedback for next steps.

3. Feedback

Teachers provide ongoing feedback to close the gap between where the student is and their learning goals.

4. Self- and Peer-Assessment

Teachers foster students' self- and peer-assessment to promote community learning, student ownership in learning, and learner agency.

Part 2: Professional Development and Teacher Leadership Processes

Part 2 of the Teacher Pre- and Post-Surveys asked teachers to rate the extent to which their professional development experiences reflected the six (6) qualities of effective professional learning and development identified in our [Literature Review](#) for the project. Each survey consisted of six (6) fixed-response items and one open-response item which asked teachers to describe their professional learning goals related to formative assessment and teacher leadership.

Part 3: Demographics

Part 3 of the Teacher Pre- and Post-Surveys asked teachers to share relevant demographic information, including their country, years of teaching experience, level they currently teach, typical class size, school context, access to digital technology in the classroom, and how they have learned about formative assessment. Each survey consisted of seven fixed-response items.

4.3.2 Teacher Codification Framework Questionnaire

Toward the end of Year 2, teachers were invited to complete a **Teacher Codification Framework Questionnaire** to showcase one or two effective formative assessment practices that supported their students. This optional, open-response questionnaire augmented the international researchers' original [Research Framework](#) and was intentionally aligned with the four research-based formative assessment categories in the Teacher Pre- and Post-Surveys (i.e., Learning Intentions and Success Criteria, Questioning and Classroom Discussion, Feedback, and Self- and Peer-Assessment) plus an Other category⁵. Teachers were encouraged to respond to this questionnaire and use their responses to inform their Teacher Vignettes within the Learning Circles process.

4.3.3 Local Facilitator Questionnaire

At the end of Year 2, local facilitators were asked to complete the **Local Facilitator Questionnaire** about their experiences facilitating Learning Circle activities in the T3LFA project. This open-response questionnaire included 14 questions about four topics: demographics (1 question),

5 See Appendix A.

challenges and supports they experienced during Learning Circles (4 questions), effective formative assessment practices they identified during the project (6 questions), and how Learning Circles supported teacher leadership (3 questions)⁶.

4.3.4 Local Union Representative and National Researcher Questionnaires

At the end of Year 2, local union representatives and national researchers were asked to complete the **Local Union Representative and National Researcher Questionnaires**. This open-response questionnaire included 4 questions about four topics: demographics (1 question), professional learning processes that supported teachers (1 question), promising teacher-led formative assessment practices (1 question), and lessons learned to inform successful implementation of Teacher-Led Learning Circles (1 question)⁷.

4.3.5 National Reports: Country Profile and Final Country Profile

National researchers from each participating country submitted two reports to provide data for this report and summarize their country's respective experiences in the T3LFA project: **National Report Part 1: Country Profile and National Report Part 2: Final Country Profile**. The international researchers provided guiding frameworks for each report⁸.

National Report Part 1: Country Profile

At the start of the project (Year 1), each national researcher completed National Report Part 1: Country Profile to provide an overall profile of the context of their country's education system, assessment policies, and formative assessment practices. Each report was 6-10 pages long and included:

- Overview of national education system, governance, education policies, demographic information (number of schools, number of students, student demographics), and other contextual information considered important for national and international readers (for example, professional, media, and public opinion about education in country);
- Summary and discussion of current national (and/or local as relevant) assessment policies;
- Discussion of existing professional learning contexts and professional development for teachers' use of formative assessment (emphasis on primary);
- Examples of formative assessment practices currently being used by teachers (emphasis on primary);
- Review of relevant research literature on above topics within specific country to be integrated in report.

6 See Appendix A for the Local Facilitator Questionnaire instrument.

7 See Appendix A for the Local Union Representative and National Researcher Questionnaire instruments.

8 See the Research Framework and Appendix A.

National Report Part 2: Final Country Profile

At the end of the project (Year 3), each national researcher completed National Report Part 2: Final Country Profile to identify, codify, and describe effective formative assessment practices and the linked Teacher-Led Learning Circles experiences in their country. This report served as a case study for each country that participated in the T3LFA project⁹.

National researchers used the guiding template¹⁰ created by the international researchers to generate a 20–30-page report including the following content:

- **Part 1: Country Profile** review of existing policies, practices, and research on professional development for teachers' use of formative assessment in each country.
 - National Report 1 updated if needed based on any policy or research updates or new documents and literature that now exist since writing original report, and any feedback from international researchers.
- **Part 2: Country Findings**
 - Description of the design and implementation of Teacher-Led Learning Circles in the country, for example, approach to selecting teachers, number of teachers involved, how many schools these teachers work in, engagement of teacher unions, government (if any) and other partners.
 - Analyses of Teacher-Led Learning Circles data to provide findings linked to international research questions. Data sources to include:
 - Action Plans, Portfolios, Reflections, and Vignettes created by participating teachers
 - Teacher Pre/Post Surveys and Teacher Codification Framework Questionnaire responses
 - Local Facilitator and Local Union Representative Questionnaire responses
 - Any further observations and evidence gathered by national researcher(s)

Table 2 provides a summary of all T3LFA project data sources for this report and the number of responses and response rates for each source. Teacher Pre- and Post-Survey responses were high; 99% (n = 171) responded to the Teacher Pre-Survey and 70% (n = 121) responded to the Teacher Post-Survey. Questionnaire responses were also high: 66% of teachers (n = 113) responded to the Teacher Codification Framework Questionnaire, 63% of local facilitators (n = 27) responded to the Local Facilitator Questionnaire, 59% of local union representatives (n = 10) responded to the Local Union Representative Questionnaire, and 100% of national researchers (N = 7) responded to the National Researcher Questionnaire. In addition, all national researchers (N = 7) submitted their national reports: National Report Part 1: Country Profile and National Report Part 2: Final Country Profile.

⁹ See Appendix C.

¹⁰ See Appendix A.

Table 2

T3LFA Project Data Sources, Number of Responses, and Response Rates

Data Source	Total Responses	Response Rate
National Report Part 1: Country Profile A review and analysis of existing policies, practices, and research on formative assessment in each country.	7	100%
Teacher Pre-Survey A 3-part survey focused on teachers: Formative Assessment Practice (20 fixed-response items) Professional Development and Teacher Leadership Processes (6 fixed- and 1 open-response item) Demographics (7 fixed-response items)	171	99%
Teacher Post-Survey A 3-part survey focused on teachers: Formative Assessment Practice (26 fixed-response items) Professional Development and Teacher Leadership Processes (6 fixed- and 1 open-response item) Demographics (7 fixed-response items)	121	70%
Teacher Codification Framework Questionnaire Optional open-response teacher questionnaire to showcase how formative assessment practices are supporting the students of teachers participating in the Teacher-Led Learning Circles project.	113	66%
Local Facilitator Questionnaire Open-response questionnaire about challenges and supports they experienced during Learning Circles, effective formative assessment practices they identified, and how Learning Circles supported teacher leadership.	27	63%
Local Union Representative Questionnaire Open-response questionnaire about professional learning processes that supported teachers, promising teacher-led formative assessment practices, and lessons learned to inform successful implementation of Teacher-Led Learning Circles.	10	59%
National Researcher Questionnaire Open-response questionnaire about professional learning processes that supported teachers, promising teacher-led formative assessment practices, and lessons learned to inform successful implementation of Teacher-Led Learning Circles.	7	100%
National Report Part 2: Final Country Profile Country case study reports that included existing policies, practices, and research on formative assessment and the identification, codification, and description of effective formative assessment practices and findings linked to research questions.	7	100%

Chapter 5: Participating Country Profiles

This chapter provides a brief profile of each country that participated in the T3LFA project: Brazil, Côte d'Ivoire, Ghana, Malaysia, South Korea, Switzerland, and Uruguay. Each profile draws on information from the National Reports with Country Profiles produced by national researchers. The profiles include an overview of the country's demographics, education system, education policies, assessment practices, professional learning approaches, and teacher participants' demographics¹¹.

5.1 Brazil

Brazil is South America's largest and most populous country, with over 217 million people, and the 13th largest economy globally. Its official language is Portuguese, with some of the population speaking Spanish, English, and German. The education system is decentralized. States and municipalities have autonomy over education and social rights through the Federal Constitution (1988). Education is organized into two levels: Basic Education and Higher Education. Basic Education includes Early Childhood Education, Fundamental Education (Primary Education), and Secondary Education. This project focused on the Primary Education context.

Municipalities are primarily responsible for Basic Education with technical and financial cooperation from the state and federal governments. In 2018, the National Basic Curriculum (BNCC) was introduced to standardize education throughout the different stages and modalities of Basic Education. The new curriculum is focused on the progressive accumulation of essential knowledge, informed by large-scale assessment results. Education access is unequal, varying by geographic location, access to technology, and socioeconomic status. The school system has become more inequitable since COVID-19 and was already particularly inequitable for Black and Indigenous peoples. Most children in Primary Education attend municipal schools (49.6%), followed by state schools (32.2%), private schools (17.4%), and federal schools (0.8%).

In Brazil, assessment has mainly been used for summative purposes to monitor student learning. The BNCC states that assessment in Primary and Lower Secondary Education must include the development of knowledge, skills, and competencies. There is a model of 'State-as-Assessor' that oversees the Basic Education Assessment System (Saeb) established in the early 1990s. Although policy documents advocate for formative assessment processes, the reality in practice diverges significantly. Essential learning is often defined by skills and competencies, leading to a curriculum centred around mass testing. This approach dictates how targets are met and shapes the pedagogical strategies used to achieve desired results in assessments. The BNCC also influences initial teacher training and continuous training as well, in alignment with the curriculum. Teacher learning and performance assessment are connected to large-scale assessment policies rather than to formative assessment processes that focus on human-centred and comprehensive education.

Twenty-three teachers from Brazil participated in the T3LFA project, with a median of 23 years of experience. Nearly all teachers were from urban areas, taught Primary 3, and had 16-30 students in their class. Most had access to WiFi and a few devices with some having intermittent

¹¹ For more detailed country context descriptions, please see the Country Case Study reports in Appendix C.

WiFi and few reliable devices for students. Prior to the start of the project, most teacher participants reported they learnt about formative assessment through teacher education courses, with some learning through professional learning and development initiatives and some through conversations with other teachers.

For more details about Brazil's education and assessment context and experiences in this project, read Brazil's final report, a case study written by Professor Dalila Andrade Oliveira, national researcher for the T3LFA project.

5.2 Côte d'Ivoire

Côte d'Ivoire is a country located in West Africa with a population of approximately 29 million people (PGPH, 2021). Its official language is French, and it is home to about 60 local ethnic groups. The country has 31 administrative regions with two autonomous districts: Yamoussoukro, the official capital, and Abidjan, the economic capital. The public education system is made up of three stages: primary, secondary, and tertiary education. This project focused on the Primary Education context.

In Côte d'Ivoire, education is a public service institution and is enshrined in the Ivorian Constitution's articles 7 and 8. Under these articles, the state must ensure equal access to education for all citizens and, together with the public authorities, create favourable conditions for the civic and moral education of young people. Education is overseen by several government ministries, including the Ministry of Education and Literacy and the Ministry of Technical Education, Vocational Training and Apprenticeship. Class sizes can be large across all stages of education. The Report of the State of the National Education System (RESEN) noted that the Ivorian education and training sectors face general challenges that stem from the need to adapt to societal changes. These challenges centre on issues of access and equity, quality, internal efficiency, and relevance.

Assessment in Côte d'Ivoire is conducted to measure progress in relation to learning objectives, to support system and curriculum reform, and to report on students' development of skills. The assessment system is overseen by the Department of Monitoring and Follow-up of Programmes, created by the Ministry of National Education in 2011 and re-structured in 2014. Formative assessment is used as a learning aid and is part of a constructive approach to learning to benefit both learners and teachers. Summative assessment takes place at the end of a set of learning tasks and is used to assign a numerical mark to the performance of students.

Thirty teachers from Côte d'Ivoire participated in this project. They had a median of 8 years of teaching experience. Of the teacher participants, most worked in urban contexts, taught Primary 2, and had 51 or more students in their class. None of these teachers reported having WiFi or devices in the classroom. Prior to taking part in the project, most teachers indicated they learned about formative assessment through teacher education courses and professional learning and development initiatives.

For more details about Côte d'Ivoire's education and assessment context and experiences in this project, read Cote d'Ivoire's final report, a case study written by Professor Claude Koutou, national researcher for the T3LFA project.

5.3 Ghana

Ghana is a lower-middle-income country in West Africa with a population of 30.8 million. It has 16 administrative regions. Accra, the capital city, has the highest population and the Ahafo region has the lowest. Ghana has a young population, with approximately 57% of inhabitants under the age of 25. Nearly a quarter of the population (24.2%) lives below the national poverty line. The current education system is divided into three parts: basic education (kindergarten, primary, and junior high school), secondary education (high school), and tertiary education. The T3LFA project focused on the primary education context.

Ghana's education system originated in its colonial past. Schools established in the pre-colonial period were intended to educate mixed-race children of European traders. Education access was expanded under the work of Christian missionaries who considered education to be a tool for missionary work. In 1995, the government introduced Free Compulsory Universal Basic Education reforms to increase access to and the quality of education. Education is implemented by the Ministry of Education (MOE) through the Ghana Education services. Policy and curriculum are developed by the MOE for pre-tertiary education. At the regional and district levels, education offices represent the MOE and officers from these organizations monitor and supervise education policies and inspections of schools. Ghana has seen a rise in access to basic education since 2010/2011 due to the abolition of school fees and the introduction of interventions such as a capitation grant scheme, school feeding programs, and education decentralization. Despite these changes, the Gross Enrolment Ratios across the basic education sector are seeing a decrease. The MOE estimates that about 450,000 children are not enrolled in school, most of whom are concentrated in the northern regions, urban areas, cocoa farming, and mining areas.

Although both summative and formative assessment are recognized by the curriculum, emphasis is placed on the latter. Formative assessment is articulated in the curriculum as 'assessment as learning' and 'assessment for learning.' Schools also use internal assessment systems to introduce achievement standards and monitor students' progress. Teacher professional development has improved since 2018 to become more consistent and enshrined within policy.

Thirty teachers from Ghana participated in the T3LFA project. They had a median of 12.5 years of teaching experience. Teacher participants represented both rural and urban areas and were distributed across Primary 1, 4, and 6 levels. Most had 31-50 students in their class, and did not have access to WiFi or devices in the classroom. Prior to the project, teachers primarily learned about formative assessment through teacher education courses and professional learning and development initiatives.

For more details about Ghana's education and assessment context and experiences in this project, read Ghana's final report, a case study written by Dr. Christopher Yaw Kwaah, national researcher for the T3LFA project.

5.4 Malaysia

Malaysia is a country located in Southeast Asia with a population of over 34 million people. Malaysia is a federation of 13 states and three federal territories. Malaysia's national language is Malay which is spoken by over 80% of the population; English is the second official language. The current education system is divided into five stages: preschool education, primary education, secondary education, post-secondary education and tertiary education. This project focused on the Primary Education context.

Education in Malaysia is overseen by several government branches, including the Ministry of Education. Malaysia's education system has developed through various policy reforms, the first of which occurred from 1955-1961. Primary education in Malaysia is unique because of the demographic makeup of the population. Following the stipulation in the Rahman Talib Report and the National Education Philosophy (NEP) that students of Chinese and Indian backgrounds must be supported in learning and maintaining their mother tongues, two types of primary schools were established. They are the National Primary School (NPS) and the National Type Primary School (NTPS). Both types follow the same primary education system and use the same national standard curriculum and syllabus; the only difference is the medium of instruction. The NPS use the Malay language, and the NTPS use either Chinese or Tamil as the medium of instruction.

Assessment within national education has traditionally been test-oriented and focused on summative evaluation. However, Malaysia is shifting away from memory-based learning toward a more student-centred approach that prioritizes critical thinking, creativity, and formative assessment. The Teacher Professional Development Master Plan is an initiative designed to develop professionalism across various aspects of teaching, including differentiating between formative and summative assessment.

Thirty-five teachers from Malaysia participated in the T3LFA project, with a median of 15 years of teaching experience. Most of the teacher participants worked in urban contexts. They represented Primary 1 through 7; most taught Primary 6 and had 21-40 students in their class. Most teachers had access to WiFi with a few devices, and some had consistent WiFi access and several reliable devices in the classroom. Prior to this project, teachers indicated that they learned about formative assessment primarily through teacher education courses, classroom experiences, and self-study.

For more details about Malaysia's education and assessment context and experiences in this project, read Malaysia's final report, a case study written by Dr. Zuwati Hasim, national researcher for the T3LFA project.

5.5 South Korea

South Korea is a country located in East Asia, bordered by the Democratic People's Republic of Korea to the north, the East Sea to the east, the East China Sea to the south, and the Yellow Sea to the west. It is separated from the Japanese island of Tsushima by the Korea Strait. South Korea has a population of over 51 million people. The official language is Korean and other languages include Japanese, English, and Mandarin. The current education system follows a 6-3-3-4 ladder system, comprised of six years in elementary school, three years in middle school, three years in high school, and four years in university or two to three years at a junior college. The T3LFA project focused on the Primary Education context.

In South Korea, national education is governed by central and provincial organizations made up of 17 provincial offices of education, 176 regional education offices, and unit schools under the Ministry of Education. The Ministry is responsible for the planning, implementation, and monitoring of educational policies and strategies at the national level, and the provincial office of education and regional education offices oversee the local education systems.

Evaluation guidelines are presented in the General Guideline for the 2015 Revised Curriculum published by the Ministry of Education. These guidelines focus on process-oriented evaluation, which involves teachers triangulating multiple forms of assessment data collected during the learning process to provide appropriate formative feedback. Formative evaluation is used to provide feedback to students that is immediate and continuous to support students' learning.

This project included 33 teachers from South Korea who had a median teaching experience of 18 years. Teacher participants represented both rural and urban areas and taught Primary 1 through 7. Most taught Primary 6, had 16-30 students in their class, and had access to consistent WiFi and reliable devices in the classroom. At the start of this project, teachers commonly learned about formative assessment through teacher education courses, conversations with teacher peers, classroom experience, and professional learning and development initiatives.

For more details about South Korea's education and assessment context and experiences in this project, read South Korea's final report, a case study written by Professor Sun Kim, national researcher for the T3LFA project.

5.6 Switzerland

Switzerland is a multilingual country in west-central Europe with a population of approximately 8.85 million people. Its official languages are German, French, Italian, and Romansh, with German being the most widely spoken. The education system in Switzerland is governed by a federal system at three levels (the confederation, the 26 cantons, and the communes) and includes preschool, compulsory education, and non-compulsory education. This project focused on the compulsory education context.

Compulsory education in Switzerland is decentralized and the responsibility of each canton in order to accommodate linguistic and cultural diversity. The compulsory education curriculum in each canton is described in terms of competencies or standards that students must meet. Students begin compulsory education at age four and attend for 11 years total (2 years of kindergarten, 6 years of primary education, and 3 years of lower secondary school). Approximately 95% of all students attend state school at no cost, and about 5% receive their education from private schools.

Assessment in compulsory education is considered a necessary tool to support students' educational progress and achievement of curriculum standards. Each canton determines its own approach to assessment, using assessment for both summative and formative purposes to facilitate teaching and learning activities. Formative assessment practices include diagnostic assessments, portfolio assessments, self-assessments, and descriptive feedback. Recently, large-scale national/central examinations have been developed to evaluate and report on student achievement of four national education standards across cantons. One examination is administered at the primary level and one at the lower secondary level. Switzerland also participates in the Programme for International Student Assessment (PISA), which assesses 15-year-old students' knowledge and skills in mathematics, reading, and science. In Switzerland, all teachers participate in professional development focused on assessment for summative and formative purposes in their teacher education program and in their professional practice.

Three teachers from Switzerland participated in the T3LFA project, with a median of seven years of experience. All taught Primary 4, had 16-20 students in their class, and had access to WiFi and reliable devices for their students. Two taught in suburban schools and one in a rural school. At the start of the project, these teacher participants reported learning about formative assessment through classroom experience, self-study, conversations with teacher peers, and teacher education courses.

For more details about Switzerland's education and assessment context and experiences in this project, read Switzerland's final report, a case study written by Dr. Robbert Smit, national researcher for the T3LFA project.

5.7 Uruguay

Uruguay is a country located in South America, bordered by Argentina to the west and southwest and Brazil to the north and northeast. Uruguay has a population of about 3.4 million. Nearly 2 million of these inhabitants live in the metropolitan area of Uruguay's capital and largest city, Montevideo. The official language of Uruguay is Spanish; however, in Rivera and other borderland towns close to Brazil, inhabitants may speak a mix of Portuguese and Spanish called *Portuñol*. The education system includes primary, middle, secondary, vocational, and tertiary levels. The T3LFA project focused on the Primary Education context.

In Uruguay, the national education system is governed by the Administración Nacional de Educación Pública (ANEP) [National Administration of Public Education], an autonomous organization that is separate from the Ministry of Education and Culture. The ANEP oversees education from primary to upper secondary and non-university tertiary education. Uruguay's entire population has the right to access education for free from primary to university levels. In 2020, the Urgent Consideration Act was passed which increased the State's involvement in education while possibly introducing commercialization of education through treaties with international organizations.

Assessment is mixed in terms of providing tests that teachers can use at their discretion. The ANEP states that formative assessments are assessment for learning and not of learning and are used to make decisions to help improve learning and teaching. Assessment of learning is connected to summative assessment and is used to evaluate what students know, determine if they have achieved the set standards, and rank the achieved scores.

This project included 14 teachers from Uruguay with a median of 17.5 years of teaching experience. Most teacher participants worked in urban regions. Teachers represented Primary 1 through 4, with most teaching Primary 3 with 21-30 students in their class. All of these teachers reported having access to WiFi and devices available for their students. Prior to the project, most teachers shared that they learned about formative assessment through self-study, conversations with teacher peers, and classroom experience, self-study, and teacher education courses.

For more details about Uruguay's education and assessment context and experiences in this project, read Uruguay's final report, a case study written by Dr. Eloísa Bordoli and Ana María Novo Borges, national researchers for the T3LFA project.

Chapter 6: Findings

This chapter presents the findings from the international research conducted within the T3LFA project. The findings are organized according to the two broad research questions identified in the [Research Framework](#) (LaPointe-McEwan et al., 2022):

- 1. *In the Teacher-Led Learning Circles, what promising teacher-led formative assessment practices were identified? (Section 6.1)***
- 2. *In the Teacher-Led Learning Circles, what professional learning processes supported teachers' formative assessment practices? (Section 6.2)***

6.1 Promising Teacher-led Formative Assessment Practices

This section reports on promising teacher-led formative assessment practices in response to research question 1 and its associated sub-questions.

- 1. *In the Teacher-Led Learning Circles, what promising teacher-led formative assessment practices were identified?***
 - a) What teacher-led formative assessment practices were used, and how were they implemented?*
 - b) How did technology support the implementation of formative assessment practices?*
 - c) Which teacher-led formative assessment practices provided effective feedback to students?*
 - d) What benefits from using formative assessment were identified for teachers' practices?*
 - e) What benefits from using formative assessment were identified for students' learning?*

The data sources used to inform this section include project participants' responses to the Teacher Pre- and Post-Surveys, Teacher Codification Framework Questionnaire, Local Facilitator Questionnaire, Local Union Representative Questionnaire, and National Researcher Questionnaire as well as National Report Part 2: Final Country Profile from each participating country.

This section highlights changes in teachers' confidence in and use of formative assessment practices from the beginning to the end of the T3LFA project, describes teachers' implementation of new formative assessment practices during the project, and spotlights promising formative assessment practices that teachers used¹².

12 A summary of promising formative assessment practices with observed benefits for students and teachers can also be found in Appendix B.

6.1.1 Changes in Teachers' Formative Assessment Practices

Teacher Pre- and Post-Survey results elucidated changes in teachers' formative assessment practices from the beginning to the end of the project. This section reports on teacher demographics followed by changes in teachers' **confidence** using formative assessment practices (not at all confident to highly confident) and the extent to which formative assessment practices were **embedded** in their classrooms (never to embedded). Changes in formative assessment practices are organized according to the survey's four research-based formative assessment categories: Learning Intentions and Success Criteria, Questioning and Classroom Discussion, Feedback, and Self- and Peer-Assessment (see [Assessment for Learning Measurement Instrument](#); Lysaght et al., 2017).

6.1.1.1 Teacher Demographics

Tables 3 and 4 provide a summary of teacher demographics reported in the Teacher Pre- and Post-Survey. Teacher respondents represented each participating country, with 3-35 teachers per country responding to the Teacher Pre-Survey and 2-27 teachers per country responding to the Teacher Post-Survey. The largest group of teachers worked in urban school contexts (53.5% on the Pre-Survey and 41.9% on the Post-Survey) (see Table 3).

The largest group of teacher participants had 11-20 years of experience (40.2% on both the Pre- and Post-Surveys). Teachers taught Primary 1-7 levels, with teachers in Primary 3 being the largest group of respondents (39.9% on the Pre-Survey and 35.3% on the Post-Survey). The most frequent number of students per class was 21-30 (31.6% on the Pre-Survey and 28.7% on the Post-Survey). A high percentage of teachers reported having no WiFi or devices in the classroom (36.8% on the Pre-Survey and 41.8% on the Post-Survey). Teachers typically learned about formative assessment through teacher education courses (77.5% on the Pre-Survey and 77.8% on the Post-Survey), with learning through conversations with teacher peers increasing most by the end of the project (from 52.1% on the Pre-Survey to 70.1% on the Post-Survey) (see Table 4).

Table 3

Pre- and Post-Teacher Survey Demographics: Teachers' National and School Contexts (N = 172)

Variable	Pre-Survey		Post-Survey	
	N	%	N	%
Country				
Brazil	23	13.2	18	14.8
Uruguay	14	8.0	2	1.6
Côte d'Ivoire	30	17.2	27	22.1
Ghana	30	17.2	20	16.4
Malaysia	35	20.1	19	15.6
South Korea	33	19.0	26	21.3
Switzerland	3	1.7	3	2.5
School Context				
Urban	90	53.6	49	41.9
Rural	48	28.6	25	21.4
Suburban	14	8.3	35	29.9
Indigenous	2	1.2	0	0
Quilombola	1	0.6	1	0.9
Metropolitan	4	2.4	1	0.9
Large city	3	1.8	1	0.9
Middle-sized city	13	7.7	10	8.5
Small city	6	3.6	5	4.3
Urban	90	53.6	49	41.9
National Type of School (Malaysia)				
National School	16	9.2	13	10.7
Chinese	9	5.2	4	3.3
Tamil	9	5.2	5	4.1

Note. A total of 172 teachers participated in the project.

Table 4

Pre- and Post-Teacher Survey Demographics: Teacher Factors (N = 172)

Variable	Pre-Survey		Post-Survey	
	N	%	N	%
Years of Teaching Experience				
0-10	55	31.6	34	27.7
11-20	70	40.2	49	40.2
21-30	38	21.8	25	20.3
31+	7	4	6	4.9
Teaching Division				
Primary 1	44	26.2	30	25.9
Primary 2	35	20.8	22	19.0
Primary 3	67	39.9	41	35.3
Primary 4	47	28.0	37	31.9
Primary 5	32	19.0	26	22.4
Primary 6	51	30.4	39	33.6
Primary 7	7	4.2	1	0.9
Typical Number of Students				
< 21	39	22.4	29	23.8
21-30	55	31.6	35	28.7
31-50	41	23.5	29	23.7
> 50	34	19.5	24	19.7
Access to Technology				
Consistent WiFi, each student has reliable device	22	12.6	23	18.9
Consistent WiFi, several reliable devices	31	17.8	14	11.5
WiFi, a few devices	36	20.7	21	17.2
Intermittent WiFi, a few reliable devices	16	9.2	8	6.6
No WiFi or devices	64	36.8	51	41.8

Formative Assessment Learning				
Teacher education courses	131	77.5	91	77.8
Professional learning initiatives	88	52.1	70	59.8
Classroom experience	91	53.8	77	65.8
Self-study	75	44.4	57	48.7
Conversations with teacher peers	88	52.1	82	70.1
Conversations with administrators	38	22.5	34	29.1
Other	15	8.9	16	13.7

Note. Teaching division, school context, and formative assessment learning were multiple select responses, so percentages total greater than 100%.

6.1.1.2 Learning Intentions and Success Criteria

The Learning Intentions and Success Criteria category in the Teacher Pre- and Post-Surveys refers to how teachers communicate the knowledge, skills, and concepts students need to learn and how students will demonstrate their learning. Teachers were asked to rate their confidence with and the embeddedness of these five specific formative assessment practices in this category:

- Learning goals are stated using words that emphasize knowledge, skills, concepts and/or attitudes.
- Pupils are reminded about links between what they are learning and the overall learning goals.
- Child-friendly language is used to share learning goals with pupils.
- Success criteria related to learning goals are differentiated and shared with pupils.
- Pupils demonstrate that they are using learning goals and/or success criteria while they are working.

Pre- and Post-Teacher Survey results for teachers' confidence with and embeddedness of Learning Intentions and Success Criteria practices are presented in Table 5 and described below.

Table 5

Pre- and Post-Teacher Survey Mean Ratings for Confidence and Embeddedness of Formative Assessment Practices: Learning Intentions and Success Criteria (N = 172)

Items (Questions 1-2)	Pre-Survey Mean(SD)	Post-Survey Mean(SD)
Learning Intentions and Success Criteria (Confidence) Scale: Not At All Confident (1) to Highly Confident (5)		
Learning goals are stated using words that emphasise knowledge, skills, concepts and/or attitudes.	3.90(.94)	4.26(.69)
Pupils are reminded about links between what they are learning and the overall learning goals.	3.94(.86)	4.25(.78)
Child-friendly language is used to share learning goals with pupils.	4.22(.83)	4.44(.74)
Success criteria related to learning goals are differentiated and shared with pupils.	3.76(.95)	4.04(.90)
Pupils demonstrate that they are using learning goals and/or success criteria while they are working.	3.77(.93)	4.07(.83)
Overall	3.91(.70)	4.21(.65)*
Learning Intentions and Success Criteria (Embedded in Practice) Scale: Never (1) to Embedded/Happens 90% of the time (5)		
Learning goals are stated using words that emphasise knowledge, skills, concepts and/or attitudes.	3.88(.93)	4.10(.71)
Pupils are reminded about links between what they are learning and the overall learning goals.	3.88(.89)	4.16(.79)
Child-friendly language is used to share learning goals with pupils.	4.10(.92)	4.39(.73)
Success criteria related to learning goals are differentiated and shared with pupils.	3.63(1.03)	4.08(.90)
Pupils demonstrate that they are using learning goals and/or success criteria while they are working.	3.61(.94)	4.00(.81)
Overall	3.82(.78)	4.15(.64)*

Note. Pre-Survey n = 169-171; Post-Survey n = 119-121 (not all teachers responded to all surveys and items). The asterisk indicates that the difference in overall means is statistically significant ($p < .05$).

Learning Intentions and Success Criteria: Confidence

Teachers' confidence with each of the five formative assessment practices associated with Learning Intentions and Success Criteria was relatively high at the start of the project, with Teacher Pre-Survey means ranging from 3.76 (SD = .95) to 4.22 (SD = .83). Despite initially high confidence levels with Learning Intentions and Success Criteria, teachers' confidence increased across all five practices in this category by the end of the project, with Teacher Post-Survey means ranging from 4.04 (SD = .90) to 4.26 (SD = .69).

Teachers were most confident using child-friendly language to share learning goals with pupils in both the Teacher Pre- and Post-Surveys (M = 4.22, SD = .83 and M = 4.44, SD = .74, respectively). Notably, teachers gained the most confidence with stating learning goals using words that emphasize knowledge, skills, concepts, and/or attitudes (from M = 3.90, SD = .94 to M = 4.26, SD = .69) and reminding students about links between what they are learning and the overall learning goals (from M = 3.94, SD = .86 to M = 4.25, SD = .78).

An independent samples t-test (assuming unequal variances) was used to compare the overall mean ratings for teachers' confidence across the five formative assessment practices associated with Learning Intentions and Success Criteria in the Teacher Pre- and Post-Surveys. The mean rating for teachers' confidence with Learning Intentions and Success Criteria practices increased from 3.91 (SD = .70) in the Teacher Pre-Survey to 4.21 (SD = .65) in the Teacher Post-Survey; this difference was significant at $t(271) = -3.726, p < .001$.

Learning Intentions and Success Criteria: Embedded in Practice

At the start of the project, teachers reported relatively high levels of embeddedness in their practice for the five formative assessment practices associated with Learning Intentions and Success Criteria, with Teacher Pre-Survey means ranging from 3.61 (SD = .94) to 4.10 (SD = .92). Despite this initially high embeddedness of Learning Intentions and Success Criteria practices, teachers' embeddedness ratings increased across all five practices in this category by the end of the project, with Teacher Post-Survey means ranging from 4.00 (SD = .81) to 4.39 (SD = .73).

Teachers reported the highest levels of embeddedness for using child-friendly language to share learning goals with pupils in both the Teacher Pre- and Post-Surveys (M = 4.10, SD = .92 and M = 4.39, SD = .73, respectively). Notably, the greatest increases in embeddedness were associated with differentiating and sharing success criteria related to learning goals with students (from M = 3.63, SD = 1.03 to M = 4.08, SD = .90) and students demonstrating that they are using learning goals and/or success criteria while they are working (from M = 3.61, SD = .94 to M = 4.00, SD = .81).

An independent samples t-test (assuming unequal variances) was used to compare the overall mean ratings for teachers' embeddedness of the five formative assessment practices associated with Learning Intentions and Success Criteria in the Teacher Pre- and Post-Surveys. The mean rating for the teachers' embeddedness of Learning Intentions and Success Criteria practices increased from 3.82 (SD = .78) in the Teacher Pre-Survey to 4.15 (SD = .64) in the Teacher Post-Survey; this difference was significant at $t(285) = -3.893, p < .001$.

6.1.1.3 Questioning and Classroom Discussion

The Questioning and Classroom Discussion category in the Teacher Pre- and Post-Surveys refers to how teachers facilitate questioning and classroom discussion to deepen student learning and provide in-the-moment feedback for next steps. Teachers were asked to rate their confidence with and the embeddedness of these five specific formative assessment practices in this category:

- Assessment is used to facilitate classroom discussions.
- Questions are used to elicit pupils' prior knowledge on a topic.
- Pupils are able to share their questions during a lesson.
- Pupils' incorrect responses are used to guide teaching and learning.
- Pupils can explain to others what they are learning.

Pre- and Post- Teacher Survey results for their confidence with and embeddedness of Questioning and Classroom Discussion practices are presented in Table 6 and described below.

Table 6

Pre- and Post-Teacher Survey Mean Ratings for Confidence and Embeddedness of Formative Assessment Practices: Questioning and Classroom Discussion (N = 172)

Items (Questions 3-4)	Pre-Survey Mean(SD)	Post-Survey Mean(SD)
Questioning and Classroom Discussion (Confidence) Scale: Not At All Confident (1) to Highly Confident (5)		
Assessment is used to facilitate classroom discussions.	3.90(1.00)	4.13(.95)
Questions are used to elicit pupils' prior knowledge on a topic.	4.15(.84)	4.32(.78)
Pupils are able to share their questions during a lesson.	3.85(.99)	4.09(.96)
Pupils' incorrect responses are used to guide teaching and learning.	3.97(.94)	4.36(.76)
Pupils can explain to others what they are learning.	3.83(.88)	4.16(.84)
Overall	3.94(.67)	4.22(.64)*

Questioning and Classroom Discussion (Embedded in Practice) Scale: Never (1) to Embedded/Happens 90% of the time (5)		
Assessment is used to facilitate classroom discussions.	3.85(.99)	4.03(.99)
Questions are used to elicit pupils' prior knowledge on a topic.	4.03(.84)	4.26(.71)
Pupils are able to share their questions during a lesson.	3.61(1.05)	4.05(.95)
Pupils' incorrect responses are used to guide teaching and learning.	3.90(1.01)	4.27(.81)
Pupils can explain to others what they are learning.	3.75(.91)	4.00(.90)
Overall	3.83(.74)	4.13(.68)*

Note. Pre-Survey n = 169-172; Post-Survey n = 119-121 (not all teachers responded to all surveys and items). The asterisk indicates that the difference in overall means is statistically significant ($p < .05$).

Questioning and Classroom Discussion: Confidence

Teachers' confidence with each of the five formative assessment practices associated with Questioning and Classroom Discussion was relatively high at the start of the project, with Teacher Pre-Survey means ranging from 3.83 (SD = .88) to 4.15 (SD = .84). Despite initially high confidence with Questioning and Classroom Discussion, teachers' confidence increased across all five practices in this category by the end of the project, with Teacher Post-Survey means ranging from 4.09 (SD = .96) to 4.36 (SD = .76).

At the start of the project, teachers were most confident using questions to elicit students' prior knowledge on a topic (M = 4.15, SD = .84). By the end of the project, teachers were most confident using students' incorrect responses to guide teaching and learning (M = 4.36, SD = .76). The latter practice was also associated with the greatest increase in teachers' confidence from the Teacher Pre-Survey (M = 3.97, SD = .94), followed closely by an increase in teachers' confidence allowing pupils to explain to others what they are learning (from M = 3.83, SD = .88 to M = 4.16, SD = .84).

An independent samples t-test (assuming unequal variances) was used to compare the overall mean ratings for teachers' confidence across the five formative assessment practices associated with Questioning and Classroom Discussion in the Teacher Pre- and Post-Surveys. The mean rating for teachers' confidence with Questioning and Classroom Discussion practices increased from 3.94 (SD = .67) in the Teacher Pre-Survey to 4.22 (SD = .64) in the Teacher Post-Survey; this difference was significant at $t(265) = -3.588, p < .001$.

Questioning and Classroom Discussion: Embedded in Practice

At the start of the project, teachers reported relatively high levels of embeddedness in their practice for the five formative assessment practices associated with Questioning and Classroom Discussion, with Teacher Pre-Survey means ranging from 3.61 (SD = 1.05) to 4.03 (SD = .84). Despite this initially high embeddedness of Questioning and Classroom Discussion practices, teachers' embeddedness ratings increased across all five practices in this category by the end of the project, with Teacher Post-Survey means ranging from 4.00 (SD = .90) to 4.26 (SD = .71).

At the start of the project, teachers reported the highest levels of embeddedness for using questions to elicit students' prior knowledge on a topic (M = 4.03, SD = .84). By the end of the

project, teachers reported the highest level of embeddedness for using students' incorrect responses to guide teaching and learning ($M = 4.27$, $SD = .81$). These trends mirrored increases in teachers' confidence with Questioning and Classroom Discussion practices. The greatest increases in embeddedness were associated with allowing students to share their questions during a lesson (from $M = 3.61$, $SD = 1.05$ to $M = 4.05$, $SD = .95$) and using students' incorrect responses to guide teaching and learning (from $M = 3.90$, $SD = 1.01$ to $M = 4.27$, $SD = .81$).

An independent samples t-test (assuming unequal variances) was used to compare the overall mean ratings for teachers' embeddedness of the five formative assessment practices associated with Questioning and Classroom Discussion in the Teacher Pre- and Post-Surveys. The mean rating for the teachers' embeddedness of Questioning and Classroom Discussion practices increased from 3.83 ($SD = .74$) in the Teacher Pre-Teacher Post-Survey; this difference was significant at $t(272) = -3.588$, $p < .001$.

6.1.1.4 Feedback

The Feedback category in the Teacher Pre- and Post-Surveys refers to how teachers provide ongoing feedback to support students to progress from where their learning currently is to achieve their learning goals. Teachers were asked to rate their confidence with and the embeddedness of these five specific formative assessment practices in this category:

- Feedback to pupils is linked to the original learning goal(s) and success criteria.
- Assessment techniques are used during lessons to help the teacher determine how well pupils understand what is being taught.
- Diagnostic information from standardized tests is used to identify strengths and needs in teaching and learning.
- Pupils are involved in providing information about their learning.
- Pupils can explain to others what they are learning.

Pre- and Post- Teacher Survey results for their confidence with and embeddedness of Feedback practices are presented in Table 7 and described below.

Table 7

Pre- and Post-Teacher Survey Mean Ratings for Confidence and Embeddedness of Formative Assessment Practices: Feedback (N = 172)

Items (Questions 5-6)	Pre-Survey Mean(SD)	Post-Survey Mean(SD)
Feedback (Confidence) Scale: Not At All Confident (1) to Highly Confident (5)		
Feedback to pupils is linked to the original learning goal(s) and success criteria.	3.95(.83)	4.25(.72)
Assessment techniques are used during lessons to help the teacher determine how well pupils understand what is being taught.	4.03(.90)	4.32(.70)
Diagnostic information from standardised tests is used to identify strengths and needs in teaching and learning.	3.80(.97)	4.15(.71)
Pupils are involved in providing information about their learning.	3.81(1.01)	4.08(.79)
Pupils can explain to others what they are learning.	3.79(.92)	4.13(.83)
Overall	3.88(.75)	4.19(.60)*
Feedback (Embedded in Practice) Scale: Never (1) to Embedded/Happens 90% of the time (5)		
Feedback to pupils is linked to the original learning goal(s) and success criteria.	3.84(.93)	4.16(.72)
Assessment techniques are used during lessons to help the teacher determine how well pupils understand what is being taught.	4.02(.90)	4.29(.72)
Diagnostic information from standardised tests is used to identify strengths and needs in teaching and learning.	3.66(1.03)	4.02(.81)
Pupils are involved in providing information about their learning.	3.72(1.03)	4.06(.84)
Pupils can explain to others what they are learning.	3.75(.94)	3.99(.83)
Overall	3.80(.78)	4.10(.63)*

Note. Pre-Survey n = 170-172; Post-Survey n = 119-121 (not all teachers responded to all surveys and items). The asterisk indicates that the difference in overall means is statistically significant ($p < .05$).

Feedback: Confidence

Teachers' confidence with each of the five formative assessment practices associated with Feedback was relatively high at the start of the project, with Teacher Pre-Survey means ranging from 3.79 (SD = .92) to 4.03 (SD = .90). Despite initially high confidence with Feedback, teachers' confidence increased across all five practices in this category by the end of the project, with Teacher Post-Survey means ranging from 4.08 (SD = .79) to 4.32 (SD = .70).

In both the Teacher Pre- and Post-Surveys, teachers were most confident using assessment techniques during lessons to help them determine how well students understand what is being taught ($M = 4.03$, $SD = .90$ and $M = 4.32$, $SD = .70$, respectively). Notably, teachers gained the most confidence using diagnostic information from standardized tests to identify strengths and needs in teaching and learning (from $M = 3.80$, $SD = .97$ to $M = 4.15$, $SD = .71$) and allowing students to explain to others what they are learning (from $M = 3.79$, $SD = .92$ to $M = 4.13$, $SD = .83$).

An independent samples t-test (assuming unequal variances) was used to compare the overall mean ratings for teachers' confidence across the five formative assessment practices associated with Feedback in the Teacher Pre- and Post-Surveys. The mean rating for teachers' confidence with Feedback practices increased from 3.88 ($SD = .75$) in the Teacher Pre-Survey to 4.19 ($SD = .60$) in the Teacher Post-Survey; this difference was significant at $t(286) = -3.894$, $p < .001$.

Feedback: Embedded in Practice

At the start of the project, teachers reported relatively high levels of embeddedness in their practice for the five formative assessment practices associated with Feedback, with Teacher Pre-Survey means ranging from 3.66 ($SD = 1.03$) to 4.02 ($SD = .90$). Despite this initially high embeddedness of Feedback practices, teachers' embeddedness ratings increased across all five practices in this category by the end of the project, with Teacher Post-Survey means ranging from 3.99 ($SD = .83$) to 4.29 ($SD = .72$).

Teachers reported the highest levels of embeddedness for using assessment techniques during lessons to help them determine how well students understand what is being taught in both the Teacher Pre- and Post-Surveys ($M = 4.02$, $SD = .90$ and $M = 4.29$, $SD = .72$, respectively). The greatest increases in embeddedness were associated with using diagnostic information from standardized tests to identify strengths and needs in teaching and learning (from $M = 3.66$, $SD = 1.03$ to $M = 4.02$, $SD = .81$) and involving students in providing information about their learning (from $M = 3.72$, $SD = 1.03$ to $M = 4.06$, $SD = .84$).

An independent samples t-test (assuming unequal variances) was used to compare the overall mean ratings for teachers' embeddedness of the five formative assessment practices associated with Feedback in the Teacher Pre- and Post-Surveys. The mean rating for the teachers' embeddedness of Feedback practices increased from 3.80 ($SD = .78$) in the Teacher Pre-Survey to 4.10 ($SD = .63$) in the Teacher Post-Survey; this difference was significant at $t(285) = -3.667$, $p < .001$.

6.1.1.5 Self- and Peer-Assessment

The Self- and Peer-Assessment category in the Teacher Pre- and Post-Surveys refers to how teachers foster students' self- and peer-assessment to promote community learning, student ownership in learning, and learner agency. Teachers were asked to rate their confidence with and the embeddedness of these five specific formative assessment practices in this category:

- Pupils are given an opportunity to indicate how challenging they anticipate the learning will be at the beginning of a lesson or activity.
- Pupils are encouraged to record their progress.
- Pupils are encouraged to use a range of assessment techniques to review their own work.

- A visual record of pupils' progress is maintained to track and celebrate pupils' learning and show areas of/for development.
- Time is set aside during parent/guardian teacher meetings for pupils to be involved in reporting on some aspects of their learning.

Pre- and Post- Teacher Survey results for their confidence with and embeddedness of Self- and Peer-Assessment practices are presented in Table 8 and described below.

Table 8

Pre- and Post-Teacher Survey Mean Ratings for Confidence and Embeddedness of Formative Assessment Practices: Self- and Peer-Assessment (N = 172)

Items (Questions 7-8)	Pre-Survey Mean(SD)	Post-Survey Mean(SD)
Self- and Peer-Assessment (Confidence) Scale: Not At All Confident (1) to Highly Confident (5)		
Pupils are given an opportunity to indicate how challenging they anticipate the learning will be at the beginning of a lesson or activity.	3.31(1.04)	3.80(1.06)
Pupils are encouraged to record their progress.	3.67(.99)	3.91(.90)
Pupils are encouraged to use a range of assessment techniques to review their own work.	3.53(.95)	4.02(.95)
A visual record of pupils' progress is maintained to track and celebrate pupils' learning and show areas of/for development.	3.62(1.07)	3.93(1.00)
Time is set aside during parent/guardian teacher meetings for pupils to be involved in reporting on some aspects of their learning.	3.17(1.24)	3.46(1.19)
Overall	3.46(.82)	3.83(.81)*
Self- and Peer-Assessment (Embedded in Practice) Scale: Never (1) to Embedded/Happens 90% of the time (5)		
Pupils are given an opportunity to indicate how challenging they anticipate the learning will be at the beginning of a lesson or activity.	3.14(1.12)	3.67(1.06)
Pupils are encouraged to record their progress.	3.48(1.11)	3.88(.89)
Pupils are encouraged to use a range of assessment techniques to review their own work.	3.46(1.04)	3.85(1.00)
A visual record of pupils' progress is maintained to track and celebrate pupils' learning and show areas of/for development.	3.51(1.16)	3.82(1.03)
Time is set aside during parent/guardian teacher meetings for pupils to be involved in reporting on some aspects of their learning.	3.05(1.29)	3.39(1.23)
Overall	3.33(.90)	3.72(.84)*

Note. Pre-Survey n = 169-171; Post-Survey n = 120-121 (not all teachers responded to all surveys and items). The asterisk indicates that the difference in overall means is statistically significant ($p < .05$).

Self- and Peer-Assessment: Confidence

Teachers' confidence with each of the five formative assessment practices associated with Self- and Peer-Assessment was lower than the previous three categories, with Teacher Pre-Survey means ranging from 3.17 (SD = 1.24) to 3.67 (SD = .99). However, as in the other categories, teachers' confidence increased across all five practices in this category by the end of the project, with Teacher Post-Survey means ranging from 3.46 (SD = 1.19) to 4.02 (SD = .95).

At the start of the project, teachers were most confident encouraging students to record their progress (M = 3.67, SD = .99). By the end of the project, teachers were most confident encouraging students to use a range of assessment techniques to review their own work (M = 4.02, SD = .95). Teachers gained the most confidence giving students an opportunity to indicate how challenging they anticipate the learning will be at the beginning of a lesson or activity (from M = 3.31, SD = 1.04 to M = 3.80, SD = 1.06) and encouraging students to record their progress (from M = 3.53, SD = .95 to M = 4.02, SD = .95).

An independent samples t-test (assuming unequal variances) was used to compare the overall mean ratings for teachers' confidence across the five formative assessment practices associated with Self- and Peer-Assessment in the Teacher Pre- and Post-Surveys. The mean rating for teachers' confidence with Self- and Peer-Assessment practices increased from 3.46 (SD = .82) in the Teacher Pre-Survey to 3.83 (SD = .81) in the Teacher Post-Survey; this difference was significant $t(261) = -3.794, p < .001$.

Self- and Peer-Assessment: Embedded in Practice

Similar to confidence ratings, teachers reported lower levels of embeddedness in their practice for the five formative assessment practices associated with Self- and Peer-Assessment as compared to the other three categories, with Teacher Pre-Survey means ranging from 3.05 (SD = 1.29) to 3.51 (SD = 1.16). By the end of the project, teachers' embeddedness ratings increased across all five practices in this category, with Teacher Post-Survey means ranging from 3.39 (SD = 1.23) to 3.88 (SD = .89).

At the start of the project, teachers reported the highest levels of embeddedness for maintaining a visual record of students' progress to track and celebrate students' learning and show areas of/for development (M = 3.51, SD = 1.16). By the end of the project, teachers reported the highest level of embeddedness for encouraging students to record their progress (M = 3.88, SD = .89). As with teachers' confidence ratings for Self- and Peer-Assessment practices, the greatest increases in embeddedness were associated with giving students an opportunity to indicate how challenging they anticipate the learning will be at the beginning of a lesson or activity (from M = 3.14, SD = 1.12 to M = 3.67, SD = 1.06) and encouraging students to record their progress (from M = 3.48, SD = 1.11 to M = 3.88, SD = .89).

An independent samples t-test (assuming unequal variances) was used to compare the overall mean ratings for teachers' embeddedness of the five formative assessment practices associated with Self- and Peer-Assessment in the Teacher Pre- and Post-Surveys. The mean rating for the teachers' embeddedness of Self- and Peer-Assessment practices increased from 3.33 (SD = .90) in the Teacher Pre-Survey to 3.72 (SD = .84) in the Teacher Post-Survey; this difference was significant at $t(268) = -3.822, p < .001$.

6.1.1.6 Summary of Changes in Teachers' Formative Assessment Practices

Teacher Pre- and Post-Survey results indicate that teachers were relatively confident with formative assessment practices associated with Learning Intentions and Success Criteria, Questioning and Classroom Discussion, and Feedback at the start of the project, and slightly less confident with Self- and Peer-Assessment practices. Similarly, teachers reported relatively high levels of embeddedness for formative assessment practices associated with Learning Intentions and Success Criteria, Questioning and Classroom Discussion, and Feedback at the start of the project, and slightly lower embeddedness for Self- and Peer-Assessment practices. Despite high initial levels of confidence and embeddedness for each formative assessment practice in the survey (20 practices total; 4 categories, 5 practices per category), teachers' reported confidence and embeddedness for each practice increased by the end of the project. Moreover, increases in the overall means for each formative assessment category—Learning Intentions and Success Criteria, Questioning and Classroom Discussion, Feedback, and Self- and Peer-Assessment—were statistically significant.

6.1.2 Teachers' Implementation of Formative Assessment Practices

This section elaborates on teachers' implementation of formative assessment practices, providing examples of teachers' formative assessment goals and practices and how these practices impacted teaching and learning in classrooms. Data sources for this section include the Teacher Pre-Survey open-response item, Teacher Codification Framework Questionnaire, and Local Facilitator Questionnaire. Appendix B provides a summary of promising formative assessment practices teachers used in the project and the observed benefits for students and teachers. In addition, Appendix C includes Country Case Study reports that provide additional promising formative assessment practices used by teachers in participating countries.

6.1.2.1 Teachers' Formative Assessment Goals

At the start of the project, teachers shared various professional learning goals related to formative assessment. They most frequently stated wanting to improve their formative assessment knowledge and practice, use formative assessment to better support students, and enhance student outcomes through formative assessment. Some teachers also set goals to increase collaboration with colleagues, reflect on their teaching and assessment practices, improve teacher leadership, and enhance student autonomy.

Local facilitators elaborated that teachers were unsure of what to expect when they began the T3LFA project and had diverse professional learning goals rooted in their individual and contextual priorities. They observed that most teachers wanted to focus on students' holistic development of knowledge, understanding, skills, and values, using assessment to support learning over grading. Many teachers prioritized selecting formative assessment strategies that accounted for student diversity and allowed them to tailor their instructional strategies to students' needs. According to facilitators, teachers wanted to use formative assessment to effectively address learning gaps and provide more frequent quality feedback to students. Facilitators also reported that teachers wanted to increase their students' engagement and agency in the learning process by creating a more interactive classroom environment. In

addition to student-centred goals, facilitators noted that teachers had professional learning goals for themselves that included developing new formative assessment practices, acquiring new knowledge about assessment, becoming more reflective in their teaching approaches, and improving communication about student learning.

6.1.2.2 Teachers' Use of Promising Formative Assessment Practices

In the Teacher Codification Framework Questionnaire, teachers described their use of promising formative assessment practices in the project, according to the four research-based formative assessment categories: Learning Intentions and Success Criteria, Questioning and Classroom Discussion, Feedback, and Self- and Peer-Assessment (Lysaght et al., 2017). Teachers most frequently shared the use of Self- and Peer-Assessment practices, followed by Questioning and Classroom Discussion practices, Feedback practices, and Learning Intentions and Success Criteria practices. These promising formative assessment practices and their observed benefits for students and teachers are presented in each category below, along with two spotlights to illustrate the variation of formative assessment practices used by teachers across participating countries. While promising practices are reported under their primary formative assessment category distinction, most practices reflect multiple categories (e.g., practices categorized as Self- and Peer-Assessment also supported Feedback in relation to Learning Intentions and Success Criteria), highlighting the interrelated and complementary nature of formative assessment practices.

Each of the eight spotlights included below demonstrates how formative assessment supported teaching and learning, and technology played a central role in two spotlights. These spotlights were selected because they reflect the research-based essential features of contemporary formative assessment practices, as outlined in our [Literature Review](#) (p. 29), which:

- enables learners to take ownership of their learning and understand what success looks like, which motivates learning;
- encourages student agency in their learning through engagement in self- and peer-assessment processes; and
- accelerates learning by providing targeted feedback to close the gap between where learners are in their learning, where they need to go, and how best to get there.

It is important to note that there are no “best” or “right” ways to implement formative assessment to support teaching and learning. The spotlights are intended to show variations of implementation; they are not intended to indicate that these practices are the only method for implementing each strategy. In other words, the practices presented here are a selection of formative assessment strategies, with recognition that there are a variety of approaches to the implementation of formative assessment across contexts, disciplines, and education levels.

In addition, Appendix B provides a summary of promising formative assessment practices teachers used in the project and the observed benefits for students and teachers, and Appendix C includes Country Case Study reports that provide additional promising formative assessment practices used by teachers in participating countries.

Self- and Peer-Assessment Practices

Within the Self- and Peer-Assessment category, teachers most often used self-assessment strategies or strategies that combined self- and peer-assessment strategies, rarely using peer-assessment strategies in isolation. Several teachers mentioned self-reflection journals as a promising practice to support students' self-assessment. These journals allowed students to document and self-assess their learning of core concepts over time, informing and enhancing students' ongoing learning efforts and helping teachers generate formative feedback for students. Other teachers used the combined self- and peer-assessment strategy of co-developing rubrics to enable self- and peer-assessment. Co-developing rubrics (i.e., criteria charts of levelled performance indicators) was a promising practice that engaged students in actively thinking about learning intentions and success criteria for a task, helped students provide specific feedback on learning through self- and peer-assessment and reduced students' reliance on teacher feedback to support learning.

Table 9 details promising practices in the Self-and Peer-Assessment category with observed benefits for students and teachers, followed by spotlights on specific Self-and Peer-Assessment strategies used in Côte d'Ivoire and South Korea.

Table 9

Promising Formative Assessment Practices: Self- and Peer-Assessment

Self- and Peer-Assessment Teachers foster students' self- and peer-assessment to promote community learning, student ownership in learning, and learner agency.			
Promising Formative Assessment Practices	Observed Benefits for Students	Observed Benefits for Teachers	Countries that Reported Using the Practice
Collective corrections: students share their writing or read for the class and peers and the teacher provide feedback or ask questions	Activating student voice; enhanced engagement and participation; improved reading and writing performance; increased student questioning leading to clarifications and consolidation; enhanced communication and critical thinking skills; students could make corrections immediately; encouraged collaborative learning; enhanced listening and comprehension skills	Reduced teacher responsibility in assessment and learning processes; teacher (and peers) could immediately provide feedback and intervene	Brazil, Ghana, Malaysia, Uruguay
Ongoing self-reflection journals	Students used notebooks to document/track their learning about core concepts over time; enabled students to generate and share questions with each other and discuss answers	Provided records of learning which teachers could use to generate formative feedback	Brazil, South Korea, Switzerland
Process-oriented peer-assessment: students correct or review each other's work and discuss their process/ approach using criteria	Increased ability to articulate their thinking; enhanced performance on learning tasks; refined communication; clarified understandings; enhanced metacognition; enhanced logical reasoning	Made visible students' reasoning and learning processes to support teacher interventions	Brazil, Côte d'Ivoire, Ghana, South Korea, Uruguay

Encouraging explicit student self-assessment using learning criteria	Students saw their mistakes and progress; increased ownership of the learning process; students reflected on their behaviour and conduct in schools	Fostered more feedback in the classroom	Brazil, Uruguay
Co-developing mark schemes or rubrics for self- and peer-assessment with students	Improved achievement; greater comfort with assessing and reflecting on their own learning; students thought more deeply about learning intentions and success criteria; enhanced participation and understanding of what they need to do; students provided specific self-feedback	Activated multiple sources of feedback for students, reducing their reliance on teacher feedback	Ghana, South Korea, Switzerland, Uruguay
Visual indicators to signal assessment of understanding (e.g., traffic light card, coloured cups)	Enhanced critical thinking; more sophisticated self-assessment	Helped teachers identify students in need of assistance in-the-moment; students took ownership of their learning and became more self-directed, reducing reliance on the teacher	South Korea, Uruguay

Spotlight on Self- and Peer-Assessment Practices

Process-Oriented Peer-Assessment (Côte d'Ivoire): A teacher in Côte d'Ivoire supported students in correcting each other's math quizzes. The teacher encouraged the students to talk through how they arrived at each response, explaining their process to their peers. Instead of focusing the students on the correct answer, the teacher wanted the students to share their thinking with each other and to learn from their peers' approaches to each problem. The teacher shared this peer-assessment practice with another teacher who also tried it in their class. Both noticed increased student engagement in math, as well as an improvement in the quality of students' work.

Online Peer-Assessment (South Korea): A teacher in South Korea used Google Classroom to facilitate online peer feedback. The online classroom incorporated digital tools, such as ChatGPT, vocabulary learning apps, and translation software, to help students develop their English reading and writing. Students were encouraged to upload their work to Google Classroom to document their learning and elicit feedback from peers. Students were invited to log into the online classroom to review their peers' work and progress and provide feedback. This intervention provided students with efficient access to frequent feedback from many sources (i.e., peers) and saved the teacher time and resources required to copy each student's work.

Questioning and Classroom Discussion Practices

In the Questioning and Classroom Discussion category, teachers used a variety of promising practices, including think-pair-share, Know Wonder Learning (KWL) charts, discussion circles, class debates, and individual student conferences. Collectively, these practices helped students become more actively engaged in learning activities, promoted collaborative classroom cultures, and supported student agency in the learning process. For teachers, these strategies made student thinking visible, including prior knowledge and higher order thinking skills, thus informing their instruction and feedback to support students' learning progress. For students, these strategies allowed them to build trusting relationships in the classroom, support each other's learning, enhance their self-confidence and participation, and increase their curiosity and reflection.

Table 10 details promising practices in the Questioning and Classroom Discussion category with observed benefits for students and teachers, followed by spotlights on specific Questioning and Classroom Discussion strategies used in Uruguay and Brazil.

Table 10

Promising Formative Assessment Practices: Questioning and Classroom Discussion

Questioning and Classroom Discussion Teachers facilitate questioning and classroom discussion to deepen student learning and provide in-the-moment feedback for next steps.			
Promising Formative Assessment Practices	Observed Benefits for Students	Observed Benefits for Teachers	Countries that Reported Using the Practice
Think-pair-share	Fostered greater appreciation for the learning that their peers can support; increased interest in class topics; deeper reflection on learning intentions; more democratic teaching environment	Supported valuable insights for enhanced teaching and learning	Ghana, Uruguay
Individual conferences with students before meetings with parents	Students negotiated interpretations of teachers' assessment evidence; enhanced self-advocacy and professionalism; received more individualized feedback and tailored questions	Helped teachers gauge student understandings; enhanced student trust	Ghana, South Korea, Switzerland
Know Wonder Learn (KWL) charts	Supported student inquiry; enhanced curiosity and engagement	Made students' prior knowledge visible; catalyzed rich discussions; generated student questions to guide teacher support	South Korea, Uruguay
Discussion circles with guided questioning on books or topics	Enhanced interest in reading and classroom topics; learning and progress were made visible; increased confidence and self-esteem; fostered student participation	Facilitated class discussion	Brazil, Uruguay
Class debates about readings	Increased students' argumentative capacity	Enhanced and made more visible students' reasoning and higher order thinking skills	Brazil

Spotlight on Questioning and Classroom Discussion Practices

Think-Pair-Share (Uruguay): A teacher in Uruguay used the think-pair-share technique to facilitate class discussion and formative assessment. When the teacher posed challenging, open questions to the students, they asked the students to spend some time thinking about possible answers and then share their answer with a peer. After discussing with a peer, the students were invited to share what they had discussed with the whole group, pooling their collective understandings. Importantly, the teacher also asked the students to share the process of how they came up with their answers. This approach activated students as sources of learning for each other and engaged students in metacognition.

Group Reading (Brazil): With the aim of improving students' reading fluency, one teacher in Brazil used a variety of formative assessment strategies, including group reading. Students took turns reading aloud to the group, a process which facilitated discussion of reading strategies and in-the-moment teacher and peer feedback. The teacher noticed that this practice enhanced students' reading skills while also increasing companionship and mutual support among the students. The teacher also observed an increase in students' confidence in the classroom.

Feedback Practices

Within the Feedback category, teachers commonly gave students individual feedback and sometimes gave a combination of individual and group feedback. Many teachers shared the promising practice of providing students with descriptive, formative feedback on their learning progress in relation to learning intentions and success criteria. This descriptive feedback made learning visible for both teachers and students, elucidating where students were at in relation to learning intentions and where they needed to go next. Teachers then used the feedback to inform their next steps in teaching, and students used feedback to become more self-regulated in their learning. In some classrooms, teachers also used technology (e.g., Teams, WhatsApp, or Google Classroom) to provide students with descriptive, formative feedback on their learning. Technology-enabled feedback from teachers supported the documentation of students' learning over time, helped teachers share relevant digital learning resources with students, promoted enhanced student self-assessment, and facilitated communication about learning progress among teachers, students, and parents/caregivers.

Table 11 details promising practices in the Feedback category with observed benefits for students and teachers, followed by spotlights on specific Feedback strategies used in Switzerland and Uruguay.

Table 11
Promising Formative Assessment Practices: Feedback

Feedback Teachers provide ongoing feedback to close the gap between where the student is and their learning goals.			
Promising Formative Assessment Practices	Observed Benefits for Students	Observed Benefits for Teachers	Countries that Reported Using the Practice
Collaborative feedback / ongoing learning dialogues: teachers cultivate ongoing dialogues about learning, encouraging questioning and peer and self-feedback	Students saw learning as a collaborative process; greater engagement in learning; stimulated deeper cognitive processing; contributed to a supportive and collaborative classroom culture	Efficient and timely delivery of feedback; observing and engaging in dialogues guided teaching; increased opportunities for teachers to ask questions that provoked learner-directed assessment	Malaysia, South Korea, Switzerland, Uruguay
The teacher provides descriptive feedback	Helped make student learning and progress visible to students; highlighted learning intentions	Helped make student learning and progress visible to teachers	Brazil, Côte d'Ivoire, Malaysia
Feedback-supporting technologies (e.g., Teams, WhatsApp, Google Classroom)	Students received feedback in a new medium; greater access to feedback and support from teachers and peers; self-documentation tools for students to foster peer and self-assessment (e.g., tables in Excel or Microsoft Word); students provided more accurate self-feedback and reports of their progress to parents; enhanced self-regulated learning	Teachers could share resources with students, especially when physical resources were limited; enhanced visibility for parents in students' work and feedback, catalyzed communication between teachers and parents; supported teachers' documentation of student learning (e.g., tables in Excel, reports on Canva)	Brazil, South Korea, Switzerland
Time for revision/ rewriting: dedicated time for students to revise work based on teacher, peer, or self-feedback	Enhanced sense of autonomy; enhanced critical thinking and self-assessment skills	Made students' learning processes and progress visible to teachers	Uruguay

Spotlight on Feedback Practices

Virtual Environments for Feedback (Switzerland): To develop their formative assessment practice, a teacher in Switzerland constructed a digital learning environment for their class. The digital environment included learning content across a range of subjects, including German, math, and physical education. The overall theme of the digital environment was “My Development,” emphasizing the purpose of the environment to document students’ learning journeys. Moreover, students were given agency to select which learning tasks to do and create and revise learning plans based on their progress. The environment facilitated feedback between the teacher and the students and allowed students to share feedback with their parents if they wished to. The teacher also reported that the environment cultivated student self-assessment and self-regulated learning, while at the same time allowing them to monitor the students’ progress.

Revision Time (Uruguay): A teacher in Uruguay aimed to support students’ use of feedback by providing explicit time and support for students to revise work. Across various subjects, the teacher asked students to share their feedback with the teacher or peers and then invited them to improve their work based on the feedback. The teacher also provided revision time when the students had self-generated feedback, reflecting on questions such as, “What could I have done to improve this work?” and then producing something new or complimentary to the initial work. In an example from a writing task, students wrote a draft of an autobiography, self-assessed using a guide, engaged in individual re-writing, received and shared feedback with a peer, and then engaged in further re-writing to produce a final draft. The teacher noted a key benefit of this practice was that students gradually took on a more active role in their learning.

Learning Intentions and Success Criteria Practices

In the Learning Intentions and Success Criteria category, teachers used the promising practices of rubrics, checklists, and entry/exit tickets to support teaching and learning. Analytic rubrics supported teacher-, peer-, or self-assessment of students’ learning in relation to learning intentions and success criteria. Some teachers co-created analytic rubrics with students to enhance students’ understanding of success criteria and support their engagement in self- and peer-assessment activities. Teachers also described entry/exit tickets as an efficient assessment method to make student learning visible, monitor students’ learning progress in relation to learning intentions and success criteria, inform teacher instruction and feedback, and enhance students’ confidence, self-assessment, and metacognition.

Table 12 details promising practices in the Learning Intentions and Success Criteria category with observed benefits for students and teachers, followed by spotlights on specific Learning Intentions and Success Criteria strategies used in Malaysia and Ghana.

Table 12

Promising Formative Assessment Practices: Learning Intentions and Success Criteria

Learning Intentions and Success Criteria Teachers communicate the knowledge, skills, and concepts students need to learn and how students will demonstrate their learning.			
Promising Formative Assessment Practices	Observed Benefits for Students	Observed Benefits for Teachers	Countries that Reported Using the Practice
Observation behaviour guides and checklists	Success criteria were visible to students	Enhanced assessment reliability	Brazil, Ghana, South Korea

Exit and entry tickets	Accelerated student learning; students practiced self-assessing; enhanced metacognition; made student progress within a lesson visible; increased engagement in writing processes; enhanced confidence and motivation to learn; students internalized key guiding questions	Helped teachers monitor student understanding and achieve learning intentions; provided an efficient assessment method; provided feedback to the teacher; guided teaching and learning	Malaysia, South Korea
Differentiated analytic rubrics	Self-assessment was easier for students and tailored to their needs	Facilitated efficient and timely student self-feedback and peer feedback	South Korea, Switzerland
Rubric co-construction with students	Enhanced students' understanding of success criteria; facilitated student self-reflection	Provided students with tools to self- and peer-assess, helping teachers facilitate self- and peer-assessment; helped teachers engage student voice in assessment	Uruguay

Spotlight on Learning Intentions and Success Criteria Practices

Entrance and Exit Tickets (Malaysia): To help students understand learning intentions and success criteria, one teacher in Malaysia used a combination of entrance and exit tickets in each lesson throughout a writing unit. Entrance tickets asked students to respond to questions and demonstrate their writing knowledge and skills, allowing the teacher to support students' strengths and areas for improvement during the lesson. Exit tickets, which students completed at the end of the lesson, primarily invited students to reflect on how they felt the lesson went, engaging a metacognitive assessment practice. The teacher used these exit tickets to plan the next lesson and students could better understand what pedagogies and learning strategies best supported their learning. The teacher believed that the combination of entrance and exit tickets increased students' interest in writing and their motivation to improve their writing skills. Additionally, the frequent opportunities for reflection supported their metacognition, a central skill for writing. For the teacher, entrance and exit slips created new opportunities for feedback, both for the students' learning and the teachers' pedagogical approaches.

Observation Records (Ghana): To advance their formative assessment practice, one teacher in Ghana developed an observation tool for practical, experimental science lessons. The tool allowed the teacher to record qualitative observations during practical lessons on their students' achievement in relation to the learning intentions and success criteria. Concurrently, the teacher provided students with self-observation sheets inviting them to explain why they felt an experiment was successful. The teacher shared the approach with other teachers who adopted it. These teachers noticed increased student engagement in science, with students who had previously been quiet presenting their findings with other students.

Pedagogical Approaches. Along with practices associated with the four formative assessment categories, teachers also described using pedagogical approaches that did not explicitly incorporate formative assessment but had the potential to. Teachers most frequently shared examples of using group work in the classroom. In these examples, students engaged in learning tasks with their peers instead of individually but did not explicitly use formative assessment practices to support their learning (e.g., students did not explain their own learning to group members or provide feedback to peers based on learning intentions and success criteria). In a few cases, teachers mentioned scaffolding learning but did not explicitly use formative assessment to inform this scaffolding (e.g., teachers did not use student self-assessments, class discussions, or individual student conferences).

6.1.2.3 Teachers' Reasons for Using Formative Assessment Practices

When asked why they chose to implement the formative assessment practices they did, teachers most frequently shared student-centred reasons, notably improving student learning and enhancing learner agency. Teachers also mentioned wanting to enhance students' class participation, develop students' soft skills, and increase students' motivation, reflection, and confidence in the learning process. A few teachers specified choosing formative assessment practices the research suggested were effective in having immediate positive impacts on students' learning.

While students were the primary influence on teachers' selection of formative assessment practices, teachers also chose to implement formative assessment practices to support their teaching practice. Teachers tried formative assessment practices to help them adjust their teaching practices, be responsive to students' learning needs, clarify learning goals for students, and monitor students' learning. A few teachers specified choosing formative assessment practices that were easy to use or had multiple uses, supported their observations of students' learning, enabled feedback processes, and helped them scaffold learning for students. Teachers also considered classroom culture when selecting formative assessment practices, striving to promote collective learning and enhance relationships between teachers and students.

Local facilitators confirmed that teachers used a range of formative assessment practices during the project to support students' learning. Overall, facilitators shared that teachers emphasized using assessment to inform responsive instruction based on students' strengths and needs and favoured formative assessment approaches that helped them monitor students' learning and provide regular feedback. Teachers also used formative assessment strategies that increased students' engagement and ownership in their learning and fostered safe learning environments for students to express a lack of understanding and accept feedback.

6.1.3 Summary of Benefits of Teachers' Formative Assessment Practices

Teachers reported a range of benefits associated with using the formative assessment practices that they implemented within this project. Benefits related to student learning and performance, (b) student confidence and self-esteem, (c) student metacognitive development, and (d) teacher knowledge of assessment, criteria, and feedback processes. A majority of teachers reported benefits to students' learning, improved student performance, and enhanced learner agency. In addition, teachers shared that using formative assessment practices increased students' confidence and self-esteem in learning. Through formative assessment, students also developed metacognition, as observed through greater awareness of their own knowledge, improved self-reflection, and student-led remediation. In some cases, formative assessment practices enhanced student participation and motivation in class, with greater levels of student communication and socialization and some instances of student leadership.

Along with these benefits for students, teachers also shared positive impacts of formative assessment on their teaching practice. Teachers most frequently reported that formative assessment supported criteria-driven learning, increased their knowledge of students' performance levels, enabled responsive instruction adapted to students' strengths and needs,

and informed constructive feedback to move students' learning forward. In addition to teacher-related benefits, teachers shared that formative assessment promoted positive changes in the classroom culture, with more frequent collective learning, the emergence of improvement-oriented mindsets (i.e., growth mindsets), and enhanced relationships between teachers and students.

Local facilitators also identified several positive impacts of teachers' formative assessment practices on students, mirroring the benefits of formative assessment practices shared by teachers. Facilitators reported improved student learning and performance, including increased student engagement, motivation, and confidence; enhanced student agency and autonomy; greater student metacognition; and increased student comfort with the use of learning gaps and mistakes as opportunities for learning and growth. According to facilitators, formative assessment practices also contributed to a more positive and supportive learning environment, within a more student-driven, collaborative learning culture.

6.2 Professional Learning and Development Processes to Support Teachers' Formative Assessment Practices

This section reports on professional learning processes that supported teachers' formative assessment learning and practices in response to research question 2 and its associated sub-questions.

2. In the Teacher-Led Learning Circles, what professional learning processes supported teachers' formative assessment practices?

- a) How were teachers supported in developing and implementing formative assessment practices? (e.g., within the Learning Circles, within their schools and classrooms)
- b) What helped or hindered effective implementation of formative assessment practices?

The data sources used to inform this section include project participants' responses to the Teacher Pre- and Post-Survey, Teacher Codification Framework Questionnaire, Local Facilitator Questionnaire, Local Union Representative Questionnaire, and National Researcher Questionnaire as well as National Report Part 2: Final Country Profile from each participating country.

6.2.1 Professional Learning and Development Supports

The following sections present teacher, local facilitator, local union representative, and national researcher perspectives on professional learning supports for teachers' engagement in the project and learning about formative assessment practices. Local facilitators also shared the professional supports that helped them facilitate participating teachers' professional development.

6.2.1.1 Supports for Teachers' Engagement in Professional Learning and Development

Teacher Pre- and Post-Survey results highlighted teachers' professional learning and development experiences before and after the T3LFA project. In the surveys, teachers were asked to rate the extent to which their professional development experiences reflected research-based characteristics of effective professional learning and development identified in our [Literature Review](#) (Campbell et al., 2022) and detailed in Chapter 2:

- Linked to my professional priorities to support my students' learning.
- Differentiated to include consideration of my professional learning and development experiences and the context I am working in.
- Provided useful, relevant content linked to my professional learning and development priorities.
- Involved inquiry and collaborative professional learning to develop my professional expertise.
- Provided funding, time and expert resources to enable me to participate in professional learning and development.
- Supported by school leaders.

Pre- and Post-Teacher Survey results for teachers' ratings of their professional learning and development experiences are presented in Table 13 and described below.

Table 13

Pre- and Post-Teacher Survey Mean Ratings for Qualities of Previous Professional Learning and Development Experience

Items (Question 9-Pre vs. Question 10-Post) Scale: Not At All (1) to Highly (5)	Pre-Survey Mean(SD)	Post-Survey Mean(SD)
Was linked to my professional priorities to support my students' learning.	4.29(.85)	4.49(.76)*
Was differentiated to include consideration of my professional learning and development experiences and the context I am working in.	3.80(.99)	4.06(.94)*
Provided useful, relevant content linked to my professional learning and development priorities.	4.04(.95)	4.24(.83)
Involved inquiry and collaborative professional learning to develop my professional expertise.	3.96(1.00)	4.16(.99)
Provided funding, time and expert resources to enable me to participate in professional learning and development.	3.45(1.26)	3.66(1.29)
Was supported by school leaders.	3.60(1.24)	3.58(1.38)

Note. Pre-Survey n = 165-167; Post-Survey n = 119-121. The asterisk indicates that the difference in means is statistically significant ($p < .05$).

Teachers' ratings of the extent to which their professional learning experiences reflected research-based characteristics of effective professional learning and development were above average at the beginning of the project, with Teacher Pre-Survey means ranging from 3.45 (SD = 1.26) to 4.29 (SD = .85). By the end of the project, teachers' ratings for five of the six characteristics of effective professional learning and development had increased; however, "was supported by school leaders" decreased slightly from 3.60 (SD = 1.24) to 3.58 (SD = 1.38). These trends indicate that teachers' previous professional learning and development experiences were generally aligned with the six identified effective features, but the Teacher-Led Learning Circles model provided an enhanced experience for teachers. However, standard deviations for Pre- and Post-Survey results were high, ranging from .76 to 1.38, highlighting noteworthy variance in teachers' professional learning experiences before and after the project.

An independent samples t-test (assuming unequal variances) was used to compare the mean ratings for all six characteristics from the pre- to Post-Survey. Two increases were significant. First, "was linked to my professional priorities to support my students' learning" increased from 4.29 (SD = .85) to 4.49 (SD = .76); this difference was significant at $t(267) = -2.069$, $p = .039$. Second, "was differentiated to include consideration of my professional learning and development experiences and the context I am working in" increased from 3.80 (SD = .99) to 4.06 (SD = .94); this difference was significant at $t(255) = -2.231$, $p = .027$. These significant increases indicate that the Teacher-Led Learning Circles model provided teachers with professional learning and development that was more connected to their professional priorities in support of students' learning and more differentiated for their needs and context than their previous professional learning experiences.

Local facilitators, local union representatives, and national researchers shared that Teacher-Led Learning Circles supported teachers' professional learning and development by allowing them regular opportunities to learn collaboratively within the guiding structure of the model. The Circles provided a safe space for teachers to create meaningful bonds and build trust over time. As facilitators and teachers built trusting relationships with each other and developed their collective knowledge about formative assessment practices, discussions within the Circles became richer and more open. Furthermore, facilitators noticed the emergence of leadership among teacher participants as teachers' formative assessment knowledge and confidence increased over time. Local union representatives and national researchers also emphasized the central role of facilitators in teachers' professional learning. Facilitators provided essential guidance and support for all Learning Circle activities, fostering teacher learning and reflection while also creating a safe space for teachers to share their teaching and assessment dilemmas and challenges and make decisions about next steps.

6.2.1.2 Supports for Teachers' Use of Formative Assessment Practices

In the Teacher Post-Survey, teachers reported that the project supported their professional learning goals related to formative assessment and fostered teacher leadership. They emphasized that collaborating with Learning Circle colleagues was crucial in helping them learn about and implement formative assessment. Over time, this professional collaboration increased teachers' confidence in using formative assessment practices in their classrooms, leading to improved student learning and achievement. As teachers observed the teaching and learning benefits of formative assessment, some of them also gained confidence in taking on leadership roles in their schools. Specifically, they began discussing formative assessment practices and benefits with colleagues and school leaders who were not involved in the project, and actively helped to spread formative assessment practices across classrooms.

Local facilitators asserted that teachers' access to the structured and supportive Learning Circles environment was critical in developing their confidence and willingness to try new formative assessment practices in the classroom. Facilitators highlighted the importance of teachers focusing on the common goal of using formative assessment to support students' learning with the latitude to try a variety of formative assessment practices across contexts. Within Learning Circle sessions, facilitators observed that discussion and feedback among teachers helped them develop, refine, and expand their respective formative assessment practices. Moreover, teachers facing similar challenges implementing formative assessment provided each other with emotional support that helped them to stay motivated and continue to develop and use formative assessment practices in their classrooms. Over time, facilitators noticed that teachers' focus shifted from assessment results (e.g., grading and measuring) to growth-oriented learning processes. This shift allowed teachers to adopt a more dynamic, responsive, and student-centered approach to teaching and learning rooted in formative assessment principles and practices. This new approach not only benefited students' learning and classroom cultures, but also enhanced the feedback teachers provided to students, parents, school administrators, and other educational stakeholders.

Local facilitators elaborated on how the Teacher-Led Learning Circles supported teacher leadership and the spread of formative practices in teachers' respective contexts. As teacher participants gained confidence in their formative assessment knowledge and practice, they began to take on leadership roles with their teacher colleagues who were not involved in the T3LFA project. At the classroom level, teacher leadership was evident in several forms, including teacher participants actively sharing formative assessment learning and experiences with colleagues, modelling the use of formative assessment for colleagues, mentoring colleagues who were less experienced in formative assessment, and engaging in joint projects focused on formative assessment with colleagues. Some teachers' leadership also extended to the school level, with teacher participants advocating for the use of formative assessment to inform school goals and decisions. The project also empowered a few teachers to collaboratively find solutions to context-specific educational issues beyond formative assessment and lead change in their school, district, and broader community.

6.2.1.3 Supports for Local Facilitators' Engagement in Teachers' Professional Learning and Development

Local facilitators acknowledged several critical supports for their facilitation of teachers' professional learning and development in the project. Notably, facilitators appreciated the materials provided to guide the implementation of Teacher-Led Learning Circles (i.e., [Facilitators Handbook](#) and [Participants Guide](#) and other tools) and the [Literature Review](#) of formative assessment practices and teacher professional learning provided by the international researchers at the beginning of the project. Facilitators also valued the initial HertsCam training sessions before the Circles began and ongoing meetings and support from HertsCam trainers and their national researchers associated with the project. Some facilitators also identified support from their local union representatives in Learning Circle activities, financial support for workshops, and autonomy within the project to widen the range of formative assessment strategies discussed.

6.2.1.4 Supports for Countries' Participation in the T3LFA Professional Learning and Development

Local union representatives and national researchers reported a range of valued supports for their country's participation in the T3LFA project. Like local facilitators, they acknowledged the value of the project materials provided to guide implementation (i.e., [Facilitators Handbook](#) and [Participants Guide](#) and other tools) and the [Literature Review](#) of formative assessment practices and teacher professional learning and development provided by the international researchers to guide a common professional learning process and understanding of formative assessment across Learning Circles. In addition, local union representatives and national researchers emphasized the importance of having specialized HertsCam trainers and qualified local facilitators who were instrumental in structuring and facilitating all Learning Circle activities. Local union representatives and national researchers also noted the importance of facilitators and teachers understanding the connections between teaching, assessment, and student learning and making students the starting point for professional learning.

6.2.2 Professional Learning and Development Challenges

Despite the many supports for teachers' engagement in professional learning and use of formative assessment practices, teachers also experienced challenges in the T3LFA project. The following sections highlight these challenges from teacher, local facilitator, local union representative, and national researcher perspectives.

6.2.2.1 Challenges to Teachers' Use of Formative Assessment

In the Teacher Post-Survey, teachers shared challenges to embedding formative assessment practices in their classrooms (see Table 14). The greatest challenge teachers experienced was a lack of system-wide professional development that supports formative assessment knowledge, beliefs, and practices ($M = 3.24$, $SD = 1.45$), with 46.67% of teachers reporting this as a moderate or significant barrier to implementation. This challenge was followed closely by assessment policy that emphasizes grading and summative assessment rather than formative assessment practices ($M = 3.07$, $SD = 1.60$), with 46.28% of teachers citing this as a moderate or significant implementation barrier. Although many teacher participants did not have access to digital technology, the least reported challenge among teachers was the accessibility of digital technology to support formative assessment practices ($M = 2.21$, $SD = 1.72$), with 30.18% of teachers rating this as a moderate or significant barrier to implementation. Notably, all standard deviations for teachers' experiences with barriers were high, ranging from 1.35 to 1.72, indicating substantial variance in teachers' challenges in embedding formative assessment practices.

Table 14

Post-Teacher Survey Mean Ratings for Experiences with Barriers to Embedding Formative Assessment in the Classroom

Items (Question 9-Post) Scale: Did Not Experience (0) to A Significant Barrier (5)	Post-Survey Mean (SD)	Frequency (%) for Moderate or Significant Barrier
Assessment policy that emphasizes grading and summative assessment rather than formative assessment practices	3.07(1.60)	46.67
A lack of system-wide professional development that supports formative assessment knowledge, beliefs, and practices	3.25(1.35)	46.28
Teaching is driven and motivated by large-scale (i.e., state/national) testing	2.78(1.71)	42.50
Adopting selective formative assessment practices rather than fully embracing a student-led, feedback-driven teaching practice	2.55(1.52)	31.94
Accessibility of digital technology to support formative assessment practices	2.21(1.72)	30.18

Note. Post-Survey n = 116-121.

Local facilitators observed a range of challenges for teachers in identifying and implementing formative assessment practices associated with their assessment orientations, classroom implementation, and contextual influences.

Formative Assessment Orientations

First facilitators observed diverse orientations toward formative assessment among teacher participants, based on teachers' expertise, school contexts, student population, and assessment beliefs. These differences in teachers' orientations toward formative assessment sometimes made collaborative work and discussions during Learning Circles challenging for participating teachers and facilitators. Furthermore, some teachers had difficulty differentiating between pedagogical approaches (e.g., group work) and formative assessment practices (e.g., incorporating peer feedback within group work), planning for and implementing the pedagogical approach without explicit integration of formative assessment.

Classroom Implementation

Second, facilitators identified key challenges among teachers regarding their practical implementation of formative assessment. Many teachers struggled with integrating formative assessment in their classrooms and using it to inform their instruction. Specific classroom implementation challenges included identifying appropriate formative assessment practices based on students' needs, grade level, or curricular constraints; embedding formative assessment in established classroom routines; combining multiple formative assessment practices to support students at different levels; using formative assessment with large classes; and ensuring students understand how to engage informative assessment.

Contextual Factors

Finally, contextual factors influenced teachers' formative assessment learning and practice in the project. Most commonly, facilitators noted the lack of support from school leadership and lack of interest from teachers' colleagues in the project's goal to enhance and spread formative assessment practices in classrooms and schools. As a result, some teacher participants had to connect with other like-minded teachers outside their school contexts to further their formative assessment learning and practice in between Learning Circle sessions. However, teachers' heavy workloads limited the amount of time they had to engage in professional reflection and collaboration about the implementation of formative assessment practices outside of Learning Circle sessions. In addition, the external pressures of mandated large-scale assessments in many school contexts contributed to resistance toward formative assessment practices among school leaders, colleagues, students, and parents.

Local facilitators and teachers collectively addressed challenges associated with classroom implementation of formative assessment practices. First and foremost, facilitators provided time within Learning Circle sessions for teachers to discuss the challenges they were facing with respect to implementing formative assessment in their classrooms. Then facilitators and teachers collectively identified solutions to these challenges and step-by-step approaches to guide teachers' goals and next steps in practice. To address time constraints in the classroom, teachers often decided to implement efficient formative assessment practices, such as entry/exit tickets or thumbs-up/thumbs-down. Commonly, teachers were given the latitude to set individual goals through discussions with their Learning Circle colleagues, which yielded positive outcomes in the classroom. Some teachers also used observations to learn from peers who had more experience with formative assessment.

In some Learning Circles, facilitators created sub-groups of teachers based on teachers' grade levels, school contexts, and professional learning priorities to address divergent teacher orientations toward assessment. Facilitators worked with the small groups to develop teachers' formative assessment knowledge and practices before bringing the small groups together for whole group Learning Circle discussions. These small groups provided an opportunity for facilitated reflections on how teachers' beliefs, contexts, and experiences impacted their orientation toward and implementation of formative assessment.

6.2.2.2 Challenges with Professional Learning and Development Processes

Along with teachers' challenges identifying and implementing formative assessment practices, local facilitators reported challenges associated with the professional learning and development processes used in the project, namely the content of the Learning Circle sessions and the mode of teacher collaboration.

Professional Learning Content

With respect to content, all facilitators shared that the materials and activities provided by the T3LFA project were very time-consuming and limited the amount of time available for open discussion among teachers and facilitators during Learning Circle sessions. In addition, facilitators' and teachers' initial lack of familiarity with formative assessment terms and practices was a challenge across all participating countries. Facilitators wanted more guidance on the project's professional learning and development goals and process, as well as more materials on formative assessment, to ensure coherent and common understandings for themselves

and the teachers they were supporting. Many facilitators also shared that the Learning Circle materials and activities provided by the project had to be adapted to align with their contextual needs (e.g., preferred language, educational terminology, classroom culture). Some facilitators also noted that the Learning Circle materials and activities needed to be more practical in order to support teachers' engagement in the project and monitor their country's participation.

Professional Learning Mode. Along with the Learning Circle content, some facilitators shared that the mode of the professional learning was a challenge. Specifically, distance between participating teachers in some countries made it challenging for them to participate in collaborative activities. Some facilitators used online collaboration to engage geographically diverse teacher participants; however, in these cases, poor internet connection became a challenge. Furthermore, while online collaboration enabled more teachers to participate in the project, the bonds created between teachers in online formats were not as strong as between teachers engaged in-person collaboration.

To address challenges associated with Learning Circle processes, local facilitators shared that they could have benefitted from additional support in the project, notably more practical tools, facilitation support, and digital collaboration. In terms of tools, facilitators would have valued data analysis tools, customizable lesson plans, peer observation frameworks, student engagement strategies, and evaluation tools. To enhance their facilitation of teachers' professional learning, facilitators suggested cultural competency training, mentorship programs, and structured feedback mechanisms for ongoing support. To enhance collaboration across Learning Circles, facilitators recommended virtual collaboration platforms for participants and leveraging digital tools to share information more effectively within and beyond project participants.

6.2.3 Professional Learning and Development Recommendations from Project Participants

The following sections present local facilitator, local union representative, and national researcher recommendations to improve teachers' professional learning in formative assessment using the Teacher-Led Learning Circles model.

6.2.3.1 Local Facilitator Recommendations for Professional Learning and Development

Tips for Facilitating Teacher-Led Learning Circles

Local facilitators offered the following recommendations for facilitators of Teacher-Led Learning Circles, grouped into two key themes: (a) build trusting collaborative relationships, and (b) focus on teachers' needs and interests.

Foster Trusting, Collaborative Relationships

- Create a safe and low-risk environment based on trust for teachers to feel confident enough to share their thoughts, knowledge, and practices and reflect on their biases.
- Be interested in teachers and get to know them and their professional realities.
- Listen to teachers to fully support them and value their diverse contributions.

- Let teachers come to you before suggesting help or providing recommendations so as not to interrupt teachers' growth.
- Encourage teachers to build and strengthen positive relationships with each other.
- Encourage teachers' active participation in the Circles.
- Provide ongoing support to teachers in between Circles.

Focus on Teachers' Needs and Interests

- Use teachers' issues as starting points for conversations; reflect on what they want and need in the professional learning.
- Combine theory and practice to support teachers' meaningful engagement.
- Develop a structured approach to the sessions while leaving room for some flexibility.
- Establish clear objectives and expectations for Learning Circle activities.
- Use diverse instructional approaches to facilitate teachers' learning.
- Provide applicable and relevant material to support teachers' learning.
- Model effective practices for teachers.
- Adjust sessions based on Learning Circle participants' feedback.
- Share knowledge with teacher participants between Learning Circle sessions.
- Encourage teachers to apply the knowledge and skills acquired during Learning Circle sessions in their classrooms.

Tips for Teachers Participating in Teacher-Led Learning Circles

Local facilitators also offered several recommendations for teachers participating in Teacher-Led Learning Circles focused on formative assessment, grouped into two key themes: (a) actively engage in professional collaboration, and (b) commit to changing formative assessment practice.

Actively Engage in Professional Collaboration

- Be open-minded and willing to reflect on and re-evaluate your formative assessment practices and teaching approaches.
- Openly share your teaching and assessment experiences with Learning Circle participants.
- Collaborate with and learn from Learning Circle participants.
- Appreciate the value of the collaborative professional learning opportunity.

Commit to Changing Formative Assessment Practice

- Recognize that formative assessment is a flexible approach dependent on teachers, students, and their context.
- Realize that formative assessment should be tailored to students' needs and abilities so that no child is left behind.

- Experiment with new learning about formative assessment in practice.
- Document your own progress with formative assessment practice and the impact of formative assessment on students.
- Seek regular feedback to improve your formative assessment practice.
- Advocate for the use of formative assessment among peers within your school, district, and community.

Tips for Gaining Government and Institutional Support for Teacher-Led Learning Circles

Local facilitators provided several recommendations about how to convince governments to provide more institutional support for collaborative teacher professional learning like Teacher-Led Learning Circles. These tips fall under two broad categories: (a) communicate positive impacts, and (b) engage key stakeholders.

Communicate Positive Impacts

- Start at the local level by showing the evidence-informed positive impacts of formative assessment within schools and the community.
- Publicly share successes of using formative assessment and inform Ministries of Education about these successes.
- Highlight best practices and success stories.
- Conduct a survey on teachers' knowledge and use of formative to identify and communicate areas for improvement and professional learning needs.

Engage Key Stakeholders

- Encourage coordinated efforts between different relevant stakeholders (e.g., academics, teacher representatives, educational authorities, teachers).
- Involve teacher unions to support collaborative teacher professional learning and development initiatives focused on formative assessment.
- Invite representatives of educational authorities to attend Learning Circle sessions and follow teachers' progress.
- Expand opportunities for teacher training on the use of formative assessment to see the recurrent positive results.

6.2.3.2 Local Union Representative and National Researcher Recommendations for Professional Learning and Development

Local union representatives and national researchers also shared the following “lessons learned” from their country’s participation in Teacher-Led Learning Circles. These lessons fall into three categories: (a) provide system and structural supports for professional learning, (b) prioritize teacher professional learning needs and engagement, and (c) address barriers to teacher professional learning¹³.

¹³ For more detailed recommendations from each participating country, please see the Country Case Study reports in Appendix C.

Provide System and Structural Supports for Professional Learning

- The involvement of all stakeholders and their awareness of the project's value contribute to its success.
- Support from authorities is necessary to provide adequate professional development opportunities for all teachers.
- The teaching profession needs to be valued by all stakeholders.
- Facilitator competence and leadership are crucial to the success of the Learning Circles model.
- Facilitators must ensure a safe and inclusive environment and set clear objectives within Learning Circles.
- Face-to-face professional learning sessions seem more effective for teachers than virtual sessions.

Prioritize Teacher Professional Learning Needs and Engagement

- Teacher motivation and ownership are key to successful professional learning.
- Teachers' motivation and understanding of the value of formative assessment are fundamental.
- Teachers' initial knowledge about formative assessment should be the starting point of professional learning.
- Teachers benefit from learning about formative assessment practices that are applicable and relevant across various contexts (e.g., grade levels, subjects).
- Co-construction of knowledge among Learning Circle participants supports changes in teachers' formative assessment understanding, practices, and mindsets.
- The tools and materials provided during professional learning sessions need to be sufficiently relevant and practical for teachers.
- Teachers appreciate being listened to and having their contributions considered by Learning Circle participants.
- Teachers need adequate time to reflect, plan, share, and collaborate with Learning Circle peers about formative assessment practices developed and used.

Address Barriers to Teacher Professional Learning

- Time, distance, lack of school leadership support, resistance to change, and poor internet connection are common issues that impede teachers' participation in professional learning.
- Overreliance on large-scale assessment (i.e., testing culture) can hinder teachers' use of formative assessment.
- Time for professional learning should be integrated into the formal system to enable the participation of all interested teachers.
- Teachers would benefit from professionalizing spaces within unions to connect, discuss, evaluate, reflect, and redefine their work.

6.3 Summary of Findings

This chapter has presented our data analyses and findings linked to the overarching research questions concerning the implementation and impact of the T3LFA project for improving teacher-led promising formative assessment practices, and the professional learning and teacher leadership processes which supported these changes in teachers' practices.

The findings indicate very positive improvements in teachers' confidence in and embeddedness of practice for teachers' use of effective formative assessment strategies and linked practices in the categories of Learning Intentions and Success Criteria, Questioning and Classroom Discussion, Feedback, and Self- and Peer-Assessment during the TLFA project. Findings concerning teachers' implementation of formative assessment include teachers' stated goals for the formative assessments they used, examples of promising practices implemented with reported benefits for students and teachers, and teachers' stated student-centred reasons for using these practices. A wide range of benefits were reported for students, including improvements in learning, progression, confidence, agency, and academic achievement, and for teachers, including increased knowledge and use of formative assessments with improvements in teaching and the power of feedback to provide timely, differentiated supports to students and to communicate students' learning progress to parents/caregivers.

Relatedly, the findings also indicate positive improvements in professional learning and development processes to support teachers' formative assessment practices. Teachers' experience of increasing support for effective professional learning and development through the T3LFA project is discussed, which has benefited teachers' engagement in professional learning, development of teacher leadership, and use of promising formative assessment practices. The importance of supports for local facilitators' engagement in the T3LFA professional learning and development model, and for countries' participation in this project, are also identified.

Nevertheless, challenges to teachers' use of formative assessment and for effective professional learning and development processes are noted. Crucially, the largest identified challenge (by almost half of the participating teachers) was the lack of system-wide professional development that supports formative assessment knowledge, beliefs, and practices. Therefore, the recommendations from project participants, including local facilitators, local union representatives, and national researchers, that conclude this chapter are critical for future development of the T3LFA professional learning and development approach at scale within and across countries. In the next chapter, we add our conclusions from the overall T3LFA international research and propose key lessons learned to date and to inform future advocacy and action.

Chapter 7: Conclusions and Key Lessons

The T3LFA project provided facilitated professional learning and development to advance teachers' leadership of educational improvement with a focus on increasing confidence, understanding, and use of formative assessment practices to benefit students' learning and progress. The T3LFA project was implemented over three years (2020-2023) in seven countries, Brazil, Côte d'Ivoire, Ghana, Malaysia, South Korea, Switzerland, and Uruguay, spanning four continents. This final international research report presents findings from a multiple methods study gathering data from project participants, including teachers, local facilitators, local union representatives, and national researchers (see Chapter 4 for details). Building on the findings presented in Chapter 6, this final chapter discusses overall conclusions from the international research concerning the implementation, experiences, and outcomes from the T3LFA project. This chapter also identifies key lessons for consideration in further development of this project and for similar activities to support teachers' professional development, learning, and leadership; use of effective formative assessment practices; and to engage teacher unions in collaboration with local, national, and international partners to advance positive teacher-led and student-focused educational changes.

Two main research questions guided the Teacher-Led Learning Circles international and national research:

- 1. In the Teacher-Led Learning Circles, what promising teacher-led formative assessment practices were identified?***
- 2. In the Teacher-Led Learning Circles, what professional learning and teacher leadership processes supported teachers' formative assessment practices?***

The theory of action underpinning the T3LFA project is that through engaging in effective professional learning and development to advance teachers' leadership skills and their formative assessment knowledge and practices, teacher-led formative assessment practices will be developed and tried out, and effective practices will be further implemented in classrooms to benefit students and their learning. This theory of action is consistent with meta-analyses and reviews of the implementation and impact of professional learning and development, which indicates the effect of professional development is mediated through a process of changes, first, in teachers' self-efficacy, professional knowledge, and practices and then, second, in students' learning and achievement (Garrett et al., 2021). Therefore, we begin by discussing the findings and implications concerning the Teacher-Led Learning Circles as a model for effective professional learning and development, and then draw out conclusions concerning the shifts in teachers' confidence in and use of formative assessment to benefit students' engagement, agency, and learning.

7.1 Effective Professional Learning and Development Experiences

As discussed in Chapter 2, our review of professional learning and development research literature (see also Campbell et al., 2022) resulted in the identification of the following six key features. Effective professional learning and development:

1. Is linked to teachers' identified priorities for their work to support students' needs, improve student learning, and enhance related student outcomes.
2. Is differentiated for teachers' professional values, experiences, and work in their school and classroom contexts.
3. Provides useful, research- and practice-informed, quality content relevant to identified professional development needs.
4. Supports evidence-informed active professional learning, inquiry processes, critical reflection, and collaborative professional learning to value and develop teachers' leadership and professional agency.
5. Requires adequate provision of funding, time, and expert resources.
6. Involves system, school, and teacher leadership prioritizing and supporting the importance of professional development.

The Teacher-Led Learning Circles' professional development model included all of the above features. We discuss conclusions, based on the international and national research evidence, for each of these features below, then draw out key lessons learned for future development of the T3LFA and other approaches seeking to ensure effective professional learning and development.

7.1.1 Participants' Experiences Linked to Features of Effective Professional Learning and Development

1. Linked to teachers' identified priorities for their work to support students' needs, improve student learning, and enhance related student outcomes.

In the Teacher Post-Survey, statistically significant gains in teachers' response to the extent to which their professional development in the Teacher-Led Learning Circles "was linked to my professional priorities to support my students' learning" were observed; this was also the most prevalent response. Consistent with the research literature concerning both effective formative assessment strategies and effective professional learning and development (see Chapter 2), teachers participating in the T3LFA project most frequently stated wanting to improve their formative assessment knowledge and practice, use formative assessment to better support students, and enhance student outcomes through formative assessment. Teachers' goals also included increasing students' engagement and agency in their own learning. Local facilitators further identified that most teachers wanted to focus on students' holistic development of knowledge, understanding, skills, and values, using assessment strategies differentiated for students' diversity and needs and providing quality feedback to support students' progress. This combination of increasing both teacher agency and student agency is a powerful aspect of effective formative assessment.

While the priority focus was on students, teachers also identified goals for their own professional needs. Facilitators noted that teachers had professional learning goals that included developing new formative assessment practices, acquiring new knowledge about assessment, becoming more reflective in their teaching approaches, and improving communication about student learning. Some teachers also set goals to increase collaboration with colleagues and improve their teacher leadership. These goals are consistent with the intended aims of the T3LFA project to develop teachers' knowledge, skills, instructional practices, and leadership.

2. Differentiated for teachers' professional values, experiences, and work in their school and classroom contexts.

In the Teacher Post-Survey, there was a statistically significant increase in the response to the teachers' professional development "was differentiated to include consideration of my professional learning and development experiences and the context I am working in" during the Teacher-Led Learning Circles. While the overall Teacher-Led Learning Circles professional learning and development model and linked international [Research Framework](#) (LaPointe-McEwan et al., 2022) remained similar across all participating countries, there needed to be adaptations and adjustments for different national and local contexts, including translation, terminology, consideration of existing policies, and variations in geographical, community, school, and classroom contexts.

Differentiation in terms of the specific formative assessments to be implemented and reflected on was important; for example, facilitators highlighted the importance of teachers focusing on the common goal of using formative assessment to support students' learning with the latitude to try a variety of formative assessment practices across contexts. In some Teacher-Led Learning Circles, facilitators intentionally structured teacher groups that were differentiated by their work context, for example, grade levels and school contexts, or by diverging views on formative assessment. These small groups provided an opportunity for facilitated reflections on how teachers' beliefs, contexts, and experiences impacted their orientation toward and implementation of formative assessment. This small group differentiation could then enrich whole Learning Circle discussions as experiences across teacher groups were shared.

The T3LFA project took place over a school year. Recognition of teachers' developing experiences and changing attitudes and practices for formative assessment required differentiation over time within the Teacher-Led Learning Circles process. For example, facilitators noticed that teachers' foci shifted from assessment results (e.g., grading and measuring) to growth-oriented learning processes with an important shift toward a more student-centred approach to teaching and learning rooted in formative assessment principles and practices.

Of note, the Teacher Pre- and Post-Survey results showed high variations in teachers' professional development experiences. It is important, therefore, that differentiation to value teachers' different experiences, contexts, and needs is appropriate while ensuring consistency of high-quality professional learning and development experiences for all participants.

3. Provided useful, research- and practice-informed, quality content relevant to identified professional development needs.

In the Teacher Post-Survey, the second most prevalent response was that teachers experienced professional development, which “provided useful, relevant content linked to my professional development priorities,” and this increased through the Teacher-Led Learning Circles. Local facilitators, local union representatives, and national researchers commented favourably about the importance and usefulness of materials provided to inform the Teacher-Led Learning Circles. The materials developed with and by HertsCam, including the [Facilitators Handbook](#) and [Participants Guide](#), were considered useful in supporting facilitation and professional learning and development processes. The [Literature Review](#) of teacher professional learning and development, teacher leadership, and formative assessment practices provided by the international researchers (Campbell et al., 2022) at the beginning of the project was also considered helpful in supporting both facilitators’ and teachers’ understanding and practices, and the international [Research Framework](#) (LaPointe-McEwan et al., 2022) guided the overall international project, the work of national researchers, and Education International and union representatives’ advocacy and actions.

However, a careful balance between providing sufficient, relevant, and useful content while also not providing too much required content within workshop activities was needed. For example, on the one hand, facilitators wanted more materials to ensure consistent understanding of formative assessment for themselves and the teachers involved. On the other hand, facilitators were concerned that covering the content included in the T3LFA project was time-consuming and limited time for teachers to engage in more open discussions to share their learning and address challenges. Consistent with the importance of differentiating teachers’ professional learning and development experiences, consideration of differentiating the content supports for facilitators may be worthwhile, particularly for substantive knowledge about effective formative assessment and linked promising practices. Selecting facilitators with both facilitation expertise and knowledge of formative assessment practices may be worthwhile for future development of the T3LFA project.

4. Supported evidence-informed active professional learning, inquiry processes, critical reflection, and collaborative professional learning to value and develop teachers’ leadership and professional agency.

In the Teacher Post-Survey, teachers reported increases in the extent to which their professional development “involved inquiry and collaborative professional learning to develop my professional expertise” during the Teacher-Led Learning Circles. The design of the Circles is collaborative, with teachers coming together in professional learning groups and with the engagement of facilitators, local union representatives, and national researchers. In practice, local facilitators, local union representatives, and national researchers shared that Learning Circles provided teachers with regular opportunities to learn collaboratively within the guiding structure of the model. By creating a safe space and trusting relationships, discussion and feedback among teachers helped them develop, refine, and expand their formative assessment practices. As well as sharing learning, teachers shared and addressed challenges with a combination of emotional support and practical suggestions to benefit teachers’ participation and their classroom practices. Teachers reported that collaborating with Learning Circle

colleagues was crucial in helping them learn about and implement formative assessment and that they experienced increased confidence in using formative assessment practices in their classrooms, leading to improved student learning and achievement.

Two main challenges linked to collaboration were identified. First, facilitators had to consider how best to ensure professional collaboration and trust when participating teachers held diverging views about formative assessment. Second, ensuring and sustaining collaboration for teachers across geographical contexts could be challenging in some countries. Some facilitators used online collaboration activities, and it was suggested that further future development of virtual collaboration platforms and digital tools would be beneficial. However, not all teachers had access to technology or reliable internet connections. Furthermore, while the use of online collaboration was supported, participants appreciated in-person collaboration to strengthen trusting mutually beneficial professional relationships and shared learning.

5. Required adequate provision of funding, time, and expert resources.

As previously discussed, expert resources in the form of materials informing the Teacher-Led Learning Circles professional development model and processes, the international [Research Framework](#), and the international research team [Literature Review](#) concerning effective professional learning and development and formative assessment were considered useful. There was also interest in expanding the availability of online platforms and digital tools to support the T3LFA project, particularly for supporting collaboration across geographical contexts and for sharing effective formative assessment practices. These are all areas that Education International have developed or are developing to sustain, support, and scale the T3LFA project within and beyond existing countries and education systems.

The role of local facilitators was considered vital. Local union representatives and national researchers observed that facilitators provided essential guidance and support for all Learning Circle activities, fostering teacher learning and reflection; developing teachers' understanding of the connections between teaching, assessment, and student learning; and making students the starting point for professional learning. By creating safe spaces for collaborative professional learning, facilitators enabled teachers to share their teaching and assessment challenges and make decisions about next steps.

The important role of the international professional development model, materials, and training of local facilitators by HertsCam was central to supporting local facilitators. Facilitators valued the initial HertsCam training sessions before the Circles began and ongoing meetings and support from HertsCam trainers and the national researchers associated with the project. Facilitators suggested that further and ongoing professional learning for themselves, for example, mentorship and feedback, and for their work, for example, cultural competency training, would be helpful.

Time and the funding to provide time are perennial issues for effective professional learning and development. The T3LFA project directly funded dedicated time for teachers to engage in this professional development. The Learning Circle programme was designed to span one academic year (10 months) and include seven 2-hour workshop sessions with all teachers in the Learning Circle, three one-on-one tutorials between the facilitator and each teacher

in the Learning Circle, and two network events with teachers across multiple schools. While there were variations across countries in the details, teachers appreciated the time for their professional learning and development. In addition to developing their teacher leadership and understanding and use of formative assessments, time out of the classroom and in collaborative workshops helped teachers share and address challenges with implementing formative assessments in their classrooms. Facilitators provided time within Learning Circle sessions for teachers to discuss the challenges they were facing and then for facilitators and teachers to collectively identify step-by-step approaches to guide teachers' goals and next steps in practice.

6. Involved system, school, and teacher leadership prioritizing and supporting the importance of professional learning and development.

At the system level, the role of union leadership was important. Education International led the overall T3LFA project in collaboration with the Jacobs Foundation, local union representatives, international and local facilitators, international and national researchers, teachers, and governments. At the national and local levels, local facilitators appreciated support from their local union representatives in Learning Circle activities.

However, of concern, in the Teacher Post-Survey there was a slight decrease in ratings concerning whether the participants' professional development "was supported by school leaders," indicating that while this process is teacher-led, attention to positively engaging formal education leaders is also important. Local facilitators also expressed concerns about lack of support from school leadership as a barrier to engaging more teachers within the school and spreading formative assessment practices in classrooms and schools. Therefore, attention to engaging and educating formal school leaders about the concepts, practices, and benefits of formative assessment and how they can be integrated within national and local educational assessment contexts is important.

A central purpose of the T3LFA project was to support teachers' leadership development. Encouragingly, growth in and benefits of teacher leadership were identified by the participants. Facilitators noticed the emergence of leadership among teacher participants as teachers' formative assessment knowledge and confidence increased over time. In the Teacher Post-Survey, teachers reported that the Teacher-Led Learning Circles fostered teacher leadership. At the classroom level, teacher leadership included actively sharing formative assessment learning and experiences with colleagues, modelling the use of formative assessment for colleagues, mentoring colleagues who were less experienced in formative assessment, and engaging in joint projects focused on formative assessment with colleagues. Some teachers' leadership also extended to the school level, with teacher participants advocating for the use of formative assessment to inform school goals and decisions. As discussed above, not all school leaders were supportive, and in these contexts, teachers reached out to teachers outside their school contexts to further their formative assessment learning and practice in between Learning Circle sessions. Through growth in teacher leadership skills and actions, a few teachers extended these skills to areas beyond formative assessment to lead change in their school, district, and broader community.

7.1.2 Overall Key Lessons for Effective Professional Learning and Development

The evidence gathered and analyzed for this final international research report indicates that the Teacher-Led Learning Circles professional development design and processes have been effective and beneficial for supporting teachers' professional learning to improve their teacher leadership and enhance their confidence and use of promising formative assessment practices (as will be discussed below). Of concern, therefore, is that in the Teacher Post-Survey, the greatest challenge that teachers reported was a lack of system-wide professional development that supports formative assessment knowledge, beliefs, and practices, with almost half (46.67%) of teachers reporting this as a moderate or significant barrier to implementation. **The first and priority key lesson is the need for, and importance of, supporting further implementation of the Teacher-Led Learning Circles project in and across education systems.**

Based on our review of relevant international research literature and the substantial evidence from the T3LFA project, continuing to ensure the six key features of effective professional learning and development are embedded in the design and implementation of this approach to teacher leadership and professional learning for formative assessment is recommended. Key lessons are outlined below:

- 1. *Teacher-led and student-focused professional learning and development goals:*** An important lesson from the Teacher-Led Learning Circles is the value of supporting teachers in identifying and focusing on goals linked to their students' needs and for teachers' own professional learning needs. These twin goals can enhance both student agency and teacher leadership.
- 2. *Differentiation:*** Differentiation for teachers' professional contexts and experiences and for their goals and approaches to formative assessment is important, including further differentiation with growing and changing experiences over time.
- 3. *Quality, practical, and relevant content:*** Quality, practical, and relevant content matters, particularly for substantive understanding of formative assessment. However, quality of content needs to be balanced with quantity and differentiated, including contextual differentiation, to be relevant and practical.
- 4. *Active and collaborative professional learning processes:*** Collaborative professional learning is powerful and valued. Support for collaboration beyond the Circles and across geographical contexts is important and requires attention to both availability of online and in-person activities.
- 5. *Adequate resources:*** Funding to support access to expert resources, including facilitators, and time for professional development were key features of the Teacher-Led Learning Circles and central elements of its success in supporting teachers to improve their knowledge, skills, and practices, and to support implementation of formative assessments in their classrooms, including addressing challenges to implementation.
- 6. *Leadership supports:*** System leadership, including teacher unions, in leading, collaborating with, and supporting teachers' professional development, teacher leadership, and use of formative assessment practices, is important and useful. Growth in teachers' leadership, confidence, skills, and practices is beneficial with

impacts within and beyond their schools. However, while teacher-led, it is also important to engage and educate formal school leaders on the importance of teachers' professional development, teacher leadership, and the concept, practice, and benefits of formative assessment overall and in their specific contexts.

7.2 Effective Formative Assessment Practices

7.2.1 Participants' Use of Formative Assessment Practices

Based on our initial [Literature Review](#) (Campbell et al., 2022) and adapting the [Assessment for Learning Measurement Instrument](#) (Lysaght et al., 2017), teachers were asked about their confidence in and use of four key formative assessment strategies and linked practices. Teacher participants' uses of the four key strategies (Learning Intentions and Success Criteria, Questioning and Classroom Discussion, Feedback, and Self- and Peer-Assessment) as well as the role of digital technology in formative assessment are discussed below.

1. Learning Intentions and Success Criteria

The Learning Intentions and Success Criteria category refers to how teachers communicate the knowledge, skills, and concepts students need to learn and how students will demonstrate their learning. Teachers were asked to rate their confidence with and the embeddedness of these five specific formative assessment practices:

- Learning goals are stated using words that emphasize knowledge, skills, concepts and/or attitudes.
- Pupils are reminded about links between what they are learning and the overall learning goals.
- Child-friendly language is used to share learning goals with pupils.
- Success criteria related to learning goals are differentiated and shared with pupils.
- Pupils demonstrate that they are using learning goals and/or success criteria while they are working.

Teachers reported increased confidence and increased embeddedness of all five of the above practices at the end of the T3LFA project compared to at the start. The gains in the overall ratings for both teachers' confidence and embeddedness in practice were statistically significant.

Within the five areas of practice for Learning Intentions and Success Criteria, teachers gained the most confidence with stating learning goals using words that emphasize knowledge, skills, concepts, and/or attitudes and reminding students about links between what they are learning and the overall learning goals. Teachers reported the highest levels of embeddedness for using child-friendly language to share learning goals with pupils in both the Teacher Pre- and Post-Surveys. The greatest increases in embeddedness were associated with differentiating and sharing success criteria related to learning goals with students and students demonstrating that they are using learning goals and/or success criteria while they are working. When teachers

were asked to codify which formative assessment practices they implemented related to Learning Intentions and Success Criteria, teachers used the promising practices of rubrics, checklists, and entry/exit tickets to support teaching and learning.

2. Questioning and Classroom Discussion

The Questioning and Classroom Discussion category refers to how teachers facilitate questioning and classroom discussion to deepen student learning and provide in-the-moment feedback for next steps. Teachers were asked to rate their confidence with and the embeddedness of these five specific formative assessment practices:

- Assessment is used to facilitate classroom discussions.
- Questions are used to elicit pupils' prior knowledge on a topic.
- Pupils are able to share their questions during a lesson.
- Pupils' incorrect responses are used to guide teaching and learning.
- Pupils can explain to others what they are learning.

Teachers reported increased confidence and increased embeddedness in classroom practice of all five of the above practices at the end of the T3LFA project compared to at the start. The gains in the overall ratings for both teachers' confidence and embeddedness in practice were statistically significant.

Within the specific practices above, teachers reported the greatest increase in confidence in using students' incorrect responses to guide teaching and learning. This practice was top rated as the area of most confidence. Relatedly, using students' incorrect responses was also an area of growth in practice to become the most embedded in practice by the end of the project. The area of most increase in embeddedness in practice was allowing students to share their questions during a lesson. Teachers reported using a variety of promising practices, including think-pair-share, know wonder learning (KWL) charts, discussion circles, class debates, and individual student conferences.

3. Feedback

The Feedback category refers to how teachers provide ongoing feedback to support students to progress from where their learning currently is toward their learning goals. Teachers were asked to rate their confidence with and the embeddedness of these five specific formative assessment practices:

- Feedback to pupils is linked to the original learning goal(s) and success criteria.
- Assessment techniques are used during lessons to help the teacher determine how well pupils understand what is being taught.
- Diagnostic information from standardized tests is used to identify strengths and needs in teaching and learning.
- Pupils are involved in providing information about their learning.
- Pupils can explain to others what they are learning.

Teachers reported increased confidence and increased embeddedness in classroom practice of all five of the above practices at the end of the T3LFA project compared to at the start. The gains in the overall ratings for both teachers' confidence and embeddedness in practice were statistically significant.

In both the Teacher Pre- and Post-Surveys, teachers were most confident using assessment techniques during lessons to help them determine how well students understand what is being taught, and these were the most embedded practices. Notably, teachers gained the most confidence using diagnostic information from standardized tests to identify strengths and needs, and this was an area of growth in embeddedness in practice. Other areas of greater increases in confidence were in teaching and learning and allowing students to explain to others what they are learning, as well as embeddedness in practices involving students in providing information about their learning.

When describing the feedback practices teachers were implementing, teachers commonly gave students individual feedback and sometimes gave a combination of individual and group feedback. Many teachers shared the promising practice of providing students with descriptive, formative feedback on their learning progress in relation to learning intentions and success criteria. In some classrooms, teachers also used technology (e.g., Teams, WhatsApp, or Google Classroom) to provide students with descriptive, formative feedback on their learning and to communicate assessment information with students and caregivers/parents.

4. Self- and Peer-Assessment

The Self- and Peer-Assessment category refers to how teachers foster students' self- and peer-assessment to promote community learning, student ownership in learning, and learner agency. Teachers were asked to rate their confidence with and the embeddedness of these five specific formative assessment practices:

- Pupils are given an opportunity to indicate how challenging they anticipate the learning will be at the beginning of a lesson or activity.
- Pupils are encouraged to record their progress.
- Pupils are encouraged to use a range of assessment techniques to review their own work.
- A visual record of pupils' progress is maintained to track and celebrate pupils' learning and show areas of/for development.
- Time is set aside during parent/guardian teacher meetings for pupils to be involved in reporting on some aspects of their learning.

Teachers' confidence and embeddedness in classroom practice with each of the five Self- and Peer-Assessment practices was lower than in the previous three categories. However, as in the other categories, teachers reported increased confidence and increased embeddedness in classroom practice for all five of the above practices at the end of the T3LFA project compared to at the start. The gains in the overall ratings for both teachers' confidence and embeddedness in practice were statistically significant.

By the end of the project, teachers were most confident in encouraging students to use a range of assessment techniques to review their own work and the most embedded practice was encouraging students to record their progress. The highest gains in confidence and embeddedness in practice were for giving students an opportunity to indicate how challenging they anticipate the learning will be at the beginning of a lesson or activity and encouraging students to record their progress.

While self- and peer-assessment were the practices with the lowest confidence and embeddedness ratings at the start of the project, interestingly, these practices were the most frequently provided as examples for the teacher codification framework developed to describe teachers' promising practices developed during the T3LFA project. Teachers reported most often using self-assessment strategies or strategies that combined self- and peer-assessment strategies rather than using peer-assessment strategies in isolation. Several teachers mentioned self-reflection journals as a promising practice to support students' self-assessment. Other teachers used the combined self- and peer-assessment strategy of co-developing rubrics to enable self- and peer-assessment.

5. Digital Technology in Formative Assessment

A key aspect of the project was to explore how formative assessment could be meaningfully implemented via digital technologies. Teachers in this project had highly variable access to technology in their classrooms. In the Teacher Post-Survey, over 40% of teachers did not have access to WiFi or devices. In contrast, just under 20% of teachers had consistent WiFi and each pupil had individual access to a device. However, interestingly, the least reported challenge among teachers was the accessibility of digital technology to support formative assessment practices; however, almost a third (30.18%) of teachers rated access to digital technology as a moderate or significant barrier to formative assessment implementation.

A central finding from this project is that sound formative assessment can be implemented in classrooms with or without digital technology. Teachers used whatever resources were available to them to support effective formative assessment practices. When available, technology-enabled feedback from teachers, supported the documentation of students' learning over time, helped teachers share relevant digital learning resources with students, promoted enhanced student self-assessment, and facilitated communication about learning progress among teachers, students, and parents/caregivers. As such, technology can be a useful addition to enhance formative assessment practice in the classroom, although not an essential requirement. The key element is the formative assessment practice rather than the specific technology.

7.2.2 Overall Key Lessons about Formative Assessment Implementation

1. Formative assessment involves a suite of highly interconnected practices

A key lesson from the T3LFA project was that formative assessment involves a suite of highly interconnected practices. Importantly, no teacher or context implements only one practice, but rather, embedding formative assessment involves implementing multiple assessment strategies that are all aimed at supporting student learning. Further, while promising practices are reported under their primary formative assessment category, most practices reflect multiple categories (e.g., practices categorized as Self- and Peer-Assessment also supported Feedback in relation to Learning Intentions and Success Criteria), highlighting the interrelated and complementary nature of formative assessment practices. In essence, the promising practices identified by teachers seemed to have a primary function, which may have provoked secondary benefits across the suite of formative assessment practices. To illustrate, a teacher might facilitate peer feedback, asking students to share their responses to a problem and explain how they approached the problem. Teachers noted that such activities had secondary benefits across other formative assessment practice categories, such as fostering class discussion and questioning, facilitating feedback for students, and affording opportunities to reinforce learning intentions and success criteria—at the same time as promoting peer assessment. Our project highlights that there are multiple entry points for embedding formative assessment in classrooms, regardless of context, each of which can facilitate other formative assessment practices. The heart of the formative assessment process—i.e., teachers and students interpreting and using evidence of student learning to guide and promote learning—can be accessed and encouraged in multiple ways.

2. Formative assessment practices are adapted for local contexts and assessment systems

Key findings highlighted that there are various ways to facilitate formative assessment across grade levels, curricula, and education systems. However, how teachers practice formative assessment likely shifts in response to local, contextual factors. For example, researchers have cautioned that formative assessment, when overly focused on preparing students for large-scale tests by making testing criteria transparent, can promote narrow, instrumental approaches to “learning’ that may not extend to students’ lives beyond the tests and may enforce ‘criteria compliance’” (Stobart, 2008; Torrance, 2011, p. 477). Therefore, while formative assessment can operate within a framework dominated by testing or one more focused on lifelong learning, teachers’ approaches to formative assessment may differ within such assessment cultures (e.g., see DeLuca et al., 2021). Teachers may need to consider how they are using formative assessment to support both student success on large-scale tests as well as broader student learning goals. Importantly, the countries that participated in this project reflected a wide range of assessment cultures, including those with strong high stakes testing cultures. As such, this research supports that formative assessment can operate within a variety of assessment cultures, even if specific practices are operationalized differently within these contexts.

3. Formative assessment can occur across a range of teaching contexts, regardless of access to technology

Another key lesson was that formative assessment can occur across a range of teaching contexts, regardless of access to technology. For example, access to technology was the least reported barrier to formative assessment, and teachers reported developing similar promising practices with or without the use of technology. When students had consistent access to devices and reliable internet connections, virtual classrooms, shared drives, and online tools provided an additional environment to facilitate practices that were also reported by teachers whose classes had limited or no access to devices or the internet. Accordingly, technology can enhance formative assessment in classrooms, but it is not an essential requirement for the implementation of promising practices.

4. Formative assessment needs to be intentionally integrated into teachers' pedagogical practices in their classrooms

As part of their responses to the Codification Framework Questionnaire, teachers shared a range of pedagogical strategies that they had used. However, in some cases, these strategies did not integrate or maximize the potential of formative assessment to further benefit students' learning. For example, teachers shared examples of using group work in the classroom where students engaged in learning tasks with their peers but did not explicitly use formative assessment practices to support their learning (e.g., students did not explain their own learning to group members or provide feedback to peers based on learning intentions and success criteria). In a few cases, teachers mentioned scaffolding learning but did not explicitly use formative assessment to inform this scaffolding (e.g., teachers did not use student self-assessments, class discussions, or individual student conferences). While group work and scaffolding are valuable pedagogical strategies, it is important that teachers intentionally integrate formative assessment practices to maximize benefits on teaching and learning. The T3LFA project has benefited increases in teachers' confidence in and embeddedness of practice for effective formative assessment.

5. The Teacher-Led Learning Circles process has been highly impactful, with gains in participating teachers' confidence in and embeddedness of formative assessment

A final key lesson was that the Teacher-Led Learning Circles process has been highly impactful, with gains in participating teachers' confidence in and embeddedness of formative assessment practices, with benefits for students' learning, performance, and agency. These practices align with the research evidence concerning Assessment for Learning (AfL) strategies and the use of feedback to benefit students' learning (Leahy & William, 2009; Wisniewski et al., 2020). Participating teachers reported benefits for students' learning with improved student performance and enhanced learner agency mentioned most frequently. In addition, teachers shared that using formative assessment practices increased students' confidence, self-esteem, and development of metacognition. In some cases, formative assessment practices enhanced student participation and student leadership. Along with these benefits for students, teachers also shared positive impacts of formative assessment on their teaching practice. Teachers most frequently reported that formative assessment supported criteria-driven learning,

increased their knowledge of students' performance levels, enabled responsive instruction adapted to students' strengths and needs, and informed constructive feedback to move students' learning forward. Encouragingly, these reported outcomes align with the identified goals for the Teacher-Led Learning Circles project and teachers' reasons for implementing specific practices in their classrooms.

7.3 Concluding Thoughts

The Teacher-Led Learning Circles on Formative Assessment (T3LFA) project facilitated professional learning and development to advance teachers' leadership of educational improvement with a focus on increasing confidence in, understanding, and use of student-focused, effective formative assessment practices. An overarching goal of the project was to identify, codify, and disseminate effective formative assessment practices to support students' learning.

Based on our international research involving data collection from project participants in seven countries, the clear and compelling evidence is that the T3LFA project has been highly successful in supporting and improving teachers' professional learning and development of teacher leadership, and for improving teachers' confidence and use of promising formative assessment practices. Considerable benefits for both teachers and for students have been identified. In addition, benefits for the engagement of local facilitators and union representatives were important also. Further, enhancements in feedback benefited improvements in communication about students' learning with and for parents/caregivers and education leaders.

In this concluding chapter, we have highlighted key lessons for consideration. The two overarching lessons are that: ***the Teacher-Led Learning Circles process has been highly impactful, with gains in participating teachers' confidence in and embeddedness of formative assessment; and the need for, and importance of, supporting further implementation of the Teacher-Led Learning Circles project in and across education systems.*** Key lessons concerning professional learning and development from the T3LFA project are the importance of: teacher-led and student-focused professional learning and development goals; differentiation for teachers' professional contexts and experiences; inclusion of quality, practical, and relevant content; use of active and collaborative professional learning processes; allocation of adequate resources; and teacher, school, and system leadership supports. Regarding formative assessment, key lessons from the T3LFA project are that formative assessment: involves a suite of highly interconnected practices; practices are adapted for local contexts and assessment systems; can occur across a range of teaching contexts, regardless of access to technology; and needs to be intentionally integrated into teachers' pedagogical practices in their classrooms.

The T3LFA project has integrated and embedded features of effective professional learning and development, teacher leadership, and formative assessment identified in our review of research literature. Importantly, in addition, the data, findings, and conclusions from the T3LFA international research substantially augment and contribute to the evidence base globally.

The selection of seven countries spanning four continents resulted in a wide range of experiences for teachers in their varied classroom, school, educational, and community contexts. That the T3LFA approach could be appropriately adapted and differentiated to effectively develop and implement promising formative assessment practices within and across this range of national and local contexts and for teachers' and students' needs is remarkable.

Recommendations from project participants for the further development and improvement of the T3LFA project included communicating the positive impacts of this project to date and engaging key stakeholders. This final international research report, and the linked series of national country reports (see Appendix C), provide substantial evidence of the positive impacts of the T3LFA project. With the pressing dual concerns of a global crisis affecting teachers and the teaching profession and of the need to support students' engagement, learning, and equity, the Teacher-Led Learning Circles on Formative Assessment project provides urgent and needed evidence for developing and implementing teacher-led, student-focused formative assessment practices with benefits for teachers' work and for students' learning.

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Appendix A: Data Collection Instruments

This Appendix includes English versions of the data collection instruments that were used by international researchers to gather data for this report:

- Teacher Pre-Survey
- Teacher Post-Survey
- Teacher Codification Framework Questionnaire
- Local Facilitator Questionnaire
- Local Union Representative Questionnaire
- National Researcher Questionnaire

Data collection instruments were also translated into multiple languages for participating countries.

Country	Language(s)
Brazil	Portuguese
Côte d'Ivoire	French
Ghana	English
Malaysia	Malay
South Korea	Korean
Switzerland	English, French, German
Uruguay	Spanish

Teacher Pre-Survey. Part 1: Formative Assessment Practice

	Formative Assessment Practice	Please rate your current level of confidence with using each formative assessment practice. SCALE 5 = Highly Confident 4 = Mostly Confident 3 = Somewhat Confident 2 = Slightly Confident 1 = Not At All Confident	Please rate the extent to which each formative assessment practice is currently embedded in your classroom. SCALE 5 Embedded = happens about 90% of the time 4 Established = happens about 75% of the time 3 Emerging = happens about 50% of the time 2 Sporadic = happens about 25% of the time, 1 Never = does not happen yet
Learning Intentions and Success Criteria			
1.	Learning goals are stated using words that emphasize knowledge, skills, concepts, and/or attitudes.		
2.	Pupils are reminded about links between what they are learning and the overall learning goals.		
3.	Child-friendly language is used to share learning goals with pupils.		
4.	Success criteria related to learning goals are differentiated and shared with pupils.		
5.	Pupils demonstrate that they are using learning goals and/or success criteria while they are working.		
Questioning and Classroom Discussion			
6.	Assessment is used to facilitate classroom discussions.		
7.	Questions are used to elicit pupils' prior knowledge on a topic.		
8.	Pupils are used to share their questions during a lesson		

9.	Pupils' incorrect responses are used to guide teaching and learning.		
10.	Pupils can explain to others what they are learning.		
Feedback			
11.	Feedback to pupils is linked to the original learning goal(s) and success criteria.		
12.	Assessment techniques are used during lessons to help the teacher determine how well pupils understand what is being taught.		
13.	Diagnostic information from standardised tests is used to identify strengths and needs in teaching and learning.		
14.	Pupils are involved in providing information about their learning.		
15.	In preparing to provide pupils with feedback on their learning, the teacher consults their records of achievement against key learning goals.		
Self- and Peer-Assessment			
16.	Pupils are given an opportunity to indicate how challenging they anticipate the learning will be at the beginning of a lesson or activity.		
17.	Pupils are encouraged to record their progress.		
18.	Pupils are encouraged to use a range of assessment techniques to review their own work.		
19.	A visual record of pupils' progress is maintained to track and celebrate pupils' learning and show areas of/for development.		
20.	Time is set aside during parent/guardian teacher meetings for pupils to be involved in reporting on some aspects of their learning.		

Part 2: Professional Development and Teacher Leadership Processes

To what extent have your previous professional development experiences reflected the following qualities? (5 = Highly, 4 = Moderately, 3 = Somewhat, 2 = A Little, 1 = Not At All)

My previous professional development...

21. Was linked to my professional priorities to support my students' learning.
22. Was differentiated to include consideration of my professional experiences and the context I am working in.
23. Provided useful, relevant content linked to my professional development priorities.
24. Involved inquiry and collaborative professional learning to develop my professional expertise.
25. Provided funding, time, and expert resources to enable me to participate in professional development.
26. Was supported by school leaders.

27. Briefly describe your current professional learning goal(s) related to formative assessment and teacher leadership.

Part 3: Demographics

28. Which country do you currently teach in?

- Brazil
- Côte d'Ivoire
- Ghana
- Malaysia
- South Korea
- Switzerland
- Uruguay

29. How many years have you been teaching?

- number rolodex (0 to 50)

30. What level do you currently teach? (check all that apply)

- Primary 1
- Primary 2
- Primary 3
- Primary 4

- Primary 5
- Primary 6
- Primary 7

31. Typically, how many students are in your class?

- 15 or fewer students
- 16-20 students
- 21-30 students
- 31-40 students
- 41-50 students
- 51-60 students
- Over 60 students

31. What is your current school context?

- Urban
- Rural
- Suburban

32. Please select the statement that best describes your access to digital technology in the classroom.

- We have consistent WiFi and each student has a reliable device (e.g., computer or tablet).
- We have consistent WiFi and several reliable devices (e.g., computers or tablets).
- We have WiFi and a few devices (e.g., computers or tablets).
- We have intermittent WiFi and a few unreliable devices (e.g., computers or tablets).
- We do not have WiFi or devices (e.g., computers or tablets) in the classroom.

32. I have learned about formative assessment through: (check all that apply)

- Teacher education courses
- Professional learning initiatives
- Classroom experience
- Self-study
- Conversations with teacher peers
- Conversations with administrators
- Other (please describe)

Teacher Post-Survey. Part 1: Formative Assessment Practice

	Formative Assessment Practice	Please rate your current level of confidence with using each formative assessment practice. SCALE 5 = Highly Confident 4 = Mostly Confident 3 = Somewhat Confident 2 = Slightly Confident 1 = Not At All Confident	Please rate the extent to which each formative assessment practice is currently embedded in your classroom. SCALE 5 Embedded = happens about 90% of the time 4 Established = happens about 75% of the time 3 Emerging = happens about 50% of the time 2 Sporadic = happens about 25% of the time, 1 Never = does not happen yet
Learning Intentions and Success Criteria			
1.	Learning goals are stated using words that emphasize knowledge, skills, concepts, and/or attitudes.		
2.	Pupils are reminded about links between what they are learning and the overall learning goals.		
3.	Child-friendly language is used to share learning goals with pupils.		
4.	Success criteria related to learning goals are differentiated and shared with pupils.		
5.	Pupils demonstrate that they are using learning goals and/or success criteria while they are working.		
Questioning and Classroom Discussion			
6.	Assessment is used to facilitate classroom discussions.		
7.	Questions are used to elicit pupils' prior knowledge on a topic.		
8.	Pupils are used to share their questions during a lesson		

9.	Pupils' incorrect responses are used to guide teaching and learning.		
10.	Pupils can explain to others what they are learning.		
Feedback			
11.	Feedback to pupils is linked to the original learning goal(s) and success criteria.		
12.	Assessment techniques are used during lessons to help the teacher determine how well pupils understand what is being taught.		
13.	Diagnostic information from standardised tests is used to identify strengths and needs in teaching and learning.		
14.	Pupils are involved in providing information about their learning.		
15.	In preparing to provide pupils with feedback on their learning, the teacher consults their records of achievement against key learning goals.		
Self- and Peer-Assessment			
16.	Pupils are given an opportunity to indicate how challenging they anticipate the learning will be at the beginning of a lesson or activity.		
17.	Pupils are encouraged to record their progress.		
18.	Pupils are encouraged to use a range of assessment techniques to review their own work.		
19.	A visual record of pupils' progress is maintained to track and celebrate pupils' learning and show areas of/for development.		
20.	Time is set aside during parent/guardian teacher meetings for pupils to be involved in reporting on some aspects of their learning.		

Please rate your experience with the following barriers to embedding formative assessment in the classroom. (5 = A Significant Barrier, 4 = A Moderate Barrier, 3 = Somewhat of a Barrier, 2 = A Slight Barrier, 1 = Not a Barrier, 0 = Did Not Experience)

21. Assessment policy that emphasizes grading and summative assessment rather than formative assessment practices.
22. A lack of system-wide professional development that supports formative assessment knowledge, beliefs, and practices.
23. Teaching is driven and motivated by large-scale (i.e., state/national) testing.
24. Adopting selective formative assessment practices rather than fully embracing a student-led, feedback-driven teaching practice.
25. Accessibility of digital technology to support formative assessment practices.
26. Other (please describe)

Part 2: Professional Development and Teacher Leadership Processes

To what extent have your previous professional development experiences reflected the following qualities? (5 = Highly, 4 = Moderately, 3 = Somewhat, 2 = A Little, 1 = Not At All)

My previous professional development...

27. Was linked to my professional priorities to support my students' learning.
28. Was differentiated to include consideration of my professional experiences and the context I am working in.
29. Provided useful, relevant content linked to my professional development priorities.
30. Involved inquiry and collaborative professional learning to develop my professional expertise.
31. Provided funding, time, and expert resources to enable me to participate in professional development.
32. Was supported by school leaders.

33. Briefly describe how this project has supported your professional learning goal(s) related to formative assessment and teacher leadership.

Part 3: Demographics

34. Which country do you currently teach in?

- Brazil
- Côte d'Ivoire
- Ghana
- Malaysia
- South Korea
- Switzerland
- Uruguay

35. How many years have you been teaching?

- number rolodex (0 to 50)

36. What level do you currently teach? (check all that apply)

- Primary 1
- Primary 2
- Primary 3
- Primary 4
- Primary 5
- Primary 6
- Primary 7

37. Typically, how many students are in your class?

- 15 or fewer students
- 16-20 students
- 21-30 students
- 31-40 students
- 41-50 students
- 51-60 students
- Over 60 students

38. What is your current school context?

- Urban
- Rural
- Suburban

39. Please select the statement that best describes your access to digital technology in the classroom.

- We have consistent WiFi and each student has a reliable device (e.g., computer or tablet).

- We have consistent WiFi and several reliable devices (e.g., computers or tablets).
- We have WiFi and a few devices (e.g., computers or tablets).
- We have intermittent WiFi and a few unreliable devices (e.g., computers or tablets).
- We do not have WiFi or devices (e.g., computers or tablets) in the classroom.

40. I have learned about formative assessment through: (check all that apply)

- Teacher education courses
- Professional learning initiatives
- Classroom experience
- Self-study
- Conversations with teacher peers
- Conversations with administrators
- Other (please describe)

Teacher Codification Framework Questionnaire

Instructions for Teachers

The purpose of this questionnaire is to showcase how formative assessment practices are supporting the students of teachers participating in the Teacher-Led Learning Circles project.

As a teacher participant, we invite you to share one or two formative assessment practices you have tried during the project.

Your responses are *optional* and can be used to inform your Teacher Vignette within the project. Your responses will also be used to:

- inform national reports on effective formative assessment practices in participating countries; and
- inform the international project report and final codification framework on effective formative assessment practices and lessons learnt about ineffective practices to facilitate large-scale uptake across countries.

1. Think about one formative assessment practice you have tried during the Teacher-Led Learning Circles project.

**1a) What category does this formative assessment practice fall under?
(Check all that apply.)**

<input type="checkbox"/> <i>Learning Intentions and Success Criteria</i>
Teachers communicate or co-construct the knowledge, skills, and concepts students need to learn and how students will demonstrate their learning.
<input type="checkbox"/> <i>Questioning and Classroom Discussion</i>
Teachers facilitate questioning and classroom discussion to deepen student learning and provide in-the-moment feedback for next steps.
<input type="checkbox"/> <i>Feedback</i>
Teachers provide ongoing feedback to close the gap between where the student is and their learning goals.
<input type="checkbox"/> <i>Self- and Peer-Assessment</i>
Teachers foster students' self- and peer-assessment to promote community learning, student ownership in learning, and learner agency.
<input type="checkbox"/> <i>Other</i>
The formative assessment practice I tried did not fall under any of the categories above.

1b) Briefly describe the specific formative assessment practice you tried. (100-250 words maximum)

1c) Why did you decide to try this formative assessment practice? (100-250 words maximum)

1d) How did this formative assessment practice support your students? (100-250 words maximum)

1e) Would you like to share another formative assessment practice that you have tried in the Teacher-Led Learning Circles project?

- Yes. (If YES, go to Question 2.)
 No. (If NO, go to End.)

2. Think about another formative assessment practice you have tried during the Teacher-Led Learning Circles project.

2a) What category does this formative assessment practice fall under? (Check all that apply.)

<input type="checkbox"/> <i>Learning Intentions and Success Criteria</i> Teachers communicate or co-construct the knowledge, skills, and concepts students need to learn and how students will demonstrate their learning.
<input type="checkbox"/> <i>Questioning and Classroom Discussion</i> Teachers facilitate questioning and classroom discussion to deepen student learning and provide in-the-moment feedback for next steps.
<input type="checkbox"/> <i>Feedback</i> Teachers provide ongoing feedback to close the gap between where the student is and their learning goals.
<input type="checkbox"/> <i>Self- and Peer-Assessment</i> Teachers foster students' self- and peer-assessment to promote community learning, student ownership in learning, and learner agency.
<input type="checkbox"/> <i>Other</i> The formative assessment practice I tried did not fall under any of the categories above.

2b) Briefly describe the specific formative assessment practice you tried. (100-250 words maximum)

2c) Why did you decide to try this formative assessment practice? (100-250 words maximum)

2d) How did this formative assessment practice support your students? (100-250 words maximum)

Thank you for your time and insights!

Local Facilitator Questionnaire

Teacher-Led Learning Circles on Formative Assessment (T3LFA): Local Facilitator Questionnaire

The purpose of this questionnaire is to gather the perspectives of local facilitators involved in the Teacher-Led Learning Circles on Formative Assessment (T3LFA) project.

As a local facilitator, you have important insights into how the T3LFA project supported participating teachers' formative assessment practices and teacher leadership. This questionnaire includes a total of 14 questions about the following 4 topics:

1. Demographics (1 question)
2. Challenges and supports you experienced in your Learning Circle (4 questions)
3. Effective formative assessment practices you identified (6 questions)
4. How your Learning Circle supported teacher leadership (3 questions)

Your responses will feed into a detailed strategy to encourage the large-scale uptake of effective practices and lessons learned to replicate the Teacher-led Learning Circle process in

your country and internationally.

Once completed, please **send this document back** to the Education International team at the email address: teacherled@ei-ie.org **by March 31, 2024**. If you have any questions regarding the questionnaire, do not hesitate to contact the team at the same email address.

1. Demographics

1. Which country do you currently work in?

- Brazil
- Côte d'Ivoire
- Ghana
- Malaysia
- South Korea
- Switzerland
- Uruguay

2. What challenges and supports did you encounter in your Learning Circle?

This section encourages you to reflect on the challenges and supports you experienced when facilitating workshops. The questions below are intended to guide your reflection. Please answer them in as much detail as possible.

1. Think back to your first workshop session. In what ways have the workshops improved throughout the duration of the project? What more is there to be done to make the workshops a better space for the continuous professional learning and development of teachers?

2. Did the participating teachers discuss any barriers to identifying and implementing effective formative assessment practices in their classrooms? What were these barriers, and how did teachers overcome them?

3. Were there any challenges to teachers collaboratively identifying and exploring effective formative assessment practices within your workshop sessions? What were these challenges, and were the teachers in your workshop able to overcome these challenges as a group?

4. How were you best supported in being a facilitator for the Teacher-Led Learning Circles Project? Were there any tools or forms of support that were missing from your workshops that would have helped you help teachers identify and implement effective formative assessment practices in their classrooms?

3. What effective formative assessment practices did you identify in your Learning Circle?

This section encourages you to reflect on the effective formative assessment practices identified when facilitating workshops. The questions below are intended to guide your reflection. Please answer them in as much detail as possible.

- 1. What kinds of formative assessment practices did teachers list as using in their classrooms before participating in your Learning Circle?**
- 2. What goals did teachers have for developing their formative assessment practices before participating in your Learning Circle? Were their goals related to overcoming any specific problems that they faced in the classroom?**
- 3. How has teachers' participation in your Learning Circle helped them to achieve their formative assessment goals?**
- 4. What are the effective formative assessment practices that teachers have identified within your Learning Circle?**
- 5. How have the effective formative assessment practices identified by teachers in your Learning Circle affected their students' learning outcomes?**
- 6. How might these effective formative assessment practices be communicated to the government ministry to convince them to provide institutional time for continuous professional learning and development in formative assessment?**

4. How did your Learning Circle support teacher leadership?

This section encourages you to reflect on how the Learning Circles supported teacher leadership and provide guidance for educators who may want to replicate the Teacher-Led Learning Circles process. The questions below are intended to guide your reflection. Please answer them in as much detail as possible.

- 1. How did the Teacher-Led Learning Circles Project support teacher leadership in your context? (Consider impacts on teacher leadership in classrooms, schools, and the wider community.)**
- 2. What advice would you give to educators facilitating Teacher-Led Learning Circles focused on formative assessment and teacher leadership?**
- 3. What advice would you give to teachers participating in Teacher-Led Learning Circles focused on formative assessment and teacher leadership?**

Local Union Representative Questionnaire

Teacher-Led Learning Circles on Formative Assessment (T3LFA): Local Union Representative Questionnaire

The purpose of this questionnaire is to gather the perspectives of local union representatives involved in the Teacher-Led Learning Circles on Formative Assessment (T3LFA) project.

As a local union representative, you have important insights into how the T3LFA project supported participating teachers' formative assessment practices and teacher leadership in your country. This questionnaire includes a total 4 questions on the following topics:

1. Demographics
2. Professional learning processes that supported teachers
3. Promising teacher-led formative assessment practices
4. Lessons learned to inform successful implementation of Teacher-Led Learning Circles

Your responses will feed into a detailed strategy to encourage the large-scale uptake of effective practices and lessons learned to replicate the Teacher-led Learning Circle process in your country and internationally.

Once completed, please **send this document back** to the Education International team at the email address: teacherled@ei-ie.org **by March 31, 2024**. If you have any questions regarding the questionnaire, do not hesitate to contact the team at the same email address.

1. Demographics

1. Which country do you currently work in?

- Brazil
- Côte d'Ivoire
- Ghana
- Malaysia
- South Korea
- Switzerland
- Uruguay

2. What professional learning processes supported teachers' formative assessment practices in your country?

This question encourages you to reflect on your country's evidence of how Teacher-Led Learning Circles supported teachers' formative assessment practices. Please answer in as much detail as possible.

3. What promising teacher-led formative assessment practices were identified in your country?

This question encourages you to reflect on your country's evidence of the promising teacher-led formative assessment practices that were identified. Please answer in as much detail as possible.

4. Based on your country's experiences and evidence, what lessons can be learned to inform the successful implementation of Teacher-Led Learning Circles to support teachers' professional learning and use of formative assessment?

This question encourages you to reflect on your country's experiences and evidence to provide lessons learned about how to successfully implement Teacher-Led Learning Circles to support teachers' professional learning and formative assessment practices.

The following prompts are potential topics for consideration in your response:

- a) What lessons have you learned in your country about implementing Teacher-Led Learning Circles to support formative assessment practices?
- b) What are key features of successful Teacher-Led Learning Circles to support teachers' professional learning and use of formative assessment?
- c) What are key barriers to successful Teacher-Led Learning Circles to support teachers' professional learning and use of formative assessment and strategies, if any, to address these barriers?
- d) What are your country's next steps and priorities in teacher-led formative assessment professional learning and practice?
- e) What advice would you give to others wanting to engage in Teacher-Led Learning Circles focused on formative assessment and teacher leadership in their context?
- f) How has this project helped you advocate for teacher professional learning at the national level?

National Researcher Questionnaire

Teacher-Led Learning Circles on Formative Assessment (T3LFA): National Researcher Questionnaire

The purpose of this questionnaire is to gather the perspectives of national researchers involved in the Teacher-Led Learning Circles on Formative Assessment (T3LFA) project.

As a national researcher, you have important insights into how the T3LFA project supported participating teachers' formative assessment practices and teacher leadership in your country. This questionnaire includes a total 4 questions on the following topics:

1. Demographics
2. Professional learning processes that supported teachers
3. Promising teacher-led formative assessment practices
4. Lessons learned to inform successful implementation of Teacher-Led Learning Circles

Your responses will feed into a detailed strategy to encourage the large-scale uptake of effective practices and lessons learned to replicate the Teacher-led Learning Circle process in your country and internationally.

Once completed, please **send this document back** to the Education International team at the email address: teacherled@ei-ie.org **by March 31, 2024**. If you have any questions regarding the questionnaire, do not hesitate to contact the team at the same email address.

1. Demographics

1. Which country do you currently work in?

- Brazil
- Côte d'Ivoire
- Ghana
- Malaysia
- South Korea
- Switzerland
- Uruguay

2. What professional learning processes supported teachers' formative assessment practices in your country?

This question encourages you to reflect on your country's evidence of how Teacher-Led Learning Circles supported teachers' formative assessment practices. Please answer in as much detail as possible.

3. What promising teacher-led formative assessment practices were identified in your country?

This question encourages you to reflect on your country's evidence of the promising teacher-led formative assessment practices that were identified. Please answer in as much detail as possible.

4. Based on your country's experiences and evidence, what lessons can be learned to inform the successful implementation of Teacher-Led Learning Circles to support teachers' professional learning and use of formative assessment?

This question encourages you to reflect on your country's experiences and evidence to provide lessons learned about how to successfully implement Teacher-Led Learning Circles to support teachers' professional learning and formative assessment practices.

The following prompts are potential topics for consideration in your response:

- a) What lessons have you learned in your country about implementing Teacher-Led Learning Circles to support formative assessment practices?
- b) What are key features of successful Teacher-Led Learning Circles to support teachers' professional learning and use of formative assessment?
- c) What are key barriers to successful Teacher-Led Learning Circles to support teachers' professional learning and use of formative assessment and strategies, if any, to address these barriers?
- d) What are your country's next steps and priorities in teacher-led formative assessment professional learning and practice?
- e) What advice would you give to others wanting to engage in Teacher-Led Learning Circles focused on formative assessment and teacher leadership in their context?
- f) How has this project helped you advocate for teacher professional learning at the national level?

National Report Part 2: Final Country Profile Template

Purpose of Template:

The purpose of this template is to provide a guiding structure for national researchers' final reports (i.e., National Report Part 2: Final Country Profile) in the Teacher-Led Learning Circles on Formative Assessment (T3LFA) Project.

Each country's final report will identify, codify, and describe effective formative assessment practices and the linked Teacher-Led Learning Circles experiences in their country.

Final reports will include:

- **Part 1: Country Profile** – review of existing policies, practices, and research on professional development for teachers’ use of formative assessment in each country.
 - National Report 1 updated if needed based on any policy or research updates or new documents and literature that now exist since writing original report, and any feedback from international researchers.
- **Part 2: Country Findings** –
 - Description of the design and implementation of Teacher-Led Learning Circles in the country, for example, approach to selecting teachers, number of teachers involved, how many schools these teachers work in, engagement of teacher unions, government (if any) and other partners.
 - Analyses of Teacher-Led Learning Circles data to provide findings linked to international research questions. Data sources to include:
 - Action Plans, Portfolios, Reflections, and Vignettes created by participating teachers
 - Teacher Pre/Post Surveys and Teacher Codification Framework Questionnaire responses
 - Local Facilitator/Union Representative Questionnaires
 - Any further observations and evidence gathered by national researcher(s)

Estimated length of final report:

- 20-30 pages (single-spaced lines)

Please note:

- The National Report Part 1: Country Profile (updated as needed) will be the first part of the National Report Part 2: Final Country Profile.
- The National Report Part 2: Final Country Profile should be a case study of publishable quality (attributed to the original authors).

National Report Part 2: Final Country Profile **Template**

Part 1: Country Profile

National Context

Overview of national education system, governance, education policies, demographic information

- number of schools, number of students, student demographics in country
- information about student achievement and equity in country
- other contextual information considered important for national and international readers (for example, professional, media and public opinion about education in country)
- additional information based on feedback from international researchers

National Assessment Policies

Summary and discussion of current national (and/or local as relevant) assessment policies

- 1-2 paragraph overview of school education assessment policies (primary through secondary)
- cite main policy documents used

Teacher Professional Learning and Practice of Formative Assessment

Discussion of existing professional learning context and professional development for teachers' use of formative assessment

- emphasis on primary grade levels
- briefly describe union representatives' usual involvement in teacher professional learning initiatives and teacher unions' perspectives on formative assessment
- cite sources used

Formative Assessment Research Review

Review of relevant research literature on the above topics within specific country to be integrated in report.

- cite sources used

If available, a brief summary (1-2 paragraphs maximum) of formative assessment practices being used by teachers at the start of the Teacher-Led Learning Circles Project.

- emphasis on primary grade levels

Part 2: Country Findings

As you complete Part 2 of your final report, please consider the various data sources you have gathered throughout the project to support your responses in each section.

- **POSSIBLE DATA SOURCES:** Teacher Reflections, Teacher Vignettes, Teacher Post Surveys, Teacher Codification Framework Questionnaires, Local Facilitator/Union Representative Questionnaires, other observations and evidence gathered in the project
- Consider adding a supporting story about how teachers implemented formative assessment from a Teacher Vignette, the Teacher Codification Framework Questionnaire, or other observations

National Approach to Teacher-Led Learning Circles

Description of approach to Teacher-Led Learning Circles in country, for example approach to selecting teachers and to implementing the project. Including:

- Schools:
 - number of schools in the project
 - how/why each school was selected
 - brief description of each school context (e.g., urban/rural, size)
- Participants:
 - number of teachers, local facilitators, and local union representatives in the project (beginning and end)
 - other national partners (e.g., government), if applicable
 - participant recruitment process
 - eachers demographics from Pre/Post Teacher Surveys

Promising Teacher-led Formative Assessment Practices

Introduction

This section responds to Research Question 1 and associated sub-questions (1a-e):

1. In the Teacher-Led Learning Circles in [name of country], what promising teacher-led formative assessment practices were identified?

Teacher Formative Assessment Practices

b. What teacher-led formative assessment practices were used, and how were they implemented?

- Focus on the key formative assessment practices teachers used in your country
- If possible, consider grouping or linking the formative assessment practices into these themes as appropriate: (1) learning intentions and success criteria, (2) questioning and classroom discussion, (3) feedback, (4) self- and peer-assessment, and (5) other.

Technology and Formative Assessment

c. How did technology support the implementation of formative assessment practices?

Formative Assessment and Student Feedback

d. Which teacher-led formative assessment practices provided effective feedback to students?

Benefits of Formative Assessment for Teachers' Practices

e. What benefits from using formative assessment were identified for teachers' practices?

Benefits of Using Formative Assessment for Students' Learning

f. What benefits from using formative assessment were identified for students' learning?

Professional Learning Processes to Support Teachers' Formative Assessment Practices

Introduction

This section will respond to Research Question 2 and associated sub-questions (2a-b):

2. In the Teacher-Led Learning Circles in [name of country], what professional learning processes supported teachers' formative assessment practices?

Professional Learning Supports for Teachers

c. How were teachers supported in developing and implementing formative assessment practices? (e.g., within the Learning Circles, within their schools and classrooms)

Supports and Barriers to Teachers' Use of Formative Assessment

d. What helped or hindered effective implementation of formative assessment practices?

Part 3: Conclusions and Next Steps

This section summarizes your country's key findings from the Teacher-Led Learning Circles Project, articulates next steps for Teacher-Led Learning Circles in your country, and provides advice for other countries seeking to implement Teacher-Led Learning Circles.

Summary of Findings

Based on data and findings from the Teacher-Led Learning Circles in your country, please summarize the following information:

- a) Key features of effective teacher-led formative assessment practices for students
- b) Main benefits of the use of formative assessment practices for teachers
- c) Key characteristics of professional learning that support teachers' formative assessment practices
- d) Key barriers to effective formative assessment for teachers and students and strategies, if any, to address these barriers

Next Steps for Teacher-Led Learning Circles

Based on your country's experiences in the Teacher-Led Learning Circles Project, please provide the following information:

- a) Next steps and priorities for your country in teacher-led formative assessment professional learning and practice, based on learning and experiences in this project
- b) Recommendations from local union representatives for spreading Teacher-Led Learning Circles in your country
- c) Any lessons learned or suggestions for other countries seeking to implement Teacher-Led Learning Circles.

Appendix B: Promising Formative Assessment Practices

Promising Formative Assessment Practices	Observed Benefits for Students	Observed Benefits for Teachers	Countries that Reported Using the Practice
<p>Learning Intentions and Success Criteria Teachers communicate the knowledge, skills, and concepts students need to learn and how students will demonstrate their learning.</p>			
Observation behaviour guides and checklists	Success criteria were visible to students	Enhanced assessment reliability	Brazil, Ghana, South Korea
Exit and entry tickets	Accelerated student learning; students practiced self-assessing; enhanced metacognition; made student progress within a lesson visible; increased engagement in writing processes; enhanced confidence and motivation to learn; students internalized key guiding questions	Helped teachers monitor student understanding and achieve learning intentions; provided an efficient assessment method; provided feedback to the teacher; guided teaching and learning	Malaysia, South Korea
Differentiated analytic rubrics	Self-assessment was easier for students and tailored to their needs	Facilitated efficient and timely student self-feedback and peer feedback	South Korea, Switzerland
Rubric co-construction with students	Enhanced students' understanding of success criteria; facilitated student self-reflection	Provided students with tools to self- and peer-assess, helping teachers facilitate self- and peer-assessment; helped teachers engage student voice in assessment	Uruguay

Questioning and Classroom Discussion Teachers facilitate questioning and classroom discussion to deepen student learning and provide in-the-moment feedback for next steps.			
Think-pair-share	Fostered greater appreciation for the learning that their peers can support; increased interest in class topics; deeper reflection on learning intentions; more democratic teaching environment	Supported valuable insights for enhanced teaching and learning	Ghana, Uruguay
Individual conferences with students before meetings with parents	Students negotiated interpretations of teachers' assessment evidence; enhanced self-advocacy and professionalism; received more individualized feedback and tailored questions	Helped teachers gauge student understandings; enhanced student trust	Ghana, South Korea, Switzerland
Know Wonder Learn (KWL) charts	Supported student inquiry; enhanced curiosity and engagement	Made students' prior knowledge visible; catalyzed rich discussions; generated student questions to guide teacher support	South Korea, Uruguay
Discussion circles with guided questioning on books or topics	Enhanced interest in reading and classroom topics; learning and progress were made visible; increased confidence and self-esteem; fostered student participation	Facilitated class discussion	Brazil, Uruguay
Class debates about readings	Increased students' argumentative capacity	Enhanced and made more visible students' reasoning and higher order thinking skills	Brazil
Feedback Teachers provide ongoing feedback to close the gap between where the student is and their learning goals.			
The teacher provides descriptive feedback	Helped make student learning and progress visible to students; highlighted learning intentions	Helped make student learning and progress visible to teachers	Brazil, Côte d'Ivoire, Malaysia
Collaborative feedback / ongoing learning dialogues: teachers cultivate ongoing dialogues about learning, encouraging questioning and peer and self-feedback	Students saw learning as a collaborative process; greater engagement in learning; stimulated deeper cognitive processing; contributed to a supportive and collaborative classroom culture	Efficient and timely delivery of feedback; observing and engaging in dialogues guided teaching; increased opportunities for teachers to ask questions that provoked learner-directed assessment	Malaysia, South Korea, Switzerland, Uruguay

Feedback-supporting technologies (e.g., Teams, WhatsApp, Google Classroom)	Students received feedback in a new medium; greater access to feedback and support from teachers and peers; self-documentation tools for students to foster peer and self-assessment (e.g., tables in Excel or Microsoft Word); students provided more accurate self-feedback and reports of their progress to parents; enhanced self-regulated learning	Teachers could share resources with students, especially when physical resources were limited; enhanced visibility for parents in students' work and feedback, catalyzed communication between teachers and parents; supported teachers' documentation of student learning (e.g., tables in Excel, reports on Canva)	Brazil, South Korea, Switzerland
Time for revision/ rewriting: dedicated time for students to revise work based on teacher, peer, or self-feedback	Enhanced sense of autonomy; enhanced critical thinking and self-assessment skills	Made students' learning processes and progress visible to teachers	Uruguay
<p>Self- and Peer-Assessment Teachers foster students' self- and peer-assessment to promote community learning, student ownership in learning, and learner agency.</p>			
Process-oriented peer- assessment: students correct or review each other's work and discuss their process/approach using criteria	Increased ability to articulate their thinking; enhanced performance on learning tasks; refined communication; clarified understandings; enhanced metacognition; enhanced logical reasoning	Made visible students' reasoning and learning processes to support teacher interventions	Brazil, Côte d'Ivoire, Ghana, South Korea, Uruguay
Collective corrections: students share their writing or read for the class and peers and the teacher provide feedback or ask questions	Activating student voice; enhanced engagement and participation; improved reading and writing performance; increased student questioning leading to clarifications and consolidation; enhanced communication and critical thinking skills; students could make corrections immediately; encouraged collaborative learning; enhanced listening and comprehension skills	Reduced teacher responsibility in assessment and learning processes; teacher (and peers) could immediately provide feedback and intervene	Brazil, Ghana, Malaysia, Uruguay

Ongoing self-reflection journals	Students used notebooks to document/track their learning about core concepts over time; enabled students to generate and share questions with each other and discuss answers	Provided records of learning which teachers could use to generate formative feedback	Brazil, South Korea, Switzerland
Co-developing mark schemes or rubrics for self- and peer-assessment with students	Improved achievement; greater comfort with assessing and reflecting on their own learning; students thought more deeply about learning intentions and success criteria; enhanced participation and understanding of what they need to do; students provided specific self-feedback	Activated multiple sources of feedback for students, reducing their reliance on teacher feedback	Ghana, South Korea, Switzerland, Uruguay
Encouraging explicit student self-assessment using learning criteria	Students saw their mistakes and progress; increased ownership of the learning process; students reflected on their behaviour and conduct in schools	Fostered more feedback in the classroom	Brazil, Uruguay
Visual indicators to signal assessment of understanding (e.g., traffic light card, coloured cups)	Enhanced critical thinking; more sophisticated self-assessment	Helped teachers identify students in need of assistance in-the-moment; students took ownership of their learning and became more self-directed, reducing reliance on the teacher	South Korea, Uruguay

Appendix C: Country Case Studies

Brazil Case Study

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Professor

Faculty of Education, School Administration Department, Federal University of Minas Gerais

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Côte d'Ivoire Case Study

Professor Claude KOUTOU

Professor

Université Félix Houphouët Boigny

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Ghana Case Study

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Malaysia Case Study

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Associate Professor

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South Korea Case Study

Professor Sun Kim

Research Professor

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Switzerland Case Study

Dr. Robbert Smit

Researcher and Lecturer

St. Gallen University of Teacher Education, Switzerland

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Uruguay Case Study

Dra. Eloísa Bordoli

Professor and Researcher

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Learning Circles
for Formative Assessment
Education International

FULL REPORT OF INTERNATIONAL RESEARCH FINDINGS



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