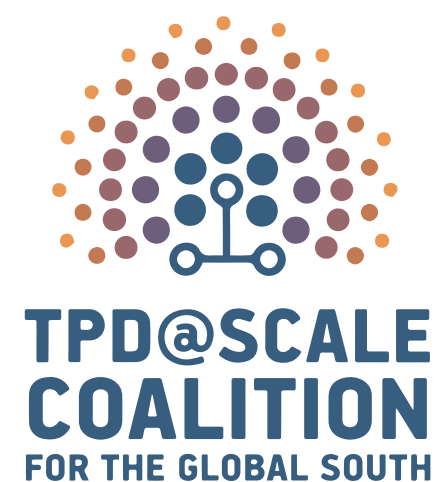# TPD @ SCALE

Compendium

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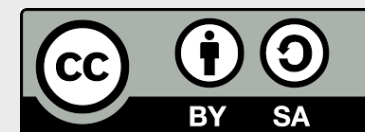Quezon City 1104 Philippines

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Acknowledgements

Acronyms

BLF
Building Learning Foundations

CLIx
Connected Learning Initiative

CoP
communities of practice

CPE
Computadores para Educar

EiA
English in Action

ELLN Digital
Early Language, Literacy and Numeracy Digital

EnFoCo
En Formación Continua

ICT
information and communications technology

ICT4RED
Information Communication Technology for Rural Education Development

IDRC
International Development Research Centre

LMS
learning management system

MOOC
massive open online course

OER
open educational resources

PACD
Programa de Actualización Curricular Docente

PDSA
Plan-Do-Study-Act

PLC
professional learning community

PRIMR
Primary Math and Reading

PRONIE
Programa Nacional de Informática Educativa

SMS
short messaging system

SUMMA
Laboratory of Education Research and Innovation for Latin America and the Caribbean

TAG
teacher activity group

TCTP
Tu Clase, Tu País

Tejas
Technology Enabled Education through Joint Action and Strategic Initiatives

TESSA
Teacher Education in Sub-Saharan Africa

TESS-India
Teacher Education through School-based Support in India

TPD
teacher professional development

UNESCO
United Nations Educational, Scientific and Cultural Organization

VLE
virtual learning environment

ZEST
Zambian Education School-based Training

Introduction

This Compendium is a knowledge product resulting from the activities of the TPD@Scale Coalition for the Global South. It offers examples of large-scale or potentially scalable information and communications technology (ICT)-mediated teacher professional development (TPD) programs across low- and middle-income countries. The Compendium describes the key features of each TPD program, their contexts, the needs they seek to meet, how ICT is deployed, and whether and how they strive for equity in making available meaningful professional learning experiences for *all* teachers.

The TPD@Scale Coalition uses the working definition of TPD as a long-term, continuous process involving regular opportunities to "develop an individual's skills, knowledge, expertise and other characteristics as a teacher" (OECD, 2009, p. 49). This may include formal courses, non-formal training activities (such as workshops and seminars), and informal experiences (such as participation in a professional learning community). More importantly, effective TPD is planned systematically and designed to promote growth and development in the profession (Villegas-Reimers, 2003).

The provision of quality TPD *at scale* is imperative to support movement towards equity in learning for all students across the globe. Developing large-scale, high-quality TPD programs requires consideration of issues of *magnitude* and *variation.* In TPD provided on a small scale such as during a pilot, conditions can be chosen or adapted to achieve success, for example by working in schools with better connectivity or supportive school leaders. The same results can rarely be achieved by merely replicating the TPD program more widely with more teachers in more places. Furthermore, resource constraints, such as lack of funding or of skilled experts, often limit effective scaling.

To work effectively at a large scale, program designers need to consider how they manage available resources most effectively. It will not be possible to achieve the same results by merely replicating small-scale programs all over the country.

For example, we know that coaching is an effective form of TPD but it is highly resource intensive and there are often insufficient numbers of skilled coaches across the whole country. The temptation might be to use structured materials instead of coaches. There are indeed situations where structured interactive learning materials can fully replace in-person interactions, such as lectures or workshops, but they are rarely able to provide sustained follow up or support social learning. Designers will need to plan instead how to effectively harness their most valuable resource – the teachers themselves – for peer mentoring and peer assessment, among others.

TPD programs delivered at scale need to make appropriate provisions available across large numbers of different settings that may be highly dispersed. To do so successfully, program designers need to consider variations in teachers' knowledge, skills, attitudes, and existing working patterns and practices as well as variations in school culture, resources, and priorities. All these need to be understood and considered, from the initial design stage through to program implementation and evaluation, using adaptive programming. The examples in this Compendium show how **using ICTs can open up new possibilities in the design of large-scale TPD programs.** Used in pedagogically sound ways, ICTs can facilitate the creation and delivery of high-quality, affordable TPD that is made available in different forms appropriate to the context and local needs.

However, successful scaled interventions must not only manage issues of magnitude and variation, they should also be sustainable, empowering local communities to own and sustain the reform in an equitable manner (Coburn, 2003). Many of the TPD@Scale programs described here ran for a fixed period but several of them, by working holistically across the system, disrupted existing models of large-scale TPD and prompted system shifts in TPD design, such as the *Programa de Actualización Curricular Docente* (PACD) in Ecuador (*see Profile 16*), Technology Enabled Education through Joint Action and Strategic Initiatives (Tejas) in India (*see Profile 4*), and Information Communication Technology for Rural Education Development (ICT4RED) in South Africa (*see Profile 15*). This bodes well for sustainability of the TPD@Scale approach and a shift from supply-driven provision to demand-initiated learning opportunities for professionals.

Finally, in studying large-scale ICT-mediated TPD programs in the work of the TPD@Scale Coalition, we utilize the lenses of equity,

quality, and efficiency. These are explored in briefing papers on equity (Fletcher-Campbell & Soler, 2022), successful TPD (Boateng & Wolfenden, 2022b), cost-effectiveness (Ndaruhutse, 2022), and assessment in large-scale TPD (Boateng & Wolfenden, 2022a) prepared for the TPD@Scale Coalition and have been referred to here where relevant data is available. "Equity" within TPD is understood as equity in learning for teachers that supports them to respond to the learning needs of all their pupils, which in turn contributes to increased pupil participation and learning gains (Fletcher-Campbell & Soler, 2022). On the other hand, for TPD programs to meet "quality" criteria, they need to draw on established features of effective professional learning, which disciplined inquiry has shown to lead to changes in teaching practice such that pupils learn better (Boateng & Wolfenden, 2022b). "Efficiency," meanwhile, refers to the use of resources in ways that ensure quality and equity while recognizing that the two exist in a delicate balance, and different contexts and needs may demand compromise or prioritization of one factor over others (Ndaruhutse, 2022).

In selecting the TPD@Scale examples featured here, we have focused on programs that illustrate how design choices, including those around ICTs, have been informed by an understanding of the educational setting as well as teachers' professional learning needs, and that regard teachers as partners in the education endeavor. The selected examples are all from programs implemented after 2010. We have included summaries and links to evaluation data from programs where these are available.

The Compendium intends to serve as a reference for government actors and other education stakeholders involved in the design and implementation of TPD. It is not intended as a global showcase of large, or potentially scalable, ICT-mediated TPD programs, nor is it a guide on how to scale TPD. Rather, it aims to show how effective TPD mediated by ICTs can take multiple forms depending on the features of the educational setting, purpose of the program, professional learning needs of the teachers, and available resources including ICTs. Through the Compendium, we hope to encourage TPD designers to move away from embedded "cascade models" and to

utilize ICTs to enable access to quality professional learning experiences especially for teachers working in underserved communities and with limited access to professional resources.

The Compendium is informed by detailed landscape reviews on ICT-mediated TPD programs conducted for the TPD@Scale Coalition by SAIDE and SUMMA (Laboratory of Education Research and Innovation for Latin America and the Caribbean). These reviews employed analytical frameworks informed by the principles underpinning TPD@Scale (see TPD@Scale Coalition for the Global South, 2021); literature reviews; interactions with key stakeholders at international conferences; email exchanges with relevant program staff, experts and stakeholders; and interviews with program implementers.

Analysis of these reviews by the lead authors identified 17 programs to be profiled. Documentation for these programs was revisited and additional information was collected from program representatives, some of whom were also interviewed to ensure accuracy in the profiling.

This Compendium complements a TPD@Scale Framework working paper (Wolfenden, 2022) from the TPD@Scale Coalition as well as the briefing papers mentioned above.

ICT-mediated TPD

Technology as a tool to support learning is a core feature of TPD@Scale programs. In particular, ICTs are seen to offer potential to improve equity, quality, and efficiency in TPD programs, specifically those involving large numbers of teachers. When describing the ways in which digital technologies are used, it is important to distinguish between the role played by the technology and the actual device or software used. While the nature and availability of ICTs are influential in what teachers are able and motivated to do at any one point in time or place, the form and availability of ICTs are liable to shift rapidly as infrastructure improves, the cost of devices diminishes, and teachers become more confident and skilled users of technology. For program sustainability, the focus needs to be on transforming TPD experiences through appropriate use of the affordances of ICTs rather than on selecting specific devices or software.

The programs featured in this Compendium illustrate four areas where ICTs support teachers' professional learning in programs offered at scale, as shown in Figure 1. These areas are not discrete; for example, online courses often support communities of practitioners. However, this categorization may be helpful in identifying where ICTs might be used in TPD to alleviate some of the challenges of magnitude and variation associated with working at scale and to enhance quality and equity in TPD.

Figure 1. Uses of ICTs in TPD@Scale Programs

Creating, organizing, and differentiating learning resources

Repositories of online/offline learning materials (e.g., text, audio, video)

Open content adaptable for local contexts (e.g., language, culture, curriculum)

Building professional communities

Developing networks, relationships, and collaboration; enhancing social and professional capital

Social messaging/media platforms (e.g., WhatsApp, Telegram, Facebook)

Improved Equity

Increasing access to and participation in formal/informal courses

Online/Offline courses or learning episodes; massive open online courses (MOOCs)

Multiple forms of assessment and recognition

Enabling mentoring and coaching

Photographs and videos of classroom practice providing mediating objects for mentor dialogue, where undertaken *in situ* or remotely

Communication with remote mentors and coaches

Technology enables content (e.g., teacher learning activities, classroom resources, and subject content) to be organized and distributed more easily to large numbers of teachers and hence to substitute for face-to-face teaching when working at scale. Equally important, the use of digital content enables curriculum designers to move towards full inclusion of all teachers through more easily creating different versions and modalities of the content in order to meet diverse learning needs.

The use of open licenses, as demonstrated in Teacher Education in Sub Saharan Africa (TESSA) (*see Profile 2*), Teacher Education through School-based Support in India (TESS-India) (*see Profile 1*), ICT4RED in South Africa, and the IT for Change projects in India, unlocks this adaptation process further by reducing resource demands and facilitating iterative enhancement of materials. The Zambian Education School-based Training (ZEST) program (*see Profile 13*), for instance, draws on TESSA open educational resources (OER) while the ICT4RED OER have been taken up by a range of subsequent programs. The use of OER enables teachers and other educators to exercise agency in adapting content for different linguistic, cultural, and curriculum contexts and specific professional learning needs (*For further discussion on this localization, see Section 1.*).

How this learning content is accessed by teachers will depend on factors such as the facilities available to them, their digital skills and identity, and how the content is intended to be used. The programs described in this Compendium utilize a range of modes for content delivery including traditional print, e.g., ZEST; short messaging service or SMS, e.g., the UNESCO Mobile Project (*see Profile 12*); offline formats, e.g., Early Language, Literacy, and Numeracy Digital (*see Profile 17*); and fully online courses, e.g., massive open online courses or MOOCs as in the example from the Peking University X-Learning Centre (*see Profile 9*).

Digital technologies can facilitate the social interactions that are critical to learning and to integrating new approaches into teachers' professional repertoire. Through participation in groups on social messaging or social media platforms, or through online course forums, teachers can reflect with peers on how new practices are working and what is being improved; through support from their peers, they may be encouraged to take risks to make changes in their practice. As yet there is only limited understanding of how these informal online professional communities can best supply intellectual, social, and material

resources for teacher learning. Nevertheless, teachers value participation in these online communities, as evidenced by initiation of these spaces by teachers themselves outside formal program structures. The TESS-India and Peking University MOOC programs provide evidence of this.

Digital technologies increasingly enable teachers who were previously isolated to work with peer or expert mentors in different geographic locations. These connections are critical to their identity as members of a professional community. In the Teachers for Teachers program in Kikuma, Kenya *(see Profile 6)*, for example, teachers working in the difficult conditions of a refugee camp are connected to their peers within the camp and to mentors thousands of miles away through WhatsApp groups. Through these connections, teachers are able to regularly discuss their practice and receive specific, constructive suggestions about how to improve their teaching. In the Brazilian Ceará program *(see Profile 7)*, on the other hand, Skype calls are combined with sharing of classroom videos through a secure site to enable remote mentoring for school-based pedagogical leaders.

Organization of the Compendium

The Compendium is organized into five sections, each illustrating how TPD developers have approached a specific "*at scale*" design challenge in different, often innovative ways depending on the context, professional learning needs of the teachers, and resources available. Many programs exemplify a number of these challenges and are cross-referenced. The focus throughout is on what can be **achieved at scale** across different settings while paying attention to features such as quality, equity, and efficiency where data is available.

Section 1

Designing at scale, adapting locally

Teachers' professional learning needs are diverse, complex, dynamic, and related to the educational settings in which they teach. Too frequently, however, teachers are required to engage in TPD where the learning outcomes are not relevant to their professional learning priorities or where they are unable to participate fully for various reasons. For instance, travel to a teachers' training location may be problematic because it is unsafe or there is a lack of transport, or teachers may not feel comfortable in the language of the TPD offered. ICTs offer the potential to adapt large-scale TPD programs to improve accessibility and to meet the professional needs of individual teachers or sub-groups of teachers. The programs highlighted in this section demonstrate different forms of adaptation to move towards the goal of inclusive participation for all teachers. Perhaps most exciting are those programs where the teachers who will participate in and benefit from the professional development activities are directly involved in this adaptation or localization process.

Both the TESS-India (*see Profile 1*) and TESSA (*see Profile 2*) programs utilize open licenses for their content resource banks. This enables their resources to be adapted easily for different contexts and learning needs. In TESS-India, the original co-created content (text and video) was localized through translation and adaptation by educators in each of the seven Indian states participating in the program. Thus, teachers in Uttar Pradesh, for instance, were able to study TESS-India OER in Hindi with geographical, cultural, and curriculum references relevant to their state context and activities authentic to the conditions and priorities of their classrooms (Wolfenden & Adinolfi, 2019). Further modifications to the TESS-India OER have been made at sub-state level to cater to the needs of specific groups of teachers. Similarly in TESSA, there are 10 localized country versions of the OER that have been further adapted for specific in-country programs.

These two programs also take into account the ICTs available to teachers. The OER are made available in multiple formats for online, offline (including through memory cards in teachers' own phones), and print format. Moreover, the OER have been designed such that teachers or teacher educators can select OER that meet specific professional needs. They are empowered to construct their own learning journey with the resources (Wolfenden et al., 2017).

The *Computadores para Educar* (CPE) program in Colombia (*see Profile 3*) is offered in partnership with universities in each region of the country. Each university adapts the core model for their context.

For example, where connectivity is good, teachers participate through the CPE Moodle platform; where there is little or no connectivity, an offline mobile app is used. Similarly, the blend of virtual and face-to-face classes varies across the regions.

Meanwhile, the *Tu Clase, Tu País* (TCTP) platform (*see Section 3, Profile 11*) has been extensively adapted for provision across Latin America through working with national delivery partners, often ministries of education, who develop local content; select, train, and manage tutors; and facilitate local learning communities. For example, the TCTP platform in Argentina provides two-month, open access TPD programs for *En Formación Continua* (EnFoCo)[1]. Here, good connectivity enables synchronous sessions to be offered for up to 100 participants. This facility, however, is yet to be made available for teachers in remote areas. In Colombia, the TCTP platform forms the basis of courses for the *Espacio Maestro* initiative. Formative assessment plays an important role in this program including "co-assessment" of micro-practices by the teacher and an assigned tutor.

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1   Further information is available at
http://www.inet.edu.ar/index.php/32954-2/cursos-de-capacitacion-enfoco-etp/

Profile 1.

Teacher Education through School-based Support India (TESS-India)

LOCATION
Asia (India)

YEARS OF IMPLEMENTATION
2012 to 2019

FUNDER
UK Foreign, Commonwealth and Development Office

IMPLEMENTERS
The Open University, UK • Government of India • Indian state governments • Save the Children India

SCALE
Approx. 1 million teachers in 7 states: Bihar, Uttar Pradesh, Madhya Pradesh, Odisha, Karnataka, Assam, West Bengal • 50,000 MOOC participants. • Over 3 million downloads of TESS-India video OER from YouTube.

Introduction

TESS-India aims to strengthen and transform professional development and classroom practice in India. The program provides an innovative, practical, and scalable approach to pre- and in-service teacher education, with an emphasis on inclusive, participatory, and child-centered pedagogy.

At the center of TESS-India is a toolkit of almost 200 freely available open educational resources (OER) in multiple languages (Assamese, Bengali, English, Hindi, Kannada, and Odia) and designed to be adapted to the context of use. TESS-India OER include teacher development and school leadership units, professionally filmed videos of classroom teaching, and principles of practice. They are the product of a collaboration between more than 200 Indian and UK educational experts.

Key features of the TESS-India OER model

- The TESS-India OER all follow a template that includes learning outcomes for the teacher; activities for the teacher to carry out (usually in their classroom with their students); case studies illustrating how teachers in different contexts have undertaken the activities and the actions they take in response to student questions and developing understandings; reflection prompts known as "pause for thought" and a narrative that explains how the approaches in the activities support student learning. Each OER represents 12 to 15 teacher study hours including classroom practice.

- The OER are available in multiple languages, versions, and formats. Many teachers access the OER through their own mobile phones.

- The OER toolkit is infinitely adaptable and flexible for use in different cultural and environmental contexts. The OER can be joined in multiple ways; there is not one linear pathway through the OER.

- The OER can be studied in multiple ways: as stand alone mini-courses; as part of a formal TPD program; in pre-service practicum modules in diploma or Bachelor of Education programs; in pre-service pedagogy modules; in face-to-face sessions; in distance learning programs, and so on.

- Teachers are encouraged to discuss their experiences with the activities with their peers in appropriate forums: cluster or block meetings; seminars, lectures or tutorials; and with mentors and coaches. These discussions may be in-person or through social media platforms.

TESS-India also created a free MOOC for teachers and teacher educators on "Enhancing Teacher Education through OER," which was implemented in three iterative versions between 2015 and 2017. Over 50,000 registered for the MOOC, with 55% completing the course and achieving the pass Certificate.

Key features of the TESS-India MOOC model

- The MOOC is a six-week course on Open edX and also available through OpenLearnCreate.

- Available in English, Hindi, and Odia.

- Access was mainly through smart phones, tablets, and projected by facilitators in some face-to-face classes for group study.

- Formal support was provided through the scaffolded activities, course forums (in different languages), and regular face-to-face classes organized by the participating state governments. Classes were led by facilitators who had completed a previous version of the MOOC.

- Informal support occurred via social messaging platforms initiated by the facilitators or participants themselves.

- Assessment included quizzes and two peer assessments. Successful completion also required contributions to the course forums and led to a Certificate of Completion.

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TESS-India OER Model

Teacher engaged in independent study

Teacher in TPD program (e.g., from government and NGO providers)

Pre-service teacher in Diploma or B.Ed. courses, including distance courses

Coaches and mentors, lecturers, and cluster or block coordinators guide and support.

Independent study of the OER

F2F or online peer discussion in cluster or block meetings; tutorials, lectures, and seminars; and with mentors and coaches.

Classroom practice of ideas from the OER

OER Repository: Study units for Math, Language, Science, Social Studies and Arts, and Life Skills in 4 languages and multiple country versions. Available in digital and print.

Appropriate **diploma** (B.Ed.) or **certificate** (TPD)

TESS-India MOOC Model

MOOC Facilitators

Online peer and facilitator interaction via MOOC platform

Informal groups via WhatsApp/Facebook/Google Groups led by facilitators or teachers themselves

Quizzes, peer assessment of practice-focused tasks, and **MOOC forum contributions**

Guided Independent Study

Guided Independent Study

MOOC on Open edX

Independent learners invited to attend F2F classes

Facilitated F2F classes enabled teachers to study as part of a group and offered online access to teachers without personal access to the internet.

Classroom practice of new concepts

OER Repository

Certificate from edX/TESS-India for those who passed the course

Profile 2.

Teacher Education in Sub-Saharan Africa (TESSA)

Introduction

TESSA is a network of teachers and teacher educators across Sub-Saharan Africa. At the heart of the network is a bank of open educational resources (OER) linked to the school curriculum and designed to support teachers and teacher educators in developing active approaches to learning.

Co-created by university lecturers, African education experts, and educators from nongovernmental organizations (NGOs), TESSA OER are for primary school teachers in literacy, numeracy, Life Skills, Science, and Social Studies and Arts; and for secondary school Science teachers. The OER are accompanied by guidance for teachers and teacher educators on different ways to use the OER in programs and independent study.

TESSA also has a MOOC that was developed as a strategy for supporting and enhancing OER access and use. Delivery included facilitated face-to-face classes to address participants' access and support issues.

According to evaluations of the program (Harley & Barasa, 2012), there has been considerable engagement with TESSA OER, noting that where internet access is stable, flexible, and affordable, OER uptake is high. TESSA has been integrated or used in a wide range of programs reaching over 300,000 teachers.

Sources

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Key features of the TESSA OER model

- Three-dimensional localization of OER as appropriate for contexts of use and to meet professional learning needs: content, format, selection of OER

- OER available in four different languages on the TESSA website—Arabic, English, French, and Kiswahili—adapted for specific country contexts with local geographic and cultural examples and appropriate curriculum alignment. In addition, because these materials are also available in generic versions in English and French, they are also applicable for multiple contexts in Sub-Saharan Africa.

- All TESSA OER follow a template and center on a series of activities that teachers can carry out in their classrooms and which are designed to be used flexibly according to local needs. Handbooks for teachers and teacher educators help them to integrate and effectively use the resources in their classrooms and in courses.

- TESSA OER can be used by any teacher or teacher educator. They are often integrated into pre-service teacher training programs to enhance and strengthen these programs or into government training programs. They are also used independently by practicing teachers to help develop personal professional skills and enliven their lessons.

- TESSA OER have been adapted for local contexts and programs such as pre-service diploma and Bachelor of Education programs (on-campus and distance learning) in universities and Colleges of Education, in-service programs (e.g., face-to-face, online, upgrading programs, national capacity building programs, NGO-led programs), and by individual schools and teachers.

LOCATION
Sub-Saharan Africa (Kenya, Tanzania, Uganda, Rwanda, Sudan, Ghana, Nigeria, Zambia, South Africa, Togo)

YEARS OF IMPLEMENTATION
2005 to present

FUNDERS
Various philanthropic trusts • Commonwealth of Learning • national governments

IMPLEMENTERS
The Open University, UK • national governments • national universities and associated Colleges of Education • nongovernmental organizations

SCALE
TESSA OER used by over 300,000 teachers

TESSA OER Model

Teacher engaged in independent study

Teacher in TPD programs (e.g., ZEST)

Pre-service teacher in Diploma or B.Ed. courses, including distance courses

Tutors, lecturers, and school leaders guide and support.

Independent study of the OER

F2F or online peer discussion in staff meetings, tutorials, lectures, and seminars

Classroom practice of ideas from the OER

OER Repository: Study units for Math, Language, Science, Social Studies and Arts, and Life Skills in 4 languages and multiple country versions. Available in digital and print.

Appropriate **diploma** (B.Ed.) or **certificate** (TPD)

TESSA
Teacher Education in Sub-Saharan Africa

Profile 3.

Computadores para Educar (CPE)

LOCATION
Latin America (Colombia)

YEARS OF IMPLEMENTATION
2011 to present

FUNDER
Government of Colombia

IMPLEMENTER
Government of Colombia

SCALE
9,000 teachers in 12 departments in 200 municipalities had access to the program in 2019

Introduction

CPE is a program run by the Government of Colombia that promotes educational innovation through access, use, and adoption of technology in the country's schools. CPE offers ICT-mediated TPD, in partnership with local universities, to accompany the provision of computers and internet access to Colombian schools.

The program articulates with the Ministry of Education's "Educational Innovation Route" diplomas. A diploma is a set of courses aimed at teachers and school administrators as a strategy for updating on methodologies, technologies, and innovative education trends. The aim is for teachers to develop: 1) technological, 2) pedagogical, 3) communicative, 4) managerial, and 5) research skills at different levels of complexity: Explorer (Level 1), Integrator (Level 2), and Innovator (Level 3).

Key features of the CPE model

- One of the programs consists of a 96-hour diploma called "innovaTIC," offered in blended learning modality (65 hours face-to-face, 31 hours online). The diploma has four modules of progressive complexity, and its central theme is developing teachers' ICT competencies. It is orientated to Level 3 for skilled teachers - Innovators.

- Regional operators (namely, universities) run the program and contextualize support appropriate to their specific context. There are two main options for teachers to access content: online on CPE's Moodle platform or offline on an Android app when there is no connectivity. CPE generally proposes more face-to-face than virtual spaces for training due to the varying connectivity conditions across Colombia.

- Course study is facilitated by school-based tutors and digital advisors. This group is prepared for their role in a program comprising 1 day of face-to-face training and 4 days of virtual training.

- The Ministry of Education's *Colombia Aprende* portal is also available for teachers' use. This includes a repository of resources and learning materials for self-directed learning.

- Program tutors administer an entry/exit ICT skills test for teachers. There are four knowledge tests that must be passed at the end of each level/module of the diploma course. The final product—a capstone assessment— is a video made by the teacher that documents the learning process across the four modules. The video remains as evidence of learning in the teacher's Personal Learning Environment. Key learnings from the program have highlighted the importance of localizing content and support within different regional contexts as well as recognizing and appreciating the diversity of teachers and their professional needs to sustain interest and improve retention in the program.

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CPE Model

Tutors are trained in 1 F2F session and 4 virtual sessions. Each tutor works with 25 teachers.

Entry and exit **ICT skills tests**

Knowledge tests per module

Video portfolios as capstone assessment

Teachers take the innovaTIC diploma over a period of 6 months facilitated by a school-based Tutor. They access the course content on a Moodle platform (online) or an Android app (offline, if they have no internet).

DA

School-based Digital Advisor supports Tutor and teachers

65 hours F2F

32 hours online
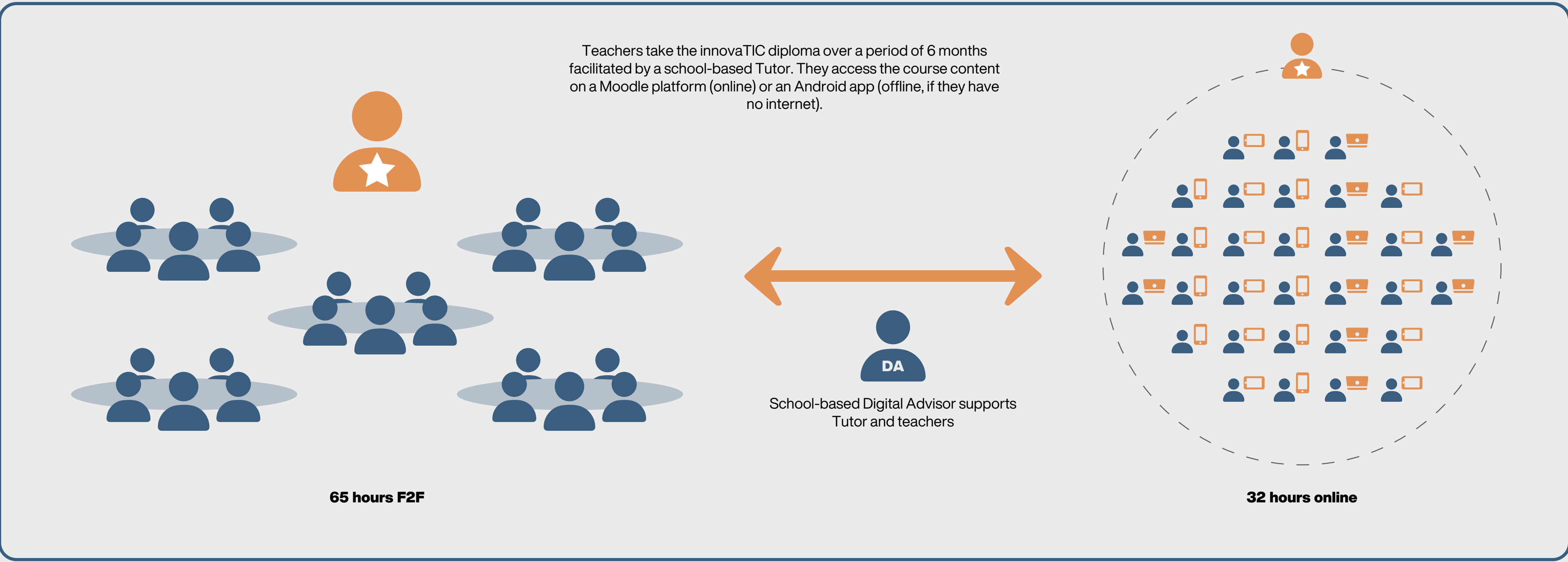
Colombia Aprende portal: Repository of resources and learning materials for self-directed learning

Section 2

Collaborative learning through peer and expert interactions

Collaboration through different forms of peer or expert interactions is essential to teachers' learning. It supports teachers to engage in inquiry, to reflect on their classroom experiences, and to try new teaching and learning approaches.

In the examples provided here, collaboration takes multiple forms, both formal and informal. Programs frequently utilize blended approaches, for example, regular face-to-face meetings of communities of practice (CoP) combined with the use of social media or social messaging platforms as in the Technology Enabled Education through Joint Action and Strategic Initiatives (Tejas) program in India (*see Profile 4*) and the Building Learning Foundations (BLF) program in Rwanda (*see Profile 5*). These two programs adopt different approaches reflecting their sociocultural contexts. Tejas practitioner groups, known as teacher activity groups (TAGs), choose one of their members to facilitate the discussion and select a topic for inquiry from the Tejas Resource Book. They are encouraged to make use of social messaging groups in between meetings to share experiences and problems.

The BLF practitioner groups, meanwhile, are more highly structured and directive. These are led by school subject leaders who follow semi-structured/guided plans for each session. Interactions in-between meetings take the form of individual support to each teacher through WhatsApp messaging or phone calls.

Evidence is mixed on the efficacy of social media and messaging groups to support changes in teachers' classroom practice. In some groups, teachers readily share examples of lesson plans or videos from their lessons, as in the case of the IT for Change projects in India. But in other cases, the majority of the contributions are reported to be concerned with organizational queries reflecting a preoccupation with practical issues, such as in the Connected Learning Initiative (CLIx) program (*see Section 3, Profile 10*). Alternatively, the absence of dialogue may arise because teachers are reluctant to share their teaching ideas with other teachers or, as in the Tejas program, teachers prefer to work through a single mode and to share experiences and engage in reflection in-person through their TAGs rather than on WhatsApp.

The Teachers for Teachers project in Kenya (*Profile 6*), meanwhile, shows how social messaging platforms can effectively enable collaboration with teacher peers and mentors who are not co-located and with whom there has not been any prior in-person meetings. As this project demonstrates, this is particularly important for teachers working in crisis situations such as refugee camps. It helps to address issues of professional isolation, improves motivation, and increases teachers' sense of professional identity. Many of these groups persist following the end of formal project support, indicating that teachers value participation in the groups. They can also create a ripple effect by involving other teachers not included in the initial project.

In the Ceará program in Brazil (*see Profile 7*), remote mentoring is enhanced with videos of classroom practice. This approach uses ICT to compensate for the scarcity of experienced coaches and to address challenges in travelling to schools in remote rural areas.

Videos of classroom practice also provide a resource to support collaborative working. It can be curated video accessed online or from memory cards in teachers' phones as in the English in Action (EiA) program in Bangladesh (*see Section 3, Profile 8*), or it can be user-generated video as in the BLF program or the Primary Math and Reading (PRIMR)/Tusome program in Kenya. In the latter, tablets were used by Curriculum Support Officers (local teacher educators) to record excerpts of teachers' practice to use in structured discussions with the teacher following her lesson. The BLF program, meanwhile, combines both approaches: school subject leaders are given smartphones containing curated video to show during practitioner meetings and individual teachers can borrow the smartphones to create video records of their own classroom practice as a resource for reflection.

Profile 4.

Technology Enabled Education through Joint Action and Strategic Initiatives (Tejas)

⊙ **LOCATION**
Asia (India)

🗓 **YEARS OF IMPLEMENTATION**
2016 to 2021

💲 **FUNDERS**
Government of Maharashtra • Tata Trusts

🖙 **IMPLEMENTERS**
Government of Maharashtra • British Council

↗ **SCALE**
State level: 51,500 teachers in 36 districts

Introduction

Tejas was a joint initiative delivered through a partnership between the Government of Maharashtra, the Tata Trusts, and the British Council. It aimed to improve the quality of English language teaching and learning in primary schools in Maharashtra. The program design supported state capacity building to provide appropriate ongoing TPD to teachers. Objectives included:

- enabling the Regional Academic Authority to plan, manage, and support local communities of practice (CoPs) independently as an alternative to traditional cascade models of training;

- enabling teachers to organize, form, and implement local groups, both digitally and face-to-face, to improve their quality of teaching and strengthen their professional development; and

- equipping state personnel and teachers with increased confidence in their ability to communicate effectively in English, especially in the classroom and training room, and developing their skills in facilitating TPD activities.

Key features of the Tejas model

- Teacher activity groups (TAGs) were formed consisting of primary school teachers from clusters of five to eight geographically close schools. These teachers meet once a month to learn new ideas and teaching techniques, share experiences, and lend learning support to each other through discussion and interaction. There is no formal external trainer present; instead, one of the teachers, who has been trained as a TAG Coordinator, facilitates the meetings and keeps the group focused on tasks.

- TAG Coordinators are teachers or block resource persons who have undergone intensive face-to-face training on TAGs supplemented by online language learning. TAG Coordinators facilitate the TAG in their own cluster and two adjacent clusters.

- In every TAG meeting, teachers collaboratively pick a topic for discussion from the TAG Resource Book, which includes video content. This is to ensure that their learning is related to their own contextual professional learning needs and has an actual and immediate impact on their classroom teaching. At the end of a TAG meeting, teachers complete a "Reflection and Action" planning document to record their learning and plans for classroom activities.

- WhatsApp groups and Facebook communities are used to encourage sharing of experiences, learnings, and best practices in between TAG meetings and across TAGs. These are facilitated by TAG Coordinators.

- Self-access and e-moderated courses have also been embedded in the program to support teachers to improve their English language skills.

- Tejas was initially conducted as a pilot project in nine districts across Maharashtra and represented a cross-section of urban, semi-urban, and rural areas. After the initial phase, the pilot was successfully scaled up to another 27 districts.

- To support state capacity strengthening, a core group from the Regional Academic Authority (RAA) composed of State Academic Resource Persons (SARPs) and English Subject Assistants (ESAs) was trained in project management and the monitoring and evaluation of the TAGs. This group supports the TAG Coordinators and assumes responsibility for the progress made by the teachers.

- The success of Tejas was measured based on three key aspects: participant engagement, evidence of participant learning, and participant application of practice in the classroom via lesson observations.

Internal evaluation demonstrated strong engagement with both face-to-face and digital resources, improved English language teaching and learning, and increased state capacity.

At the beginning of the COVID-19 pandemic in March 2020, Tejas swiftly pivoted to synchronous and asynchronous digital delivery, with the British Council delivering 72 Tejas webinars and TAG Coordinators facilitating virtual TAGs. This enabled teachers, TAG Coordinators, SARPs, and ESAs to access intended program inputs during the lockdown. In addition, the British Council was able to create bespoke inputs that reflected some of the current challenges these stakeholders face: planning and facilitating virtual TAGs, using online platforms for remote teaching, teaching online in low-resource contexts, and good practice in supporting students' return to classrooms after extended absences.

Sources

British Council. (n.d.). *Tejas*.

Government of Maharashtra, Tata Trusts, and British Council. (n.d.). *Tejas*. British Council.

Tejas Model

Core group of trained **State Academic Resource Persons (SARPs)** and **English Subject Assistants** (ESAs) support the **TAG Coordinators** in monitoring and evaluating the TAGs

Teachers may also form **informal groups** through WhatsApp or Facebook

TC

TC
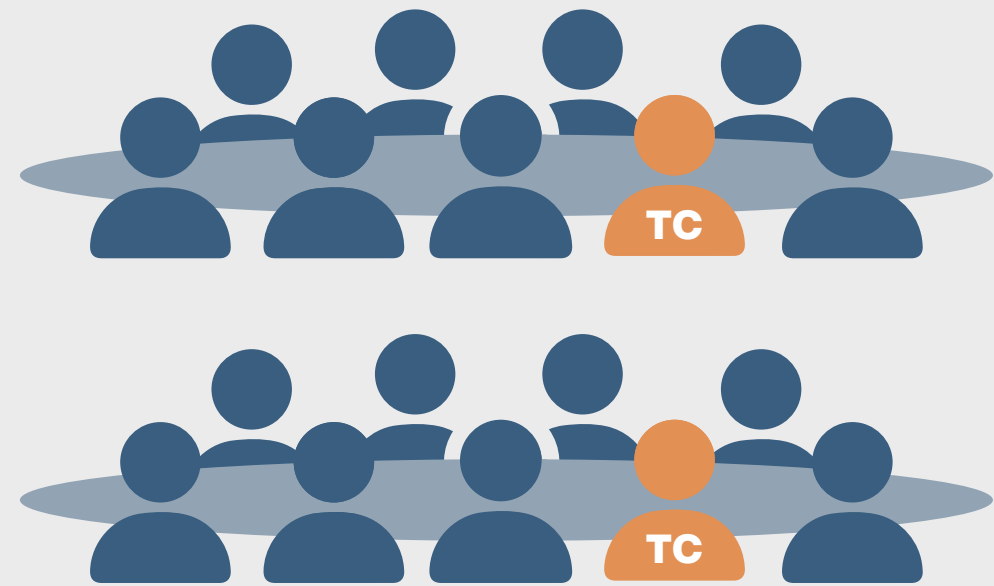
F2F collaborative learning through **Teacher Activity Groups (TAGs) at the cluster level (5-8 schools in a locality)** led by a peer teacher chosen by the group (**TAG Coordinator or TC**). Each TAG chooses topics to investigate from the available TAG Resource Book.

Classroom practice of new concepts

GOVERNMENT OF MAHARASHTRA

BRITISH COUNCIL

TAG Resource Book
Continuing professional development resources
accessible in various formats distributed online and through social messaging platforms

Profile 5.

Building Learning Foundations (BLF)

Introduction

The BLF program is built on three foundations: teacher development, strengthening leadership for learning, and system strengthening. Running through these is a crosscutting theme of inclusive education practices for children with special education needs including those with disabilities. The overall aim of the program is to improve the English and Mathematics learning outcomes for 4.2 million children in Rwanda.

The BLF program is designed to provide support and capacity building to teachers and all workforce roles that directly support TPD in the system. Of particular promise is its comprehensive approach to TPD that includes promoting guided, not prescriptive, materials; focusing on complimenting, supporting, and enhancing existing systems and structures at national, district, sector, and school levels; embedding change; and utilizing a comprehensive teacher assessment approach.

- BLF field and project staff occasionally attend CoPs and share good practices from other schools, help school-based teams overcome local problems, and support teachers to reflect on their learning and engage in other school-based professional development activities.

- Teachers are assessed via lesson observations by SLFs and project staff using a progression matrix.

Sources

Building Learning Foundations. (n.d.). *About the Building Learning Foundations programme*.

Unpublished program documents.

Key features of the BLF model

- All teachers are given printed self- and peer-study toolkits that focus on subject-specific pedagogy. Supporting audio-visual materials are also provided on an SD card. Two school subject leaders (SSLs) in each school are given a smartphone as a shared device. These are used to watch BLF videos and for teachers to record their own practice to inform collective reflection.

- Video materials support the toolkits by providing model lessons and short clips demonstrating key best practices for teachers to reflect on, discuss with their peers, and incorporate into their teaching practice. BLF also provides some learning materials for students.

- Teachers engage in monthly school-based communities of practice (CoPs) led by SSLs with guided session plans.

- SSLs are an existing role within the Rwandan education system; their use supports sustainability. They are provided with toolkits and regular orientations.

- Teachers also receive regular follow-up visits from BLF Sector Learning Facilitators (SLFs). Remote follow ups via WhatsApp, free conference calls, and phone calls also started during the Covid-19 period.

LOCATION
Sub-Saharan Africa (Rwanda)

YEARS OF IMPLEMENTATION
2017 to 2023

FUNDERS
UK Foreign, Commonwealth and Development Office

IMPLEMENTERS
Rwanda Ministry of Education • Education Development Trust • British Council • Voluntary Service Overseas

SCALE
National: 42,000 teachers

BLF Model

Two **School Subject Leaders (SSLs)** support teachers and lead the CoP meetings
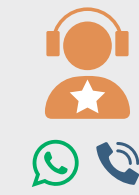
BLF Sector Learning Facilitators (SLFs) conduct school visits and do remote follow ups via WhatsApp and conference/phone calls. **SLFs and BLF project staff** assess teachers using a progression matrix

Independent Study

Classroom practice of new concepts

Monthly F2F meetings of school-based communities of practice (COPs) using guided session plans

Printed toolkits and **supporting audio-visual materials** on memory cards

Building Learning Foundations

Two smartphones given to **SSLs** for shared teacher use

Profile 6.

Teachers for Teachers

📍 **LOCATION**
Sub-Saharan Africa (Kenya)

📅 **YEARS OF IMPLEMENTATION**
2016 to 2017

💲 **FUNDER**
UK Foreign, Commonwealth and Development Office •
IDEO.org • OpenIDEO

👐 **IMPLEMENTERS**
Columbia University • United Nations High Commissioner for Refugees •
Lutheran World Foundation • Finn Church Aid

↗ **SCALE**
130 teachers in 20 primary schools across Kakuma Refugee Camp and
Kalobeyei Settlement

Introduction

The Teachers for Teachers project in the Kakuma Refugee Camp and Kalobeyei Settlement in Kenya aimed to respond to the gap in support for teachers in refugee and crisis-affected contexts. Their TPD approach integrated teacher workshops, peer coaching, professional learning communities called Teacher Learning Circles, and mobile mentoring.

Key features of the Teachers for Teachers model

- Initial face-to-face training workshops for refugee and Kenyan teachers working in the refugee camp and settlement, in cohorts of 25-30 teachers led by international and national staff including teachers themselves. Teachers then tried out in their own classrooms what they learned from this initial training, supported by peer coaches and mobile mentors.

- Small groups of teachers were assigned a peer coach. The peer coaches facilitated professional learning through classroom observations and Teacher Learning Circles where teachers could collectively reflect on their pedagogical practice, address shared challenges, and celebrate successes. Selected from among the training cohorts, these peer coaches received additional training to enable them to create a safe and supportive environment for reflection and learning, give constructive feedback to peers, and help the teachers set personalized goals related to the training.

- Teachers were also assigned a mobile "global" mentor who provided online support for four to six months. These global mentors were volunteer experts from around the world whose role was to connect teachers in groups of four or five through WhatsApp to facilitate discussions on good practice and provide advice on issues participants were facing in their classrooms and schools. The technology used enabled the mentors and teachers to share videos and images as well as text, thus widening the scope of the ideas and solutions discussed.

- The global mentors further reinforced learning from the face-to-face training by giving teachers pedagogical advice linked to the training through a mobile mentoring curriculum. This includes core messages sent twice a week and follow-up questions and support.

- All teachers from each training cohort were also linked via a larger WhatsApp group to enable them to share and exchange ideas with a wider audience.

- Teachers were provided with mobile phones and data, thus removing the main financial and technical barriers to communication that would have limited the impact of the project had teachers been asked to use their own technology.

The impact of the project was assessed primarily through teacher-generated data and data collected by peer coaches. The project team also analyzed the teachers' WhatsApp and Facebook activities and the communication and engagement between teachers and their mentors. In addition, they held focus group discussions and interviews with the aim of collecting narratives from teachers and students using the Most Significant Change technique.

Data suggested considerable success, including increased preparation, confidence, pedagogical knowledge, and effectiveness among teachers. Notably, teachers also reported improvements regarding child protection and positive and safe learning environments. This is of particular value in a refugee context where the creation and maintenance of safe learning environments is vital.

Further evidence suggested that the technological aspect of the project was particularly helpful. Nearly 50 percent of teachers reported successfully employing solutions shared within their WhatsApp groups, suggesting that the communities created through mobile technology had led directly to improved pedagogical practice.

Sources

McAleavy, T., Hall-Chen, A., Horrocks, S. & Riggall. A. (2018). *Technology supported professional development for teachers: Lessons from developing countries.* Education Development Trust.

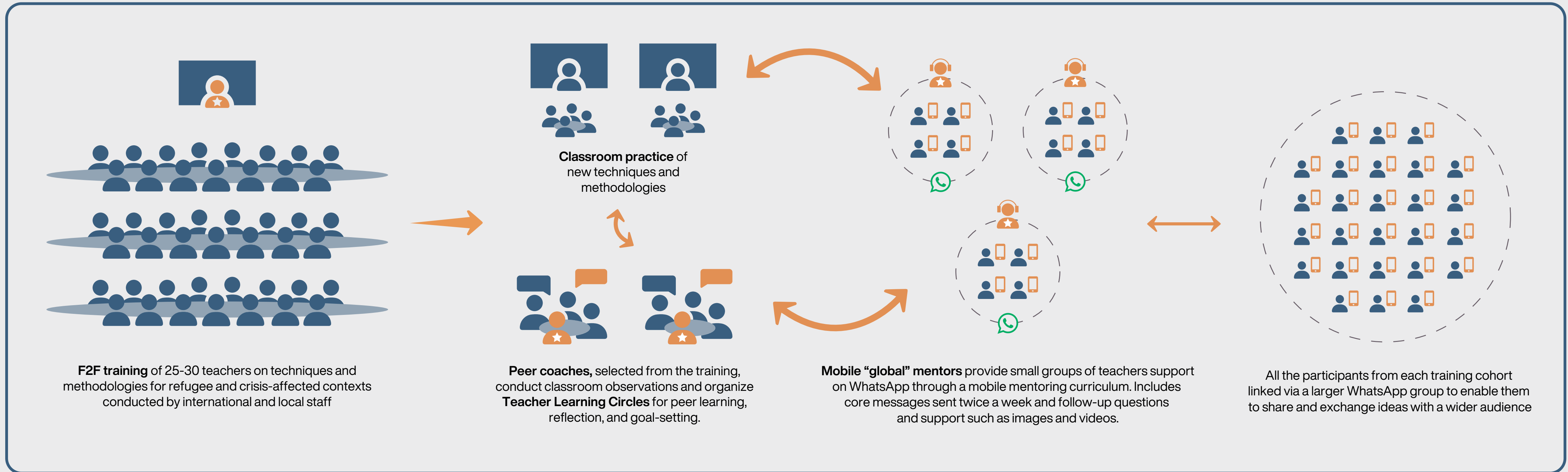Teachers College Columbia University. (n.d.). *Teachers for teachers*.

Teachers in crisis contexts training for primary school teachers. (n.d.). Inter-agency Network for Education in Emergencies.

Teachers in crisis contexts peer coaching pack. (n.d.). Inter-agency Network for Education in Emergencies.

Teachers for Teachers Model

F2F training of 25-30 teachers on techniques and methodologies for refugee and crisis-affected contexts conducted by international and local staff

Classroom practice of new techniques and methodologies

Peer coaches, selected from the training, conduct classroom observations and organize **Teacher Learning Circles** for peer learning, reflection, and goal-setting.

Mobile "global" mentors provide small groups of teachers support on WhatsApp through a mobile mentoring curriculum. Includes core messages sent twice a week and follow-up questions and support such as images and videos.

All the participants from each training cohort linked via a larger WhatsApp group to enable them to share and exchange ideas with a wider audience

TEACHERS for TEACHERS

Training modules and **supplemental resources**

Participating teachers given **mobile phones** and **data**

Profile 7.

Ceará

LOCATION
Latin America and the Caribbean (Brazil)

YEARS OF IMPLEMENTATION
2014 to 2015

FUNDERS
The World Bank's Strategic Impact Evaluation Fund •
Lemann Foundation

IMPLEMENTERS
Ceará State Government • Lemann Foundation • World Bank

SCALE
State-wide in Ceará, Brazil

Introduction

To address challenges in the variation in teacher practice and quality in schools, a Brazilian federal government policy in 2013 mandated that schools free up approximately a third of teacher working hours for in-school teacher collaboration and development programs.

In 2014, the Ceará education secretariat partnered with researchers from the World Bank and the Lemann Foundation to deliver a one-year program that provided feedback to secondary school teachers on their classroom practices from in-school coaches who, in turn, were supported by expert educational coaches through one-on-one Skype sessions. The State of Ceará was selected for the experiment due to a long history of sustained improvements in education quality at the secondary level supported by an effective and robust supervision and accountability system.

The Ceará project aimed to increase professional interaction among teachers and to promote good practice techniques for lesson planning, classroom management, and keeping students engaged.

- Pedagogical Coordinators and teachers also had access to a private website to post video examples of good teacher practices in their school – both classroom teaching examples and Pedagogical Coordinators giving teachers specific feedback after observing their classes. These videos were also viewed by the external coaches and referred to in the external coaching sessions.

- Schools received benchmarked performance feedback based on an initial round of classroom observations at the end of the 2014 school year. Data was gathered using the Stallings "classroom snapshot" method. Results were shared through school-specific bulletins that provided easy-to-compare data on indicators such as the share of class time teachers used for instruction, pedagogical techniques, classroom materials used most frequently, and the share of class time students were engaged.

The randomized controlled trial evaluation of the program found that teachers' classroom practices and students' standardized test scores had improved; teaching time and student engagement had also increased.

The Ceará project demonstrated the importance of coaching and the critical value of a shared culture of results and constant improvement.

## Key features of the Ceará model

- School-based Pedagogical Coordinators (an existing school-level role) participated in three one-day, face-to-face training sessions with the external coaching team on how to observe teachers in the classroom and how to hold individual coaching sessions with teachers to provide specific feedback on their teaching practice. They were also trained to film themselves providing feedback to teachers and to upload and share these videos with their coaches for additional feedback. Over the course of the 2014 school year, each pedagogical coordinator also had two to four private sessions with an assigned coach via Skype.

- Pedagogical Coordinators regularly observed teachers (weekly) and provided benchmarked feedback on their teaching practice.

- Teachers and their Pedagogical Coordinators had access to online videos filmed in Brazilian classrooms and materials that illustrated and explained high-impact teaching practices.

Sources

Bruns, B., Costa, L., and Cunha, N. (2017). *Through the looking glass: Can classroom observation and coaching improve teacher performance in Brazil?* (Policy Research Working Paper No. 8156). World Bank.

Ceará Model
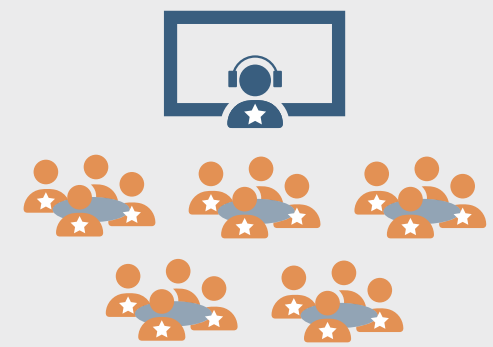
External coaching team leads three 1-day, F2F training sessions with **SPCs**.
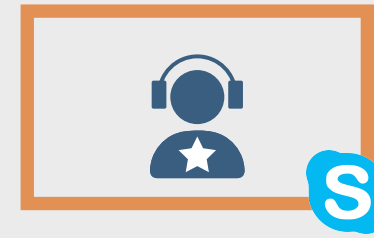
External coach provides 2-4 private coaching sessions via Skype to each SPC during the year. Each coach supports 31-36 schools.

School-based Pedagogical Coordinator (SPC) observes and gives feedback on teachers' classroom practice weekly.

Repository of support materials including video examples of good teacher practices submitted by teachers and SPCs

Section 3

Choosing information and communications technology

ICTs have the potential to improve teachers' access, engagement, and learning outcomes in professional learning opportunities. They likewise enable TPD designers to address issues of diversity more efficiently in scaling TPD. In selecting ICT, however, designers need to pay attention to aspects of the context – ICT infrastructure and tools; teachers' digital identities and skills; and issues of equity across different subgroups of teachers.

Most TPD@Scale programs employ ICT to produce and make learning resources available. Where connectivity is poor or expensive or there are limited digital devices, teacher access to this content is through printed material, as in the Zambian Education School-based Training (ZEST) program (*see Section 4, Profile 13*) and IStep Sudan[1]; offline tablets, as ICT4ED in South Africa (*see Section 4, Profile 15*); or CDs, as in the Early Language, Literacy and Numeracy Digital (ELLN Digital) program in the Philippines (*see Section 5, Profile 17*). In the English in Action (EiA) program in Bangladesh (*see Profile 8*), teachers access learning content from memory cards in their own mobile phones; this practice is now widespread although updating the memory cards can be complicated and costly. All these examples demonstrate that providing offline materials for teachers can be effective in TPD programs. Maximizing the use of teachers' own devices with which they feel comfortable can reduce resource requirements and increase the use of the learning materials.

Where connectivity infrastructure is more developed, providers are increasingly creating complete online TPD programs, providing content, support, and assessment usually in the form of MOOCs. There are several examples of these in China, as shown in the case of Peking University's X-Learning Centre (*see Profile 9*), and in Latin America. Many use global platforms. For instance, the Connected Learning Initiative (CLIx) in India uses the Open edX platform (*see Profile 10*) while the Sexuality... Much More Than Sex MOOC developed by the University of the Andes in Colombia utilizes the Coursera platform[2]. Increasingly, teachers are accessing these courses through their own smartphones, giving them additional flexibility in terms of when and where they study. Nevertheless, completion rates can be low; the Colombian MOOC has an average completion rate of only 17.2% (SUMMA, 2021).

When connectivity and teachers' digital identities and skills are less secure, participation in these online courses is often complemented with face-to-face study groups or classes. For example, the TESS-India MOOC (*see Section 1, Profile 1*) offered regular face-to-face classes to supplement the online support through MOOC discussion forums delivered on Open edX. Face-to-face classes were facilitated by local teacher educators who had previously completed the MOOC. In the CLIx program, teachers were brought together in person to develop networks and relationships before they participated in the MOOC.

A similar strategy was employed by *Planes de Actualización Docente* (*see Section 4, Profile 14*) in Costa Rica. The *Tu Clase, Tu País* (TCTP) model (*see Profile 11*) likewise utilizes a blend of online and face-to-face sessions where very short online micro courses complement more time spent in face-to-face classes. Similarly, a British Council English Language Teaching MOOC in East Timor blended MOOC study with in-person meetings of communities of practitioners. In most cases, this blend of support increases completion rates. For instance, the relatively high completion rate for the TESS-India MOOC (approximately 50%) is attributed to the provision of these face-to-face classes in combination with informal social media groups (Wolfenden et al., 2017).

In some MOOCs or online courses, tutors with different roles are provided. For instance, a MOOC offered by the Argentina-based non-profit *Asociación Educar para el Desarrollo Humano* offers personalized content guided by two types of tutors – operational and technical – for each cohort of 300 participants[3]. The operational or logistical tutor manages forums, answers questions related to the platform, and reviews results from automated assessments while the technical expert answers questions related to the course content (SUMMA, 2021).

Where teachers only have access to basic feature phones, SMS or texting has been successfully used to convey content to teachers. In the UNESCO pilot in Nigeria (*see Profile 12*), participants were sent short text messages with course content daily, including images. In SMS Story, implemented in Papua New Guinea and Rajasthan, teachers were sent both a story and a lesson plan using SMS. These examples pre-date the use of social messaging platforms that now combine content distribution with online discussion groups to share experiences, adaptations, and problems of practice with peers.

https://sudan.britishcouncil.org/en/%E2%80%93service-teacher-education- project-istep-launch

https://es.coursera.org/learn/sexualidad

https://asociacioneducar.com/

Profile 8.

English in Action (EiA)

Introduction

English in Action (EiA) used mobile phones, the internet, print materials, television, and peer-to-peer learning to help 25 million Bangladeshis improve their English as a route into work and out of poverty. The EiA Schools TPD program was one component of this larger project. It aimed to improve the quality of teaching and learning in English language lessons in primary and secondary schools.

Key features of the English in Action model

- Teachers are provided professional development and classroom resources in the form of print materials and videos of classroom practice on memory cards for teachers' mobile phones. Teachers were also supplied with mobile speakers through which they could use appropriate classroom audio resources on the memory cards with their students.

- Teachers received ongoing support by being paired with another teacher in their school. They were encouraged to regularly meet, discuss the audio-visual material, plan lessons, and engage in other collaborative activities.

- Primary school head teachers took part as "full" participants in the program. Both primary and secondary school head teachers were also supported to encourage their teachers to work through the activities together in school and monitor how teachers were getting on.

- This support was supplemented by regular locally-based cluster meetings of teachers, led by local Teacher Facilitators (TFs), and by workshops; however, the core of the learning took place at the school level.

- Local district (*upazila*) staff and TFs working together to support teachers at the cluster level through meetings and forums was a particularly powerful exchange and cultivated a new sense of understanding and value between school and *upazila*-level actors.

- Strong collaboration between project staff and *upazila* staff improved technical capacity in observing behaviors that make up a "learning classroom" and giving teachers constructive feedback.

EiA demonstrated early impact, and the improvement of teachers' English was sustained throughout the life of the program. Baseline studies showed that in 90% of the English lessons observed, teachers spoke from the front of the class, did so almost exclusively in Bangla, and asked closed questions; as such, students had few opportunities to participate beyond choral responses. More recent research findings showed teaching interactions were predominantly in English (over 90%) and teachers demonstrated more interactive pedagogy leading to improved student outcomes.

Central to EiA's success was the school-based nature of learning and support through collaboration with paired teachers and head teachers. Cluster level meetings further harnessed this learning through school-to-school sharing of experiences and developed shared understanding and practical actions for how EiA's methods could be successful in the local context.

The program had a strong "institutionalization" component and worked closely with existing government personnel such as staff from over 230 *upazilas* who were involved in field-level monitoring. Many of the local TFs became Master Trainers in the formal government teacher development programs. As a result of this collaboration, the role of *upazila* staff has been strengthened and the program has been embedded in wider national efforts to improve quality education. From 2015 onwards, the EiA multimedia English learning products and programs were transferred to national partners, who will lead future development.

EiA showed that building a strong, locally led program is key to program resilience for sustainability. Despite political volatility and security issues, especially in recent years, strong ownership at both *upazila*- and school-level made EiA resilient.

Sources

English in Action. (2017). *Project overview brochure.*

English in Action (EiA). (2018). *English in Action's impact in schools.*

English in Action. (2018). *English in Action.*

English in Action (EiA). (n.d). *Teachers' experiences of school-based teacher development in support of communicative English language teaching in government schools in Bangladesh.*

Power, T., McCormick, R., & Asbeek-Brusse, E. (2017). *A quasi-experimental study of the classroom practices of English language teachers and the English language proficiency of students, in primary and secondary schools in Bangladesh.* English in Action (EiA).

📍 **LOCATION**
Asia (Bangladesh)

📅 **YEARS OF IMPLEMENTATION**
2008 to 2018

💲 **FUNDERS**
UK Foreign, Commonwealth and Development Office

☛ **IMPLEMENTERS**
Government of Bangladesh • BBC Media Action • Cambridge Education • The Open University, UK • Underpriviliged Children's Educational Program • Friends in Village Development Bangladesh

↗ **SCALE**
Over 51,000 teachers in 64 districts across 7 divisions

English in Action Model

Local district (upazila) staff and local Teacher Facilitators work together to support teachers and the cluster level through meetings and workshops. They collaborate in observing behaviors that make up a "learning classroom" and give teachers constructive feedback.

School Leaders support teachers.

Teachers study EiA materials.
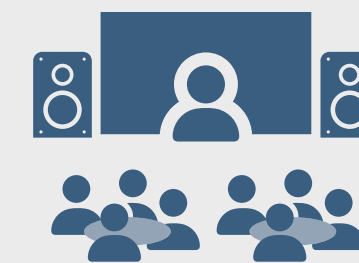
Classroom practice following EiA materials. Teachers also share some of the EiA content to the class using mobile speakers.
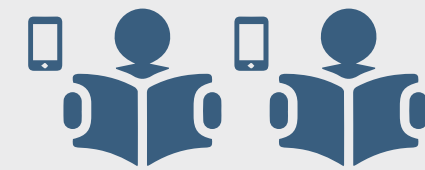
Teachers are paired with each other for peer learning.

Teachers engage in local cluster-based meetings and workshops led by local Teacher Facilitators (TFs).

ENGLISH in ACTION

Print materials to complement textbooks

Memory cards for teachers' own mobile phones with videos of classroom practice and classroom audio resources

Mobile speakers

Profile 9.

Peking University X-Learning Centre

Introduction

In 2015, the X-Learning Centre launched its Flipped Classroom Pedagogy MOOC, a seven-week course with six modules (one orientation module and five modules focused on the flipped classroom approach), on the iCourses platform.

Key features of the Peking University X-Learning Centre Model

- Guided independent study of the online course with online support from peers and facilitators
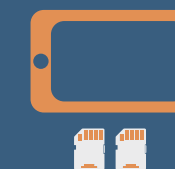
- Learning resources on the platform including reading materials in PDF, video lectures, quizzes, and discussion forums

- Informal face-to-face and virtual professional learning communities (PLCs)

- Teachers are assessed through results from quizzes (formative) embedded inside videos and assignments (summative) that involve creating and critiquing lesson plans or teaching designs for the flipped classroom approach.

- Though the model included peer review, this was seen to be more of a learning exercise rather than assessment.

Although the MOOC provides a structured venue for learner support within the platform through discussion forums, many participants sought support through informal PLCs. This was done either face-to-face or via messaging apps such as WeChat and QQ. Teachers would form groups based on subject (e.g., Mathematics) or location (e.g., Beijing). The MOOC design also provided some differentiation through subject-based support as well as additional support for teachers less confident with the ICT. However, gender differences were noted in the completion rates, with female teachers less likely to finish the MOOC possibly due to lack of time to keep to the deadlines and then dropping out.

Evaluation also found that the per capita cost of the MOOC was significantly lower than in the traditional cascade model.

Sources

TPD@Scale Coalition for the Global South. (n.d.). *Peking University X-Learning Center*.

Wang, Q., Chen, B., Fan, Y., & Zhang, G. (2018). *MOOCs as an alternative for teacher professional development: Examining learner persistence in one Chinese MOOC. Foundation for Information Technology Education and Development*.

LOCATION
Asia (China)

YEARS OF IMPLEMENTATION
2015 to present

FUNDERS
iCourses of China Higher Education Press, with support from the following university partners: Zhejiang University, Nanjing Normal University, South China Normal University, East China Normal University, Hunan Agriculture University, Northwest Normal University, Beijing Institute of Education, Guangxi Teachers Education University, Guangzhou University, and Shanxi Normal University

IMPLEMENTERS
X-Learning Centre of the Graduate School of Education, Peking University

SCALE
Nationwide: open to all pre-service and in-service teachers, teacher educators, and school leaders

Peking University X-Learning Centre Model

Facilitator providing subject-specific support

Online peer and facilitator interaction via MOOC platform

Informal professional learning communities (PLCs) via WeChat/QQ

Formative quizzes, summative assignments, and peer assessments of lesson plans/teaching designs

Guided Independent Study

Guided Independent Study

爱课程
iCourse

MOOC on
www.icourses.com

Informal F2F PLCs

Classroom practice of new concepts

Certificate of Completion

Profile 10.

Connected Learning Initiative (CLIx)

LOCATION
Asia (India)

YEARS OF IMPLEMENTATION
2015 to 2020

FUNDER
Tata Trusts

IMPLEMENTERS
Centre for Education Innovation and Action Research, Tata Institute of Social Sciences • Massachusetts Institute of Technology (MIT) Centre for Education Innovation and Action Research • Tata Trusts • State Governments

SCALE
Over 3,500 teachers across 4 Indian states: Chhattisgarh, Mizoram, Rajasthan, and Telangana

Introduction

Launched in 2015 by the Centre for Education Innovation and Action Research at the Tata Institute of Social Sciences (TISS) and its partners, CLIx is a technology-enabled open education initiative at scale for high school students. It offers interactive resources for students in communicative English, Mathematics, Science, and Digital Literacy. The program includes TPD for secondary school teachers available through modular MOOCs and online communities of practice (CoPs).

The CLIx MOOCs offer a broad spectrum of topics such as the pedagogy of teaching Languages, Mathematics, and Science; teacher mentoring; and ICT in education.

Key features of the CLIx TPD model

- Teachers use their own digital devices to access the CLIx MOOCs on TISSx on the Open edX platform (https://www.tissx.tiss.edu/). Over 99% of CLIx teachers had access to mobile phones but access to tablets, desktop computers or laptops was more limited. The availability of a mobile version of TISSx contributed to enhancing teachers' engagement with the courses and their ability to complete coursework.

- Most courses are in English while others are in Hindi. At the end of each MOOC, successful participants are awarded a certificate of completion.

- The learning tasks involved reading documents, watching instructional videos, taking quizzes, completing individual projects, and giving feedback to peers' assignments in the discussion forum.

- Continuous professional learner support and motivation was through online CoPs on Telegram, either subject- or district-based, supported by Field Resource Coordinators (FRCs). Teachers also received support from FRCs on school visits and by phone.

- Prior to starting their first MOOC, teachers were encouraged to attend face-to-face workshops conducted in training centers. Technologists were also available to answer queries related directly to technology use.

Evaluations revealed that there is considerable diversity in uptake among teachers across the four states, with the technology infrastructure being a limiting factor in the CLIx model's further expansion. Other barriers include time constraints, the culture of reading, language, and slight gender biases in the subjects. However, the endline survey indicated that over 75% of CLIx teachers benefited from interactions in the Telegram-based CoP.

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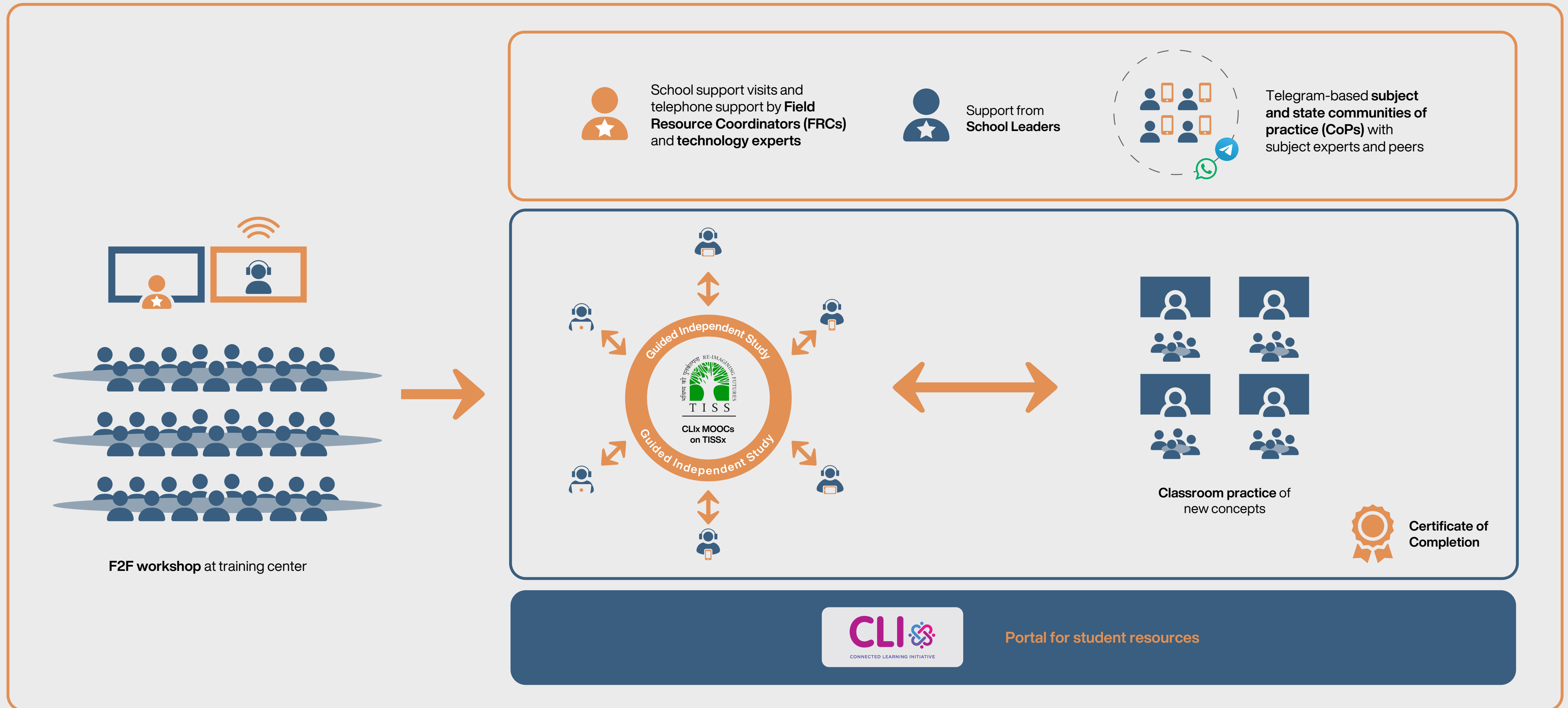
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CLIx TPD Model

School support visits and telephone support by **Field Resource Coordinators (FRCs)** and **technology experts**

Support from **School Leaders**

Telegram-based **subject and state communities of practice (CoPs)** with subject experts and peers

Guided Independent Study

Guided Independent Study

CLIx MOOCs on TISSx

Classroom practice of new concepts

Certificate of Completion

F2F workshop at training center

Portal for student resources

Profile 11.

Tu Clase, Tu País (TCTP)

LOCATION
Latin America (Chile; various)

YEARS OF IMPLEMENTATION
2012 to present

FUNDERS
Respective country governments

IMPLEMENTERS
Tu Clase, Tu País • Government/Ministries of Education

SCALE
As part of public policies: Chile, Argentina, Uruguay, and Colombia •
In partnership with local organizations: Dominican Republic, Venezuela, and Brazil

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Introduction

TCTP is a civil society organization that offers TPD to primary and secondary school teachers through online and blended learning courses. It works with country partners who contextualize the TCTP model (program content, support, and platform) to meet local needs. This working model is based on five principles:

- Personalization and teacher agency

- Strengthening of peer work and professional learning communities (PLCs)

- Focus on classroom practice

- Professional development as an ongoing process

- Professionalization of teacher knowledge and competencies

Key features of the TCTP model

- The TCTP blended course design favors online courses of 30 hours composed of micro-courses of 2-4 hours of work. These are complemented by 8-24 hours of face-to-face sessions with a focus on educational practice and reflection.

- The quality and production standards for courses have a strong focus on educational practice to accompany teachers in the transition from information assimilation to pedagogical action and skills development.

- The core platform is designed to be accessed from any internet-enabled device. However, teachers still report some connectivity issues and a minority of mainly older teachers are unconfident ICT users.

- Tutors are a central part of the project design. They are assigned in a ratio of one tutor to 30 teachers. Tutors are peer teachers especially prepared for their role through a certified training program.

- The TCTP platform includes tools for the creation and publication of a wide range of course offerings that include rich multimedia and interactive material: quizzes, self-assessments, surveys, assignments, video assignments, forums, rubrics, and grading schemes.

- A personalized digital portfolio is provided for each teacher, allowing the recording of personal reflections, digital resources in any format, and options for sharing resources with other users both on and off the platform.

- Formative assessment is done through "micro practices" — exercises in the authentic context of the teacher's classroom — which are documented in the teacher's digital portfolio. Teachers receive feedback on these from tutors. Teachers also do co-assessment exercises and self-assessments.

TCTP often works with ministries of education, which means that teachers access the TPD free-of-charge. In addition, there are often incentives for teachers to participate such as time allocation and points towards promotion.

TCTP courses have an average completion rate of 82%. According to the platform's satisfaction surveys, over 96% of participants are satisfied or very satisfied with the programs, over 92% would recommend it, and over 95% would take a similar course again.

Sources

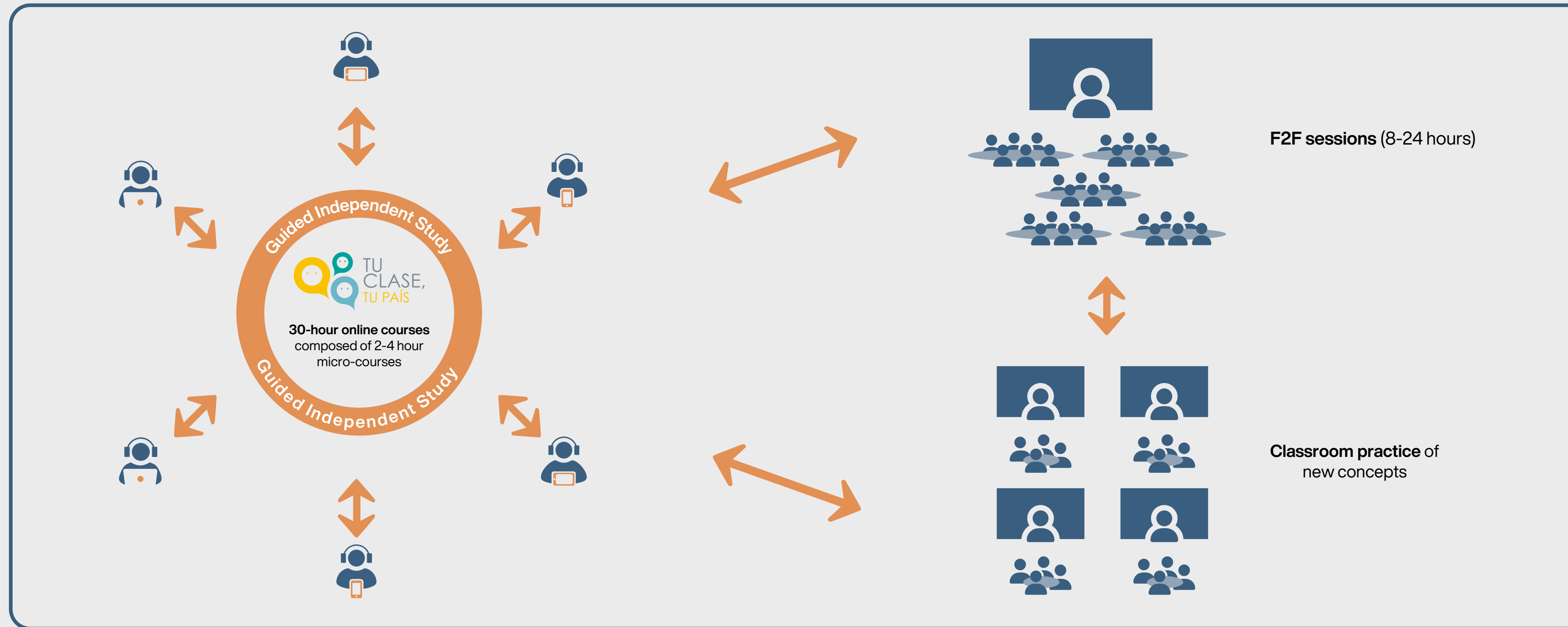Tu Clase, Tu País. (n.d.). *Formacion docente [Teacher formation]*.

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TCTP Model

Tutors undergo a certified training program and are assigned to 30 teachers each

Teachers complete a **digital portfolio** that includes personal reflections, resources, and documentation of their "micro-practices" (authentic exercises in the classroom). **Formative assessment is done by tutors** and through **co-assessments and self-assessments**.

Guided Independent Study

Guided Independent Study

TU CLASE, TU PAÍS

30-hour online courses composed of 2-4 hour micro-courses

F2F sessions (8-24 hours)

Classroom practice of new concepts

Profile 12.

UNESCO Mobile Project in Nigeria and Pakistan

LOCATION
Asia (Pakistan) • Sub-Saharan Africa (Nigeria)

YEARS OF IMPLEMENTATION
2012 to 2014

FUNDERS
UNESCO

IMPLEMENTERS
UNESCO

SCALE
50 teachers in 50 primary schools in the Federal Capital Territory of Nigeria • 150 teachers in 75 schools in four areas of Pakistan

Introduction

In seeking to improve teacher quality in low-resource environments, UNESCO piloted the use of mobile technologies in national TPD systems in order to make TPD available to primary school teachers who had limited access to professional development.

The projects (in Nigeria, Mexico, Pakistan, and Senegal) sought to address the issue of low teaching quality characteristic in many low-income countries particularly in Sub-Saharan Africa. The aim was to demonstrate that the use of mobile phones for TPD was scalable and sustainable in very low-resource contexts.

The project in Nigeria aimed to develop the pedagogical practices of primary school English Language teachers to improve student outcomes in English language and literacy. On the other hand, the project in Pakistan aimed to improve the knowledge and pedagogical practices of female Early Childhood Education teachers working in rural areas.

Key features of the UNESCO Mobile Project model in Nigeria

- Participating teachers received training at the outset of the project, during which they were given Nokia mobile phones with pre-paid SIM cards and taught how to access and navigate the mobile learning service. Data costs were minimal and did not exceed USD 1 a month.

- The content was delivered through short daily messages of 50-100 words with an image sent to participants over a 52-week period. It was designed to cover content relating to the British Council's 30-hour Certificate in Primary English Language Teaching course.

- The teachers were divided into five groups, each overseen by a Teacher Trainer who provided ongoing support. The groups met regularly to discuss implementation of the pedagogical advice and create a professional learning community (PLC).

Key features of the UNESCO Mobile Project model in Pakistan

- Participating teachers were given a free Nokia mobile phone and a SIM card with six months of credits for internet access, texting, and voice calls, which they used to interact with each other and ask questions. As in Nigeria, content was delivered through short daily messages.

- Teachers each received three days of training on how to use the mobile phones and access the TPD content.

- An Early Childhood Education professional development manual was developed for use on mobile phones with small screens based on existing learning materials for the National Curriculum for Early Childhood Education. This was accompanied by videos and a Facebook group for teachers to form online communities of practice (CoPs) and for communications between teachers, the project team, and stakeholders.

Participant feedback from the project in Nigeria was positive: it had reportedly improved their English language skills and substantially increased their use of ICT for teaching purposes. The feedback from participants of the project in Pakistan was also largely positive, with teachers reporting improved pedagogical and technical skills and changes in their teaching practice, including greater use of activity-based learning. Both projects reported the creation of CoPs; improved relationships with other teachers, parents, and pupils; and greater knowledge-sharing among colleagues. Student learning outcomes also improved but at a lower rate than expected.

Sources

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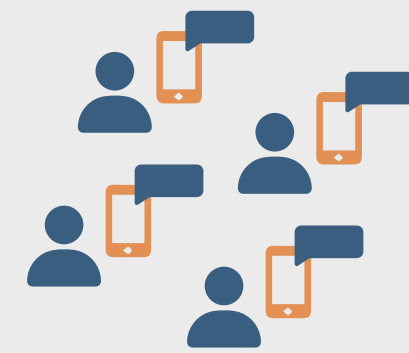
UNESCO Mobile Project Models

NIGERIA
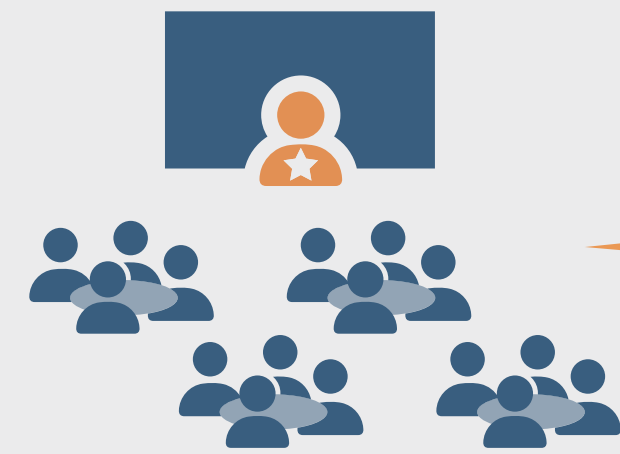
F2F training on accessing and navigating the mobile learning device

Nokia mobile phones with **pre-paid SIM cards** and **data costs** of < USD 1/month given to each teacher
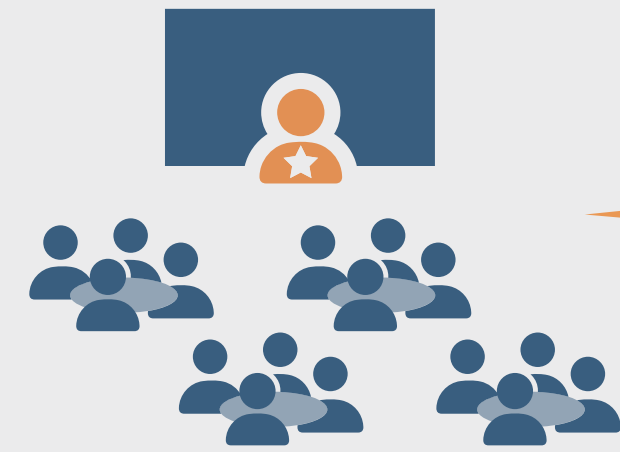
Guided independent study of content from the British Council's 30-hour Certificate in Primary English Language Teaching course received in **short daily messages (50-100 words) with an image** over 52-weeks
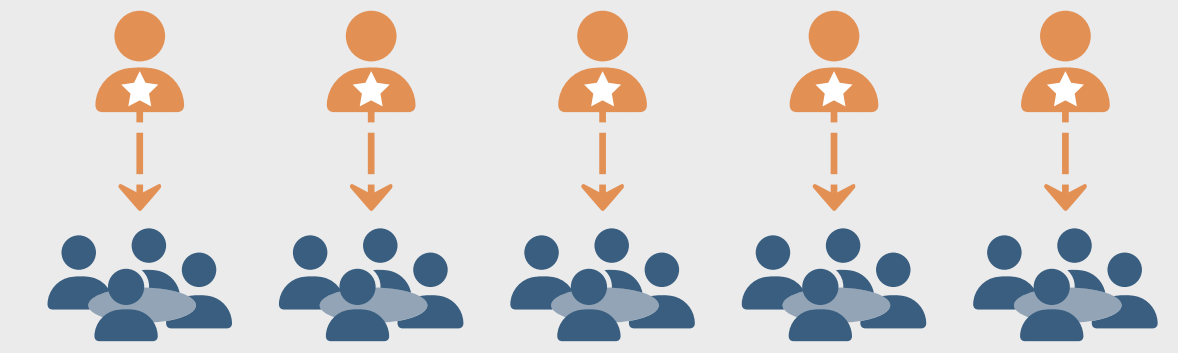
5 F2F professional learning communities (PLCs), each overseen by a **Teacher Trainer** who provides ongoing support, that meet regularly to discuss implementation of the pedagogical advice

PAKISTAN

3-day F2F training on how to use the mobile phones and access the TPD content

Nokia mobile phones and a **SIM card with 6 months of internet access, texting, and voice call credits** given to each teacher

Guided independent study of TPD content on Early Childhood Education received in **short daily messages (50-100 words) with some accompanying videos**

Online communities of practice (CoPs) via text, phone calls, and Facebook groups

Supported by an early childhood education professional development manual and by the Project Team

Section 4

A focus on equity

The elimination of disadvantage is critical to achieving equity and social justice in TPD. Careful choice of ICTs and optimization of materials and support for low connectivity or offline use can enable more equitable distribution of professional learning opportunities for teachers in underserved communities or less accessible regions, and allow greater adaptability to respond to the professional needs of diverse groups of teachers. Nevertheless, inequalities remain. Teachers may lack confidence and/or competencies with digital technologies and additional support may need to be provided for technology issues, as in the CLIx program (*see Section 3, Profile 10*) or the Peking University MOOC (*see Section 3, Profile 9*). Teachers may have insufficient financial resources to purchase data packages; or, despite the flexibility in timing and pace of learning possible with many offline/online programs, competing domestic and family demands may limit their time to attend to their own professional development. The latter has been suggested as an explanation for the lower completion rates for female teachers observed in the Peking University MOOC. These issues and associated social norms need to be acknowledged and understood by those designing TPD@Scale.

TPD programs across the globe generate and share little data on the participation of teachers with different characteristics and abilities, e.g., teachers with disabilities or from different ethnic backgrounds (Fletcher-Campbell & Soler, 2022). Further attention needs to be paid to understanding the participation of diverse groups of teachers to inform more equitable TPD@Scale design.

To be equitable, TPD should be participative, with teachers themselves accorded agency; the learning activities should support teachers so that they can foster equity in learning for their pupils (Fletcher- Campbell & Soler, 2022). Further, TPD design needs to work from a position in which teachers are viewed as responsible professionals and self-directed continuous learners. Teacher agency, program design, and use of ICTs are intimately connected. Teachers receiving daily messages, attending offsite workshops, or following a tightly-structured program often have little space to exercise agency to tackle a pressing problem of practice or dilemma within their own classroom. In these instances, they are positioned as passive recipients of professional development.

Nevertheless, ICT resources, when deployed in programs such as ICT4RED (*see Profile 15*), IT for Change in India, Tejas (*see Section 2, Profile 4*), TESS-India (*see Section 1, Profile 1*), or Zambian Education School-Based Training (ZEST) (*see Profile 13*), can offer the opportunity for individual teachers or groups of teachers to construct a program of professional development based on assessment of their own professional needs within a framework of national, regional, or school priorities. When connectivity is more reliable, this choice can be extensive. Teachers on Costa Rica's Programa Nacional de Informática Educativa (PRONIE) (*see Profile 14*), for instance, are able to construct their own learning journeys by selecting from a plethora of online courses, webinars, and digital resources.

Digital tools also enable teachers to more easily contribute to the creation of shared resources and engage in self-assessment, as in the TCTP courses (*see Section 3, Profile 11*) and ICT4RED. This opens space for teachers' voices to become more audible and their work to become
more visible.

Next Section ›

Profile 13.

Zambian Education School-based Training (ZEST)

LOCATION
Sub-Saharan Africa (Zambia)

YEARS OF IMPLEMENTATION
2017 to 2022

FUNDERS
 Government of Scotland • World Vision

IMPLEMENTERS
The Open University, UK • Government of Zambia • World Vision

SCALE
4,000 teachers and school leaders in Zambia's Central Province by project end

Introduction

ZEST aims to create and implement a scalable and "enhanced" approach to the existing school-based teacher development program and contribute to improving the quality of teaching and learning experiences for children in primary schools in Zambia's Central Province.

ZEST was co-designed with Zambian teachers, building on existing practices and supporting an active, learner-centered approach to teaching that will improve learning outcomes in Zambia.

Key features of the ZEST model

- In the ZEST Lesson Study Approach, school-based teacher study groups agree on the focus for collaborative improvement based on diagnoses of their own professional needs.

- Teacher study groups meet regularly at the school level either in subject groups, by grade, or as a whole staff to undertake activities 1, 2, 4, 5, 7, and 8 described in the diagram on the next page. The frequency and size of meetings are decided at the school level.

- The cycle is repeated with a different pedagogic focus.

- School In-Service Coordinators (SICs) or nominated members of staff facilitate the meetings. Schools are grouped into zones, and SICs are supported by Zonal In-Service Coordinator (ZICs). ZICs are then supported by District Resource Centre Coordinators (DRCCs). All of these are pre-existing roles within the Zambian education system.

- To enable, support, and enhance teacher use of the ZEST Lesson Study Approach, ZEST provides teachers a Teachers' Toolbox containing both traditional and digital resources and tools. The Teachers' Toolbox includes:

  ○ Nine active teaching approaches
  ○ Audio and video resources to explain and exemplify the nine approaches
  ○ TESSA OER library
  ○ TESSA Curriculum guide linking TESSA OER to the Zambian school curriculum
  ○ Revised Zambian school curriculum
  ○ Training Handbook
  ○ Teacher group meetings guide
  ○ Teacher notebook to record reflections
  ○ Local resources to support student learning

All the resources and tools in the Teachers' Toolbox are currently text-based to ensure that all teachers can access them. They were initially printed for teachers in Cohorts 1 and 2 but the project now provides resources to subsequent cohorts via Raspberry Pi devices using an SD card. These devices allow teachers to access materials offline and can also act as a wi-fi hub. Schools appoint a "digital champion" trained by World Vision. The digital champion then supports other teachers in their school to contextualize learning. In the current phase of the project (Phase 2), up to 420 schools will be provided with Raspberry Pi devices. Where possible, teachers are encouraged to use their smartphones (if they have them) should there not be enough Raspberry Pi devices for the teachers to share.

ZEST provides a strong example of working within and enhancing existing systems through working with education officials and the already established lesson study format of TPD that preceded ZEST. During the pandemic, the project adapted by engaging in remote support via WhatsApp to form informal communities of practice (COPs) and for general communications, and through workshops on Zoom.

At the end of the project in 2022, the training program and resources will be made available online and free from copyright to teachers and educators throughout Zambia, thus enhancing sustainability.

Sources
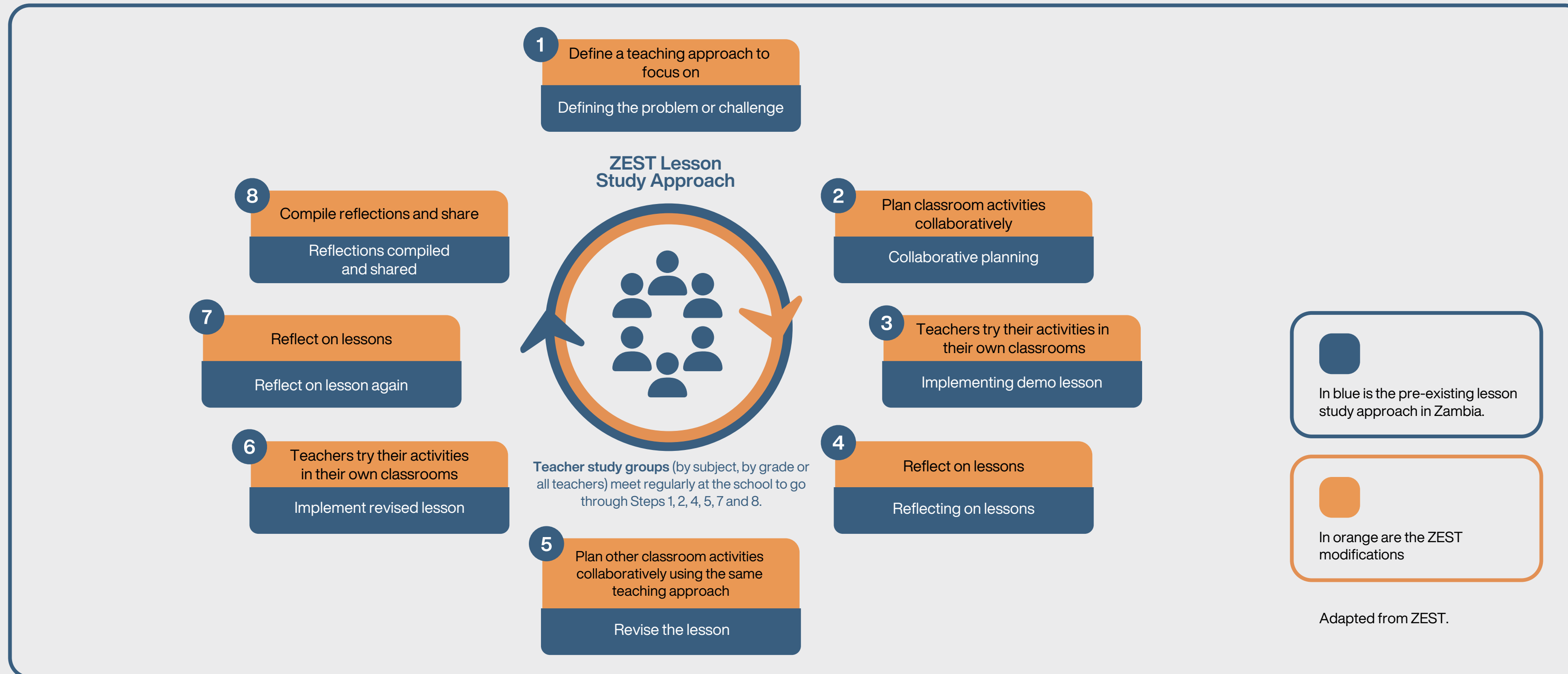
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ZEST Model

School In-Service Coordinators (SICs) or **nominated staff** support meetings. Groups of schools are supported by a **Zonal In-Service Coordinators (ZICs)** and **District Resource Centre Coordinator**

ZEST Lesson Study Approach

1
Define a teaching approach to focus on
Defining the problem or challenge

2
Plan classroom activities collaboratively
Collaborative planning

3
Teachers try their activities in their own classrooms
Implementing demo lesson

4
Reflect on lessons
Reflecting on lessons

5
Plan other classroom activities collaboratively using the same teaching approach
Revise the lesson

6
Teachers try their activities in their own classrooms
Implement revised lesson

7
Reflect on lessons
Reflect on lesson again

8
Compile reflections and share
Reflections compiled and shared

Teacher study groups (by subject, by grade or all teachers) meet regularly at the school to go through Steps 1, 2, 4, 5, 7 and 8.

In blue is the pre-existing lesson study approach in Zambia.

In orange are the ZEST modifications

Adapted from ZEST.

ZEST
Zambian Education School-based Training

TEACHERS' TOOLBOX
Print or digital using a Raspberry Pi and SD card

- 9 active teaching approaches
- Audio and video resources to explain and exemplify the 9 approaches
- TESSA OER library
- TESSA Curriculum guide linking TESSA OER to the Zambian school curriculum

- Revised Zambian school curriculum
- Training Handbook
- Teacher group meetings guide
- Teacher notebook to record reflections
- Local resources to support student learning

Profile 14.

Programa Nacional de Informática Educativa (PRONIE)

LOCATION
Latin America (Costa Rica)

YEARS OF IMPLEMENTATION
1989 to present

FUNDERS
Ministry of Public Education • Omar Dengo Foundation

IMPLEMENTERS
Ministry of Public Education • Omar Dengo Foundation

SCALE
National

Introduction

PRONIE is a partnership between the Ministry of Public Education and the Omar Dengo Foundation to provide Costa Rican students opportunities to learn how to use digital tools to strengthen learning, creation, problem-solving, communication, and collaboration. The goal of the TPD component of PRONIE is to strengthen competencies for effective teaching supported by the use of technologies. It includes guidance, pedagogical support, and the promotion of innovative, constructivist learning experiences that are tailored to the needs and interests of the different teachers who participate in the program.

PRONIE's TPD program is based on four main principles: 1) a framework of teacher competencies for the educational use of ICTs; 2) the promotion of good practices for professional development; 3) application of principles of the andragogical model; and 4) use of "universal design for learning" standards. It offers several pathways including:

1. **Educational Informatics Laboratories (LIE):**
   Online courses that last approx. 40 hours. Most of the online courses are voluntary and last between 6 to 8 weeks, with an average weekly commitment of 3 to 5 hours.

2. **Learning with Mobile Technologies (ATM):**
   40 study hours are distributed in two days of face-to-face sessions (16 hours), 16 hours applying learning with students, and one face-to-face closing day (8 hours).

3. **Entrepreneurship, Innovation and Employability (EIE):**
   To strengthen Costa Rican technical education, the program collaborates with industry to upskill teachers in aligning program competencies to industry certification in the areas of programming, operating systems, connectivity and networks, cyber security, industrial automation, data analysis, design and digital manufacturing, and equipment support and maintenance.

Key features of the PRONIE TPD model

- Training activities are supported and supplemented by a variety of digital didactic resources (videos, animations, infographics, etc.), specialized materials, and microlearning content linked to pre-identified topics on which teachers require the most support and inputs to improve their work. The open online courses are available for free to all teachers in the country on the Upe virtual campus (https://www.upe.ac.cr/) run by the Omar Dengo Foundation with the Ministry of Public Education.

- Compulsory courses are taken during working hours. Attendance, completion, and results are reported to the regional Ministry of Public Education for accountability and tailored follow up.

- There are also voluntary trainings with a plan to implement a digital system for monitoring, follow up, and contact with the teacher participants that will generate reminders, recommendations, and messages of encouragement. Teachers receive counselling from an advisor including follow-up support online, via telephone, and in some cases face-to-face. The ratio of facilitators to learners depends on the type of professional development activity.

- Participation in online learning communities on the Upe virtual campus, exchange with mentors (advisors or other peer teachers), participation in regional exchange meetings, and participation in competitions in good teaching practices are also promoted.

- A variety of teacher learning assessments are used to evaluate teacher progress. These include formative and summative online tests at the end of each module; assessment tasks assessed by advisors; and teachers engaging in classroom practice activities, documenting this, presenting their experiences, and receiving feedback from peers and advisors.

- To facilitate access to the open online courses, PRONIE provides educational centers with software, hardware, and connectivity, with a specific focus on inclusion by geography, ethnicity, gender, and socio-economic status (including indigenous territories and extreme rurality). This includes institutions in peri-urban and rural areas as well as institutions with populations with special educational needs.

In terms of scalability, the self-managed online offer has the potential to reach more regions at a low cost. The peer-to-peer support system for teachers also has potential to scale to more teachers in more locations. The program is exploring how follow-up support can be made more scalable. Since 2019, this has consisted of 1) answering queries via WhatsApp, email, and Messenger; 2) mass mailings; 3) regional teacher exchange meetings; and 4) personalized advice and support for selected teachers and schools. A series of complementary actions are also being carried out to encourage teachers to share and disseminate good teaching practices with the use of technology (e.g., Inspiratec Competition and Network of Leading Teachers).

In terms of access, PRONIE is national in scale: in 2019, it reached 92.2% of teachers from pre-school to Grade 9. From 2016 to 2018, online courses had an average completion rate of 58% and an average pass rate of 33%. Of the face-to-face and blended learning offerings, about 67% of voluntarily and compulsorily enrolled teachers passed, with a retention rate of 86%.

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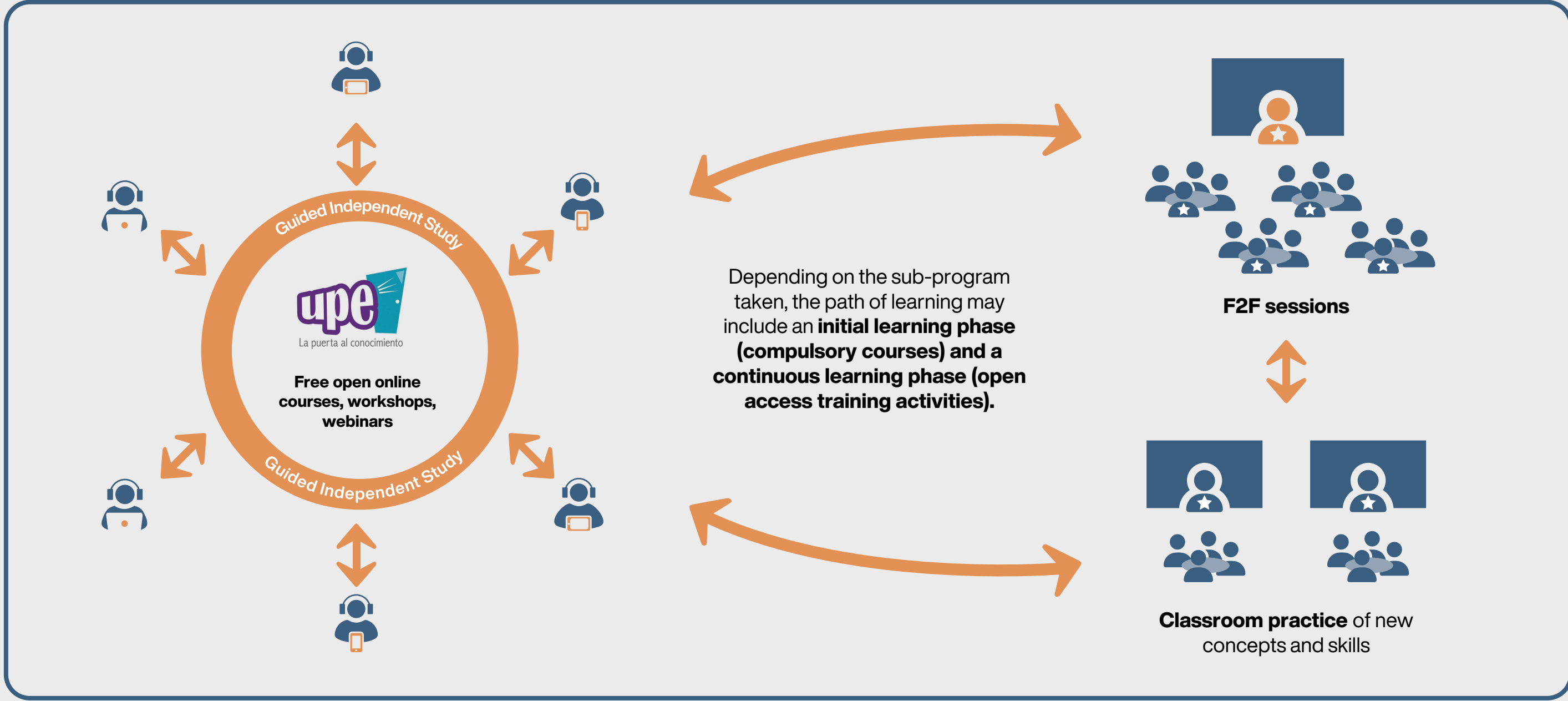
PRONIE TPD Model

PRONIE Courses

Educational Informatics Laboratories (LIE)
online, approx. 40 hours

Learning with Mobile Technologies (ATM)
F2F, 24 hours + classroom application, 16 hours + online, approx. 30 hours

Entrepreneurship, Innovation, and Employability (EIE)
online, no specified hours

Advisor provides support online, via telephone, and face-to-face

Online professional learning communities (PLCs) via the Upe virtual campus

Variety of **teacher learning assessments**

Guided Independent Study

upe
La puerta al conocimiento

Free open online courses, workshops, webinars

Guided Independent Study

Depending on the sub-program taken, the path of learning may include an **initial learning phase (compulsory courses) and a continuous learning phase (open access training activities).**

F2F sessions

Classroom practice of new concepts and skills

upe
La puerta al conocimiento

Learning resources: Digital didactic resources (videos, animations, infographics, etc.), specialized materials, and microlearning content

ICT resources: Educational centers provided with hardware, software, and connectivity

Profile 15.

Information Communication Technology for Rural Education Development (ICT4RED)

LOCATION
Sub-Saharan Africa (South Africa)

YEARS OF IMPLEMENTATION
2012 to 2015

FUNDERS
Government of South Africa (Department of Science and Technology, Department of Basic Education, and Department of Rural Development and Land Reform) • Eastern Cape Provincial Department of Education

IMPLEMENTERS
Council for Scientific and Industrial Research • SchoolNET South Africa

SCALE
approx. 350 teachers in 26 deep rural schools (23 basic education, 3 senior secondary) in the Nciba Circuit of the Cofimvaba school district in the Eastern Cape Province of South Africa

Introduction

The ICT4RED initiative was a research, development, and implementation program designed to change the way teachers teach with technology in their specific context over a period of three years.

The program's challenge was to identify and introduce appropriate technology (devices and other supporting ICT infrastructure) in ways that would improve teaching and learning engagement, support sustainability beyond the initiative, and ensure true integration into existing education processes while managing challenging logistical and infrastructure problems.

ICT4RED tailored the applied technology to the specific educational needs of the target schools. Only after the educational needs were identified and the pedagogical approaches to address these were decided on was the relevant ICT — tablets in this case — introduced.

Key features of the ICT4RED model

- Adopting a pragmatic application of Mishra & Koehler's (2006) TPACK framework, ICT4RED adopted the following blended approach:

  - Ten TPD modules were created and made available to teachers under an open license on easy-to-use, relatively low-cost, and durable Android tablets that can be used in offline mode (a pragmatic approach).

  - The TPD curriculum incorporated some implied game elements that were derived from a survey of play theories and adapted to introduce the TPD sessions.

  - The modules (and face-to-face sessions) were aimed at a broad spectrum of teachers rather than being phase- or year-specific. Hence, teachers, as context experts, became co-creators of content as they adapted the activities for their own needs and classes.

  - Each TPD module had clear goals and targets that were articulated as badges (26 in total). Some were compulsory (13 badges); the others, "challenges" (13 badges). To earn a badge, teachers had to show evidence of having used the ideas from the module in their own teaching. Criteria were communicated clearly to the participants at each TPD session, and badges were celebrated and awarded in a transparent and fair manner.

- There was an "Earn as you learn" component: Teachers were told that they would have to complete all the compulsory badges in order for ownership of the tablet to be transferred to them. Once a certain number of teachers in a school had completed particular badges, these schools were awarded additional technology such as projectors.

- Later iterations of the project also emphasized more structured reflective practice among teachers, schools, and local district office staff.

Teachers, head teachers, principals, and district officials were involved in co-designing the program, specifically in the initial phases and subsequent iterations informed by design science methodology. The focus of the program emphasized the support and empowerment of teachers and those around them to effectively use technology to teach and impact learners, thus highlighting their agency and unique professional needs.

ICT4RED achieved very high completion rates for the badges. Modules from the program published under an open license are now being used in other TPD programs.

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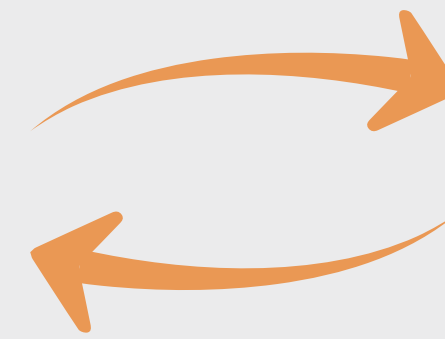
ICT4RED Model

Dedicated **Facilitator for each school** and a **Local Coordinator**

FOR EVERY MODULE

2 **Classroom practice** of new ideas

3 Facilitator **evaluates evidence**

1 **F2F TPD sessions** to at ideas in the module

4 **Badge** awarded

10 self-study modules, each leading to a badge

Badge(s) + Equipment
Graduate when all compulsory badges are earned

Section 5

Sustainable change

TPD@Scale programs need to be sustainable, flexible, and adaptive to changing needs if they are to support the drive for transformative change in teaching and learning and increased teacher professionalism.

There are several ways in which TPD@Scale programs consider this challenge. Firstly, most programs are developed and delivered in partnership with ministries of education and many shift to being wholly owned by the ministry, as in the case of ELLN Digital in the Philippines (*see Profile 17*). Some programs, such as PACD in Ecuador (*see Profile 16*), are driven primarily by the ministry from the start. This program represents a major shift in how TPD is provided in Ecuador, from a traditional cascade design to the use of an online platform offering access to the same quality of materials and activities for all teachers regardless of their location and status.

Secondly, many TPD@Scale programs recognize that teachers and teacher educators (e.g., district officials, local tutors, and staff at Colleges of Education) are part of a holistic, interdependent community engaged in the "activity" of teaching and learning in a specific environment. Change in the "activity" of teaching and learning in one part of the community necessarily has an impact on other parts of the community. Thus, involving actors across the community is essential for sustainable change.

Too frequently, conventional programs have seen teachers, teacher educators, and the wider education environment as separate entities and have not considered that system change requires that changes to practice be interrelated and mutual across these groups. In cascade programs, only limited actors across the system have needed to engage directly with teachers, their conditions of work, priorities, and capabilities. The holistic system design of many TPD@Scale programs, as exemplified by the PACD initiative, facilitates interaction between teachers and educators from all levels. Through this, members of the latter group have developed their awareness of the conditions of teachers.

Finally, several TPD@Scale programs have built-in cycles of continuous adaptation. These adaptations generate evidence that inform further adaptations toward the goal of equitable, high-quality, and efficient TPD for all teachers. This has been formalized in the ELLN Digital program through an improvement science approach (using Plan-Do-Study-Act or PDSA cycles) and in the ICT4RED program (*see Section 4, Profile 15*) with a design science approach. The use of continuous improvement cycles is relatively new in education but has shown promise as a mechanism for systemic change to improve student outcomes (Lewis, 2015) and to build capacity for system-wide learning and change. By using iterative testing cycles, educators can generate knowledge within different levels of the education system and scale this towards system-wide change.

Profile 16.

Programa de Actualización Curricular Docente (PACD)

LOCATION
Latin America (Ecuador)

YEARS OF IMPLEMENTATION
2016 to 2018

FUNDER
Ministry of Education

IMPLEMENTER
Ministry of Education

SCALE
National: 187,365 public school teachers

Introduction

The Ministry of Education of Ecuador implemented the PACD program between 2016 and 2018, aiming to introduce all teachers to the new National School Curriculum that was published in 2016. Building on previous blended and online programs offered through a public virtual learning environment (VLE) on the open-source LMS Moodle, the designers decided that there was sufficient experience of online learning within the teaching workforce to utilize a wholly online program across the national education system.

Thus, PACD put in place a MOOC in which 187,365 state school teachers or 90.8% of the total teacher population participated. This represented a new approach by the Government.

Key features of the PACD model

- The PACD model used a MOOC due to relative low cost and extensive reach across the country and based on learning from previous smaller scale online TPD programs.

- The Ministry of Education created a VLE called *Mecapacito* on Moodle for the MOOC.

- The MOOC is comprised of 13 modules, of which teachers had to take six — five general modules and one specialized module to be chosen based on eight possible teacher profiles in terms of educational level and subject area. In order to receive a 100-hour certificate, teachers had to obtain a mark of more than 7 out of 10 in each module.

- Modules included "The collaboration of teaching teams in the development of the institutional curriculum" (Module 3), "Assessment in the classroom" (Module 5), and "Cultural and Arts Education curriculum development" (Module 6), among others.

- MOOC activities were designed to be undertaken as self-study with peer support. In the program evaluation interviews, implementers highlighted that the lack of budget led to the PACD being designed so as not to need tutors to accompany the participants.

The course passing rate was relatively high at 66.5% (versus a typical international passing rate of 10-20%). This is partly attributed to the fact that the MOOC was compulsory and the resultant certification was tied to the Ministry of Education's promotion and re-categorization processes as well as to teachers' salaries. The meaningful content, high-quality supplementary materials, and the changes in teaching practices introduced were noted as program strengths. The certification element was also identified as a particular strength and provided a strong incentive for teachers.

In research conducted by SUMMA (2022) on the PACD program, teachers highlighted that PACD effectively established important conditions to begin transforming their teaching practices in relation to the new curriculum. Over the course of the program, teachers stated that they gradually gained more mastery over the implementation of the curriculum and affirmed that more daily experimentation and reflection in the classroom would have been helpful to support change in their practice. Furthermore, they stated that these experiences would have been enriched by the formation of "working teams" (a type of forum or learning community) that share ideas and experiences.

In terms of further challenges associated with the program, some teachers expressed dissatisfaction with the theoretical nature of some of the content, the top-down nature of the intervention (i.e., from the Ministry to teachers), and the resultant lack of tailoring to their specific needs, as well as desiring more practical activities to enhance application of new knowledge. Nonetheless, the program has resulted in a paradigmatic change in the way TPD is delivered in Ecuador with the government's new approach to utilizing technology to facilitate TPD, the creation of a new online system via the VLE, and its extensive coverage across the country.

Sources

SUMMA. (2022). *Teacher professional development supported by information and communication technologies: A case study of the 2016-2018 Teacher Training Program for Curricular Update in Ecuador.* SUMMA and Foundation for Information Technology Education and Development.
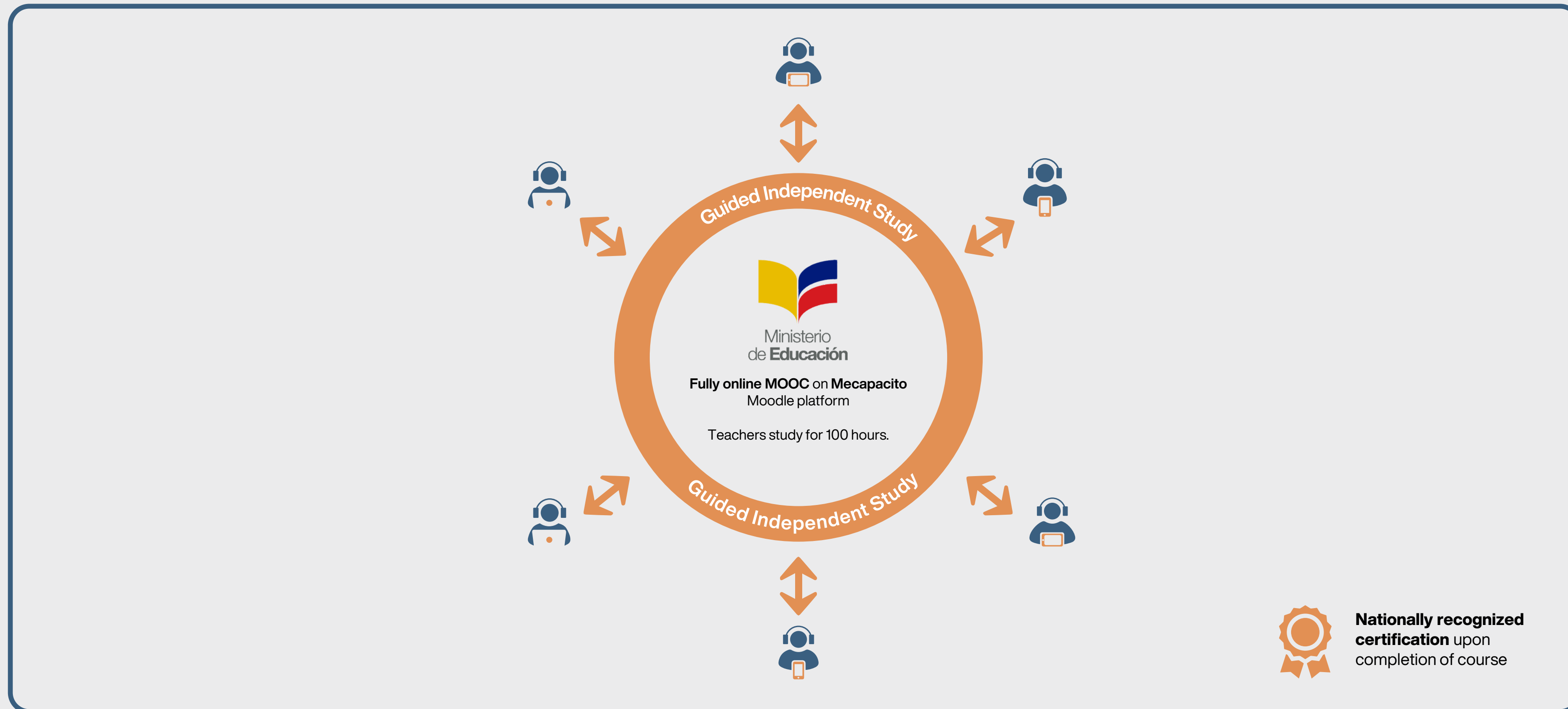
PACD Model

Online peer interaction in forums on the MOOC platform

Computer-marked assessments

Guided Independent Study

Ministerio de Educación

Fully online MOOC on Mecapacito
Moodle platform

Teachers study for 100 hours.

Guided Independent Study

Nationally recognized certification upon completion of course

Ministerio de Educación

New national curriculum and supplementary materials

Profile 17.

Early Language, Literacy and Numeracy Digital (ELLN Digital)

Introduction

In 2015, FIT-ED and the Department of Education co-developed a TPD delivery model as an alternative to the Department's "workshop style" or traditional cascade model (10-day face-to-face workshop) to reach the entire teaching force of over 800,000 teachers in a cost-effective and timely manner. This ELLN Digital pilot involved 240 rural, peri-urban, and urban primary schools and reached 4,040 K to 3 teachers of early language literacy and numeracy.

The success of ELLN Digital's 2016 pilot led to a national scale up in 2019 to reach over 250,000 K to 3 teachers in a multi-year phased roll-out. During the pandemic school year (2020–2021), the ELLN Digital model was adapted to prepare school leaders and teachers for remote learning. Two courses were created and launched in July and August 2020. Over 500,000 have taken these courses, comprising more than half of the public school workforce.

A practice-based course, ELLN Digital combines independent learning using guided offline, interactive, and multimedia modules with classroom practice, and co-learning with peers in a school-based professional learning community. In this blended approach, teachers learn from and with standardized, quality assured course content that supports them in localizing instructional materials and strategies for their diverse learners.

Key features of the ELLN Digital model

- Teachers receive a CD, flash drive or download link of the ELLN Digital Course Package (or the Package is copied onto school and teacher devices by designated staff), and study each lesson in the courseware offline on their own and at their own pace.

- As part of each ELLN lesson, they test their new knowledge and skills in the classroom with pupils, and then meet at least every two weeks with fellow teachers (2 to 15) in a school-based professional learning community called a Learning Action Cell (LAC) to reflect on their classroom practice related to the ELLN lesson. LACs are led by designated LAC Facilitators who are teachers within the school.

- Additional expert support is provided to teachers from Division Technical Assistance Providers.

- Teachers go through this cycle of self- and co-learning, application, and reflection until the course is completed.

- Teachers who complete the course are awarded a certificate of completion and, if arranged by the Division, credits to meet the national continuing professional development requirement.

- Since the courseware is offline, lack of internet access is not a barrier to participation. However, teachers must have adequate computer time to access the digital modules, resources, and tools. Supplementary online resources are available to those with internet access.

- Readiness assessment and improvement cycles (Plan-Do-Study-Act or PDSA) were introduced to the national scale up to enable continuous improvement in the implementation of ELLN Digital at the school and division levels, maximizing impact and sustainability overall.

- The PDSA cycle coincides with the lesson cycle (learning-application-reflection), which typically takes two weeks per lesson. Teachers and the LAC Facilitator collect data on the experience of each lesson cycle through structured reflection forms for individual teachers (the Teacher Engagement Report or TER), a LAC Session Report accomplished by the LAC Facilitator, and classroom observations by the school head. The data are then analyzed by the School Head and LAC Facilitators using a PDSA form to identify and prioritize actionable problems arising during the two-week lesson cycle and the solutions to be enacted. For example, teachers might lack computer time to finish going over the self-study lessons, a LAC Facilitator might have been unprepared for the LAC session, or the School Head might have been unable to observe classes and give feedback to the teachers. In general, the problems encountered by the schools/teachers encompass issues of resourcing, administrative support, teacher-learner attitudes and practice, and teacher-learner support. Planned solutions are tested during the next two-week lesson cycle and then assessed in the course of the next PDSA cycle. School Heads, LAC Facilitators, and the teachers are thus continuously engaged in problem-solving to improve the course-taking in terms of both how it is managed by the school and the teachers' experience of the course.

- The Division also goes through PDSA cycles where they collect evidence and feedback from teachers and school heads in order to improve support provision to course takers by Division Technical Assistance Providers.
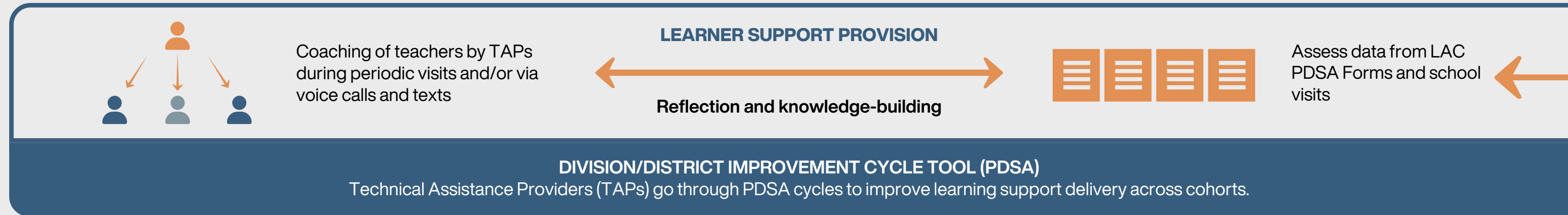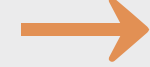
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Oakley, G., King, R., & Scarparolo, G. (2018). *An evaluation of ELLN Digital: Technology-supported teacher professional development on early language, literacy and numeracy for K-3 teachers.* Foundation for Information Technology Education and Development.

TPD@Scale Coalition for the Global South. (2021). *Designing teacher professional development @scale for equity in education* (Policy Brief). Foundation for Information Technology Education and Development.
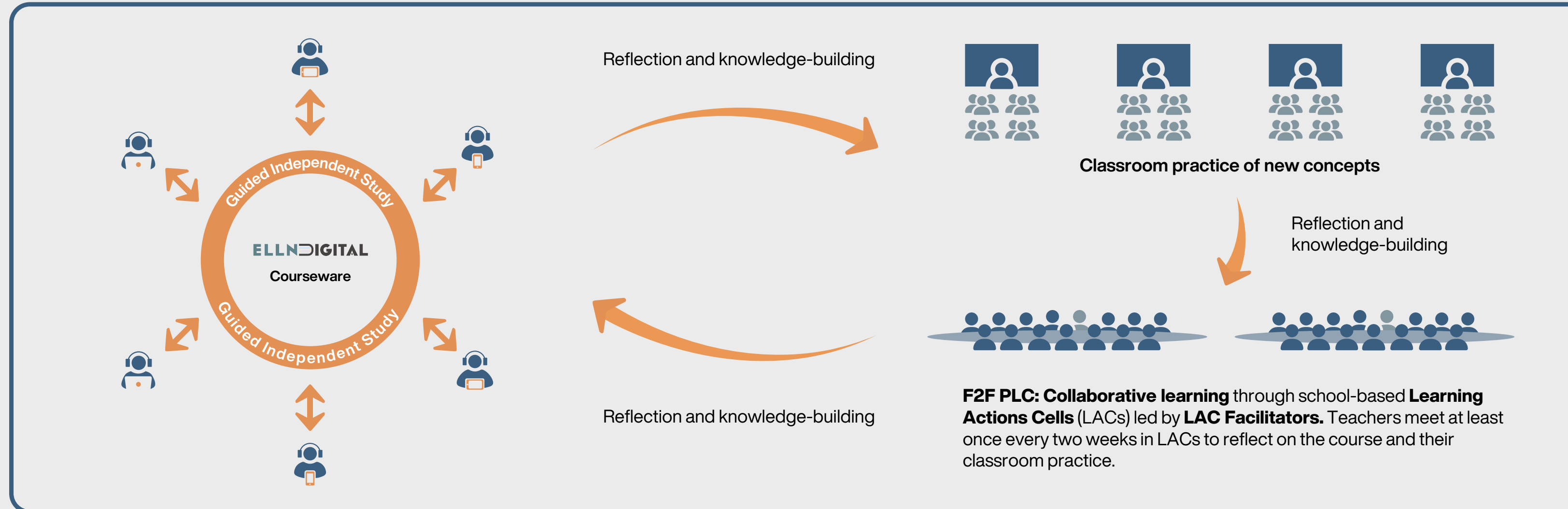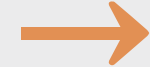
Unpublished program documents.

📍 **LOCATION**
Asia (Philippines)

📅 **YEARS OF IMPLEMENTATION**
2016 to present

💲 **FUNDER**
United States Agency for International Development through the Philippine-American Fund • International Development Research Centre • UKAid

☞ **IMPLEMENTERS**
Philippine Department of Education • Foundation for Information Technology Education and Development

↗ **SCALE**
Piloted with over 4,000 teachers in 240 schools nationwide; being scaled up to over 250,000 teachers across 38,000 schools since 2019

ELLN Digital Model and Improvement Cycles (Plan-Do-Study-Act or PDSA)

Division/District Readiness Assessment Tool

Coaching of teachers by TAPs during periodic visits and/or via voice calls and texts

LEARNER SUPPORT PROVISION

Reflection and knowledge-building

Assess data from LAC PDSA Forms and school visits

PDSA Forms are submitted to the Division

DIVISION/DISTRICT IMPROVEMENT CYCLE TOOL (PDSA)
Technical Assistance Providers (TAPs) go through PDSA cycles to improve learning support delivery across cohorts.

School assesses readiness through the **Readiness Assessment Tool**

Based on the results of the assessment, the School plans the implementation cohorts and addresses the gaps for the incoming cohort of learners.

Guided Independent Study

ELLN DIGITAL Courseware

Guided Independent Study

Reflection and knowledge-building

Classroom practice of new concepts

Reflection and knowledge-building

Improvement is reflected in the next lessons

Reflection and knowledge-building

F2F PLC: Collaborative learning through school-based **Learning Actions Cells** (LACs) led by **LAC Facilitators.** Teachers meet at least once every two weeks in LACs to reflect on the course and their classroom practice.
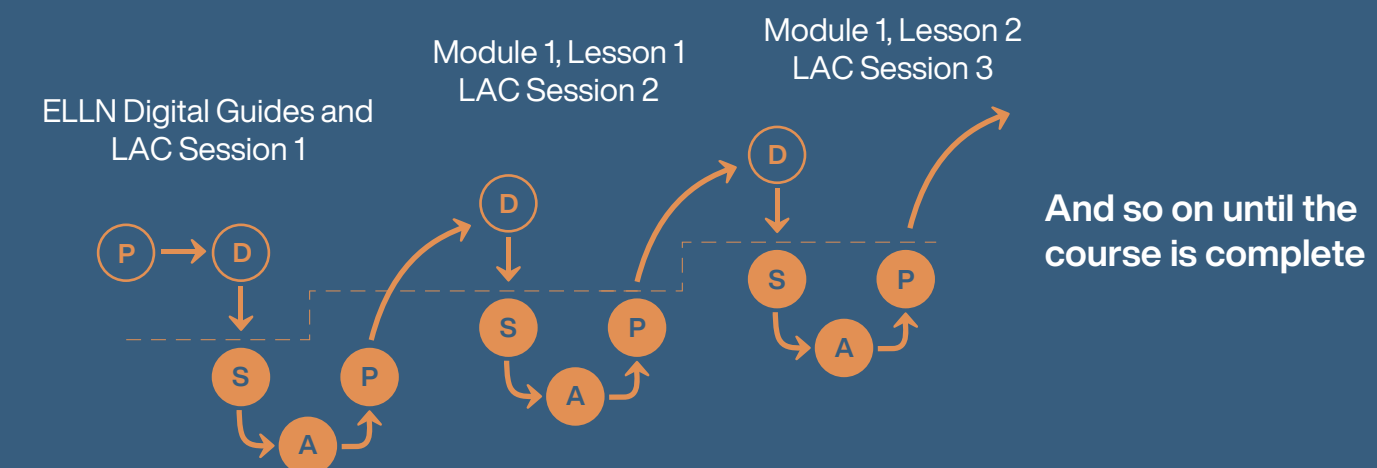
SCHOOL IMPROVEMENT CYCLE (PDSA)
LACs go through PDSA cycles to improve learning delivery within and across implementation cohorts.

Conferences are held between LAC Facilitators and the School Head to analyze Teacher Engagement Reports, LAC Session Reports, and classroom observations, and fill up the PDSA Form.

Module self-study, classroom practice and Learning Action Cell (LAC) sessions

ELLN Digital Guides and LAC Session 1

Module 1, Lesson 1 LAC Session 2

Module 1, Lesson 2 LAC Session 3

And so on until the course is complete

P → D
S → P
A

D
S → P
A

D
S → P
A

Compendium Reflection Questions

These reflective questions are intended to support individuals or small groups in taking forward ideas from the TPD@Scale Compendium into their own work.

01

The Compendium describes 17 TPD programs that use ICTs to facilitate access and participation in professional learning for large numbers of teachers or for teachers working in very challenging conditions.

Look back at the different examples and identify two or three programs that offer potential for your own context.

02

What features of these programs particularly interested you? These features might be: use of a particular tool, ways of organizing support or differentiated access to learning materials, involvement of teachers in creating materials, peer support or assessment, or an adaptive approach to implementation.

03

How would you need to adapt these programs to be appropriate for your context? This might involve integrating features from different programs or making adaptations to the program that seems most promising for your context.

Note down how you would adapt (or not) these features of your selected model or models:

a. Access and engagement with materials that encourage active experimentation in the classroom

b. Form and frequency of peer collaboration and reflection (social learning)

c. Interactions with experts (mentors, tutors, facilitators, coaches)

d. Adaptations for different groups of teachers, e.g., teachers working in remote areas, teachers without connectivity, teachers of children from minority ethnic or language groups, teachers of displaced children, etc.

In thinking about adaptation, we suggest you consider:

- Teachers' professional learning priorities
- Teachers' motivation and time for TPD
- Equity issues
- Available financing

Note what data you need to make these adaptations to the model and how you might begin to collect this data.

04

Which stakeholders will you need to involve in moving forward with TPD@Scale in your context? How might you engage them with the TPD@Scale ideas and approach?

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Annex: Glossary of referenced programs

Program	Sources
Asociación Educar para el Desarrollo Humano, Argentina	https://asociacioneducar.com/
Building Learning Foundations (BLF), Rwanda	https://buildinglearningfoundations.rw/
Ceará, Brazil	https://documents1.worldbank.org/curated/en/551861501523958003/pdf/WPS8156.pdf
Computadores para Educar (CPE), Colombia	https://www.computadoresparaeducar.gov.co/
Connected Learning Initiative (CLIx), India	https://clix.tiss.edu/
Early Language, Literacy and Numeracy Digital (ELLN Digital), Philippines	https://tpdatscalecoalition.org/publication/philippines/
En Formación Continua (EnFoCo), Argentina	https://enfoco-inet.net.ar/index.html
English in Action (EiA), Bangladesh	https://www.eiabd.com/
Espacio Maestro, Colombia	https://espaciomaestro.educacionbogota.edu.co/

Annex: Glossary of referenced programs

Program	Sources
Information Communication Technology for Rural Education Development (ICT4RED), South Africa	https://researchspace.csir.co.za/dspace/handle/10204/8155
iStep, Sudan	https://www.britishcouncil.org/partner/international-development/track-record/istep
IT for Change, India	https://itforchange.net/
MOOC East Timor (British Council)	https://openpraxis.org/articles/10.5944/openpraxis.10.3.840/
Peking University X Learning Centre, China	https://www.edx.org/school/pekingx
Primary Math and Reading (PRIMR) initiative/Tusome, Kenya	https://www.rti.org/brochures/kenya-primary-math-and-reading-primr-initiative https://www.rti.org/impact/tusome-early-grade-reading-activity
Programa de Actualización Curricular Docente (PACD), Ecuador	https://educacion.gob.ec/actualizacion-docente/
Programa Nacional de Informaticá Educativa (PRONIE), Costa Rica	https://fod.ac.cr/pronie/ https://www.upe.ac.cr/

Annex: Glossary of referenced programs

Program	Sources
Teacher Education through School-based Support India (TESS-India)	https://www.open.edu/openlearncreate/course/index.php?categoryid=45
Teacher Education in Sub-Saharan Africa (TESSA)	https://www.tessafrica.net/
Teachers for Teachers, Kenya	https://www.tc.columbia.edu/refugeeeducation/projects/teachers-for-teachers/
Technology Enabled Education through Joint Action and Strategic Initiatives (Tejas), India	https://www.britishcouncil.in/programmes/english/primary/tejas
Tu Clase, Tu País (TCTP), Latin America	https://www.tuclase.cl/
UNESCO Mobile Project in Nigeria and Pakistan	https://unesdoc.unesco.org/ark:/48223/pf0000251511
Zambian Education School-Based Training (ZEST), Zambia	https://www.open.ac.uk/about/international-development/projects-and-programmes/zest-zambian-education-school-based-training

TPD @ Scale Coalition
for the Global South Secretariat

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TPD@SCALE
COALITION
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