What Works to Improve Learning at Scale?

KEY FINDINGS FROM ***LEARNING AT SCALE*** AND THE **EDUCATION QUALITY IMPROVEMENT PROGRAM IN TANZANIA** (EQUIP-T)*

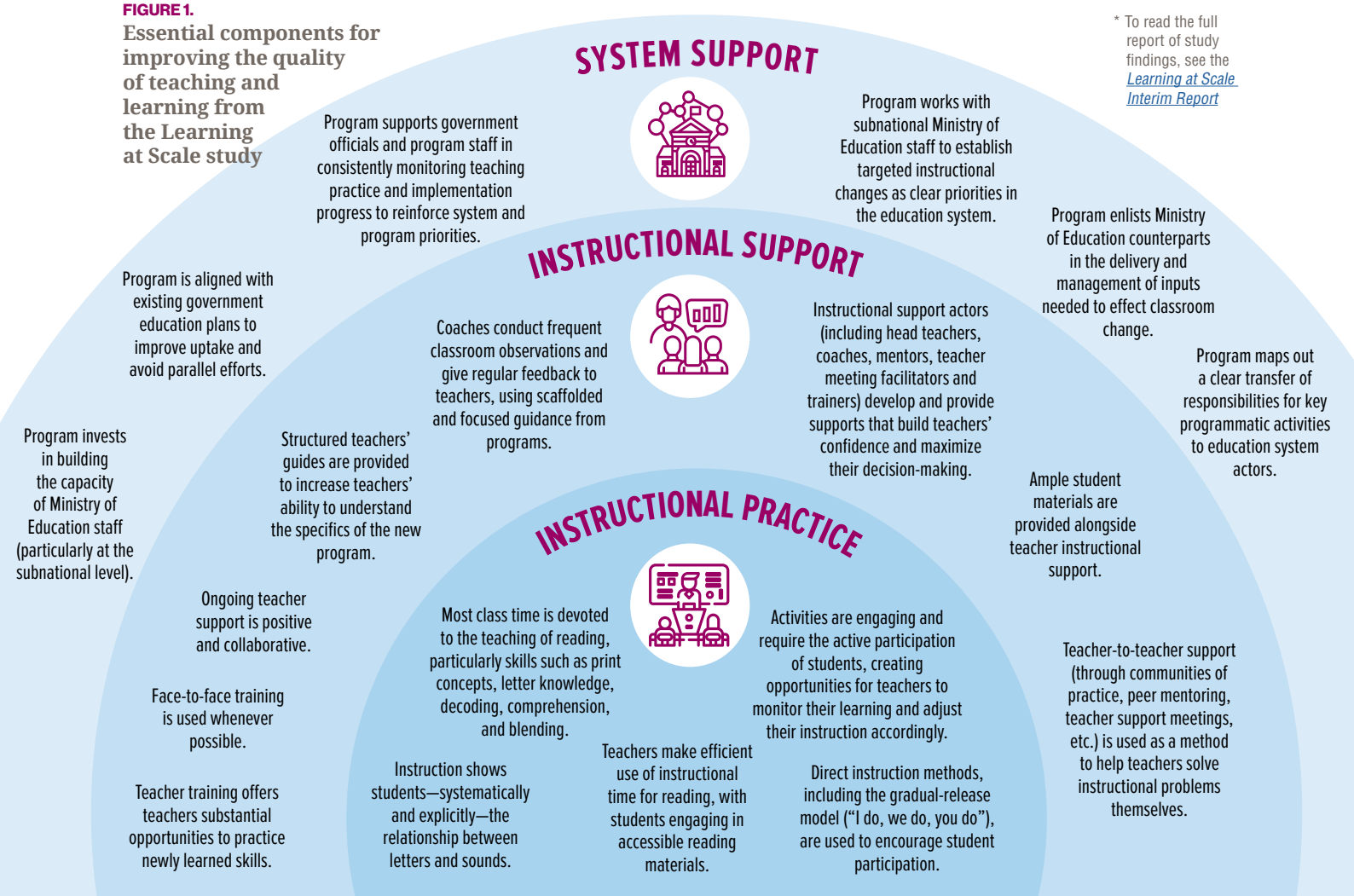
JUNE 2022

This brief presents findings on what worked to improve learning outcomes at scale under eight successful early grade literacy programs, with a focus on findings from the Education Quality Improvement Program in Tanzania (EQUIP-T).[1] These findings were generated as part of the Learning at Scale study, conducted by RTI International with the Center for Global Development and funded by the Bill and Melinda Gates Foundation. The study examined eight of the most effective large-scale education programs in low- and middle-income countries, including EQUIP-T.

The findings from Learning at Scale are organized into three categories: instructional practice, instructional support, and system support. The eight programs evaluated in this study shared commonalities in how they approached implementation to maximize program success. We identified five essential components for improving instructional practice, eight essential components for improving instructional support, and six essential components for system support (as shown in **FIGURE 1**.)

FIGURE 1.
Essential components for improving the quality of teaching and learning from the Learning at Scale study

* To read the full report of study findings, see the *Learning at Scale Interim Report*



Learning at Scale Study at a Glance

This research study examined eight of the most effective large-scale education programs in low- and middle-income countries, including EQUIP-T in Tanzania. We asked three overarching questions:

What **instructional practices** lead to learning in programs that are effective at scale?

What **methods of instructional support** lead to teachers adopting effective classroom practices?

What **system support** is required to deliver effective training and support to teachers and to promote effective classroom practices?

The findings presented in the remainder of this brief are based on data collected in March 2020, as outlined in **TABLE 1**.

TABLE 1. Data collection tools and respondent counts (Tanzania)

PROGRAM ELEMENT	RESPONDENT COUNT, BY TOOLS	CONTROL
Instructional practice	59 grade 2 teacher interviews 59 grade 2 classroom observations 59 head teacher interviews 944 student reading assessments	30 grade 2 teacher interviews 30 grade 2 classroom observations 30 head teacher interviews 479 student reading assessments
Instructional support	31 teacher meeting facilitator interviews	
System support	2 interviews with donor staff 2 interviews with program staff 8 interviews with Ministry of Education officials 10 interviews with district-level education officials	

Criteria for programs to be considered for inclusion in the *Learning at Scale* study

Effectiveness: Evidence of causal impact at scale or at pilot with evidence of effective scale-up

Scale: Operating in most or all schools in at least two administrative subdivisions

Subject: Includes a literacy component

Geography: Located in a low- or middle-income country

Type of program: Program aims to improve classroom teachers' effectiveness

Data available for analysis: Impact evaluation data and raw data on cost

Time frame: Active through 2019

Sector: Public sector, civil society, or private sector

EQUIP-T at a Glance

6-year program + 1 year extension (2015–2022). Follow on project: Shule Bora

Funded by DFID

Implemented by Cambridge Education/ Mott MacDonald

GOAL: To support the Government of Tanzania to improve the quality of learning outcomes in primary schools, particularly for girls.

REACH:

9 regions

5,196 private schools

More than 3.2 million children

55,000 teachers

1. Instructional Practice: What classroom ingredients (e.g., teaching practices, classroom environment) led to increased learning at scale in Tanzania?[2]

The eight programs evaluated in the *Learning at Scale* study shared commonalities in how they approached instructional practice to maximize their success. Drawing on findings from program document reviews, discussions with program leadership, and school-level interviews and observations, we identified five components essential to such success. **TABLE 2** outlines the extent to which each of these components was found in EQUIP-T.

Components with a green dot were found to be a robust part of program design and implementation and should continue to be supported. Components with a yellow dot were found to be a key part of the program's design but may have been implemented or taken up by stakeholders with less fidelity; an examination of what changes in design, capacity, and resources are needed to support these components could be considered for future programming. Components with a red dot were not found to be a key part of either program design or implementation and may be considered as an area for increased focus in future teacher professional development activities.

TABLE 2. Essential components of instruction: EQUIP-T's findings profile

ESSENTIAL COMPONENT	EVIDENCE OF COMPONENT IN EQUIP-T
Instruction shows students—systematically and explicitly—the relationship between letters and sounds. *[>40% of class time on sounds/letters/word parts and >20% of teachers noting a positive impact on learning]*	EQUIP-T teachers dedicated nearly 60% of class time on phonics-based activities. 25% of EQUIP-T teachers believed that the program's increased focus on letters, sounds, and/or blending was the single most important factor in improving student reading outcomes.
Most class time is devoted to the teaching of reading, particularly skills such as print concepts, letter knowledge, decoding, comprehension, and blending. *[>40% of class time focused on reading instruction]*	Although EQUIP-T teachers spent just 34% of their lesson time teaching reading from text, they spent another 30% of class time on phonemic awareness, which contributes to students' letter knowledge and decoding and blending abilities.
Teachers make efficient use of instructional time for reading, with students engaging in accessible reading materials. *[students spend >40% of class time actively reading]*	Students spent 41% of their time reading and only 5% of their time listening.
Direct instruction methods, including the gradual-release model ("I do, we do, you do"), are used to encourage student participation. *[>20% of teachers noting a positive impact on learning]*	68% of EQUIP-T teachers noted that they were using a new methodology or instructional approach in the classroom as a result of the program, and 39% of the teachers felt that these new approaches had the single greatest impact on improved student performance.
Activities are engaging and require the active participation of students, creating opportunities for teachers monitor their learning and adjust their instruction accordingly. *[most students are engaged for >90% of class time; students practice skills on their own in >50% of lessons]*	Most or all students in EQUIP-T classrooms were found to be "on task" (i.e., engaged in the current activity) 87% of the time, and 53% of the teachers reported that students were more engaged because of the program. Additionally, 76% of observed lessons included an item or resource designed around increasing interaction between students and teachers. However, less than half (48%) of lessons included an opportunity for students to practice skills without the teacher.

LEGEND: Substantial evidence · Some evidence · Little evidence

> ***"Before EQUIP, they were mixing up languages in reading and writing—English and Swahili. Before training [they said] 'A, B, C' but EQUIP has given a better method of pronouncing letters."***
>
> MEETING FACILITATOR, EQUIP-T

WE ASKED TEACHERS, "WHAT HAD THE BIGGEST IMPACT ON STUDENT LEARNING?"

FIGURE 2. "What part of your instruction has had the biggest impact on student learning?"

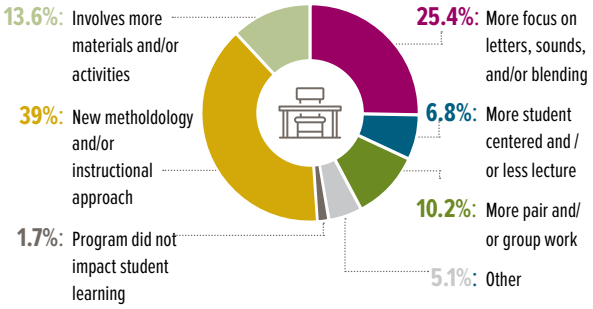


FIGURE 3. "Which one of these student materials do you believe is the most useful?"

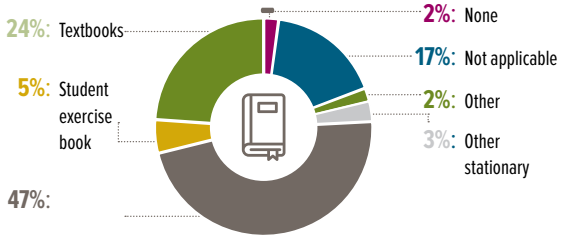
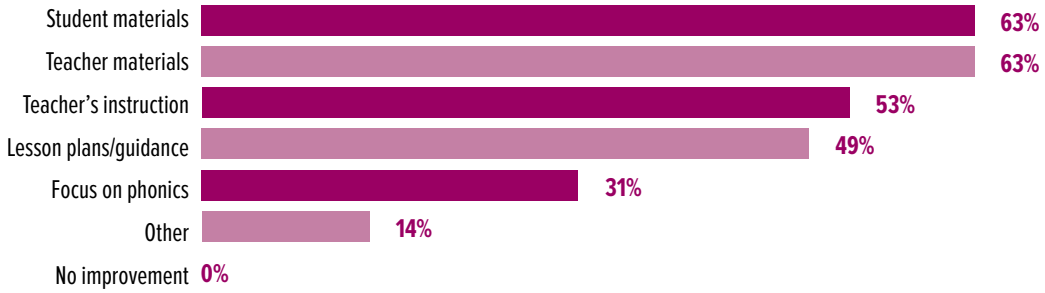


FIGURE 4. "Has EQUIP-T helped improve student learning? If yes, what factors had an impact on student learning? (Mark all that apply)"



DIMENSIONS OF EFFECTIVE INSTRUCTION: FINDINGS FROM CLASSROOM OBSERVATION

Drawing from a review of existing instructional best practices, the *Learning at Scale* study team developed a score to indicate the prevalence of six evidence-based dimensions of teaching: student centered, demonstration, research-based/simple view of literacy instruction, application, responsiveness, and preparedness/efficiency. **FIGURE 5** presents a brief description of each of these dimensions and the degree to which they were observed in EQUIP-T classrooms.

FIGURE 5. Observation findings from EQUIP-T classrooms: Prevalence of activities related to dimensions of effective instruction

DIMENSION OF EFFECTIVE INSTRUCTION	DEGREE TO WHICH THIS WAS OBSERVED IN EQUIP-T LESSONS (PREVALENCE SCORE, 0–100)
Student centered: Students take an active role in learning.	75
Demonstration: The teacher shows the students what she expects them to do.	33
Research-based/simple view: Instructional activities advance code and meaning skills.	33
Application: Students practice skills.	20
Responsiveness: The teacher adapts to student behaviors.	100
Preparedness/efficiency: Instructional time is maximized.	100

2. Instructional Support: What methods of training and support used in EQUIP-T led to teachers adopting effective classroom practices?[3]

The eight programs evaluated in the *Learning at Scale* study also shared *approaches to instructional support* commonalities in how they approached instructional support. Drawing on findings from program document reviews, discussions with program leadership, and school-level interviews and observations, we identified eight components essential to successful support to teachers. **TABLE 3** outlines the components and the extent to which each of these components was observed in EQUIP-T classrooms.

TABLE 3. Essential components of teacher support: EQUIP-T's findings profile

ESSENTIAL COMPONENT	EVIDENCE OF COMPONENT IN EQUIP-T
Teacher training offers teachers substantial opportunities to practice newly learned skills. *[>50% of teachers say trainings have more practice than previous programs]*	96% of teachers said that the EQUIP-T trainings included more small-group activities than previous trainings, and 62% said that they found small-group practice to be the single most useful training method.
Face-to-face training is used whenever possible. *[>40% of teachers say trainings were the most useful support]*	At the time of the data collection, all trainings were face-to-face.
Ongoing teacher support is positive and collaborative. *[>50% of teachers say coaches/mentors are friendlier or more supportive]*	When asked how interactions with coaches (including teachers and head teachers providing coaching) were different under EQUIP-T, only 7% of teachers said that coaches were more supportive and that they provided more suggestions on how to improve teaching, while 58% said that coaches were friendlier.
Structured teachers' guides are provided to increase teachers' ability to understand the specifics of the new program. *[>50% of teachers say teachers' guides are better organized and easier to follow than previous programs]*	72% of teachers said that EQUIP-T's teachers' guides were better organized and easier to follow than previous guides they had used; 68% also noted that the guides provided teaching aids that kept students more engaged. Of those teachers, 67% responded that the materials themselves were more appropriate and enjoyable than those used previously.
Coaches conduct frequent classroom observations and give regular feedback to teachers, using scaffolded and focused guidance from programs. *[>50% of teachers receive coaching observation "a few times a year" or more]*	Under the EQUIP-T design, coaching was typically conducted in school by other teachers or a head teacher. 37% of teachers reported receiving coaching a few times a year or more, and only 15% received visits once per month or more. While 83% of teachers stated that receiving guidance from coaches impacted their teaching, only 2% of respondents identified coaching as the single most important program aspect for improving student learning.
Instructional support actors (including head teachers, coaches, mentors, teacher meeting facilitators, and trainers) develop and provide supports that build teachers' confidence and maximize their decision-making.	EQUIP-T used school-based training to reach all teachers. Teachers spoke about the benefits of the school-based training, including the opportunity to collaborate with other teachers, gain course correction for skills they had not mastered, solve problems, learn new skills (e.g., inclusive teaching), and get motivation from the head teacher.

ESSENTIAL COMPONENT	EVIDENCE OF COMPONENT IN EQUIP-T
Ample student materials are provided alongside teacher instructional support. *[>90% of students have their own book]*	Only 15% of students in EQUIP-T schools had their own textbook (1:1 ratio) during observation. This is due partly to the fact that the majority of instructional materials used during observed lessons (75%) were written, and exercise books were available to students in 98% of classrooms. Interestingly—despite the lack of student textbooks—63% of teachers said that EQUIP-T student materials had an impact on student learning. During qualitative interviews, teacher-made materials were mentioned by nearly all teachers as being a critical part of the program. The key materials made were cards with letters, pictures to illustrate a word, and flipcharts. These materials allowed students to practice skills and connect words to real-world objects.
Teacher-to-teacher support (through communities of practice, peer mentoring, teacher support meetings, etc.) is used as a method to help teachers solve instructional problems themselves. *[>50% of teachers meet with peers to discuss instruction once a month or more, and 50% of teachers say they have useful discussions]*	97% of EQUIP-T teachers reported participating in teacher meetings a few times per year or more, with 58% participating more than once per month. 67% of teachers said that these meetings were useful because they provided a place for discussion with other teachers. Teacher meetings were a key focus of EQUIP-T: 97% of meeting facilitators said that they were trained by the program, and 94% said that these meetings were more helpful under EQUIP-T than in the past. Only 13% of teacher meeting facilitators felt that they were in charge of supporting too many teachers.

LEGEND: Substantial evidence Some evidence Little evidence

We asked teachers, coaches, and meeting facilitators, "What program supports were most useful?"

Almost two-thirds (61%) of teachers said that trainings were the most useful support they received from EQUIP-T, while 17% cited teacher and student materials as being the second most helpful.

TABLE 4. "Overall, what do you see as the most important differences between EQUIP-T training sessions and other training sessions?"

ANSWER	% TEACHERS
Training is better organized	55%
More time for discussion	47%
Trainers are better prepared or more knowledgeable	43%
Materials are more relevant or helpful	42%
More focus on specific reading skills	34%
More time to practice (individual, pair, group)	30%
Training sessions are more frequent	25%

ANSWER	% TEACHERS
Less lecture	23%
Workload was manageable	17%
Better allowances (transportation, per diem, etc.)	15%
Expectations are clear	15%
Other	9%
Nothing	4%
Program training sessions are worse	4%

TRAINING

We asked teachers what they believed the most important overall differences were between EQUIP-T training sessions and other teacher training sessions they had attended. Their responses (**TABLE 4**) point to a combination of design and fidelity-of-implementation factors. From a design standpoint, teachers most often cited EQUIP-T's focus on specific reading skills, ample time for practice and discussion, and relevant and helpful materials. Equally important to teachers, however, was the fact that EQUIP-T trainers were better organized and prepared.

TEACHER AND STUDENT MATERIALS

Generally, teachers reported that EQUIP-T materials—compared to other program materials—were easier to follow, better organized, and more appropriate and enjoyable for students. They also noted that the new teaching materials were effective in increasing student engagement. To a lesser extent, it was noted that the step-by-step instructions in EQUIP-T teacher materials were new for many teachers (**TABLE 5**).

TABLE 5. **"How do EQUIP-T teacher materials differ from what you were using before the program?"**

TEACHER MATERIALS		STUDENT MATERIALS	
Better organized; easier to follow	72%	Stories are more appropriate and enjoyable	67%
Teaching aids keep students more engaged	68%	More attractive (e.g., illustrations, font, layout)	57%
Aligned with textbooks or curriculum	46%	Content is clearly presented; easy to follow	55%
Step-by-step instructions	40%	Aligned with textbooks and curriculum	37%

TEACHER MEETINGS

When asked about which aspects of teacher meetings they felt were useful for teachers, 84% of meeting facilitators said "feedback and learning from other teachers," while another 61% said "teachers asking questions" and "time to practice." These findings underscore the importance of collaboration and interaction in teacher support.

3. System Support: What system supports did EQUIP-T draw on to deliver effective training and support to teachers and to promote effective classroom practices?[4]

The eight programs evaluated in the *Learning at Scale* study shared approaches to building system support for learning. Drawing on findings from program document reviews, discussions with program leadership, and interviews with system-level actors, we identified six components essential to such success. **TABLE 6** outlines the components and the extent to which each of these components was noted by key informants in Tanzania and incorporated into the EQUIP-T program.

TABLE 6. **Essential components of system support: EQUIP-T's findings profile**

ESSENTIAL COMPONENT	EVIDENCE OF COMPONENT IN EQUIP-T
Program invests in building the capacity of Ministry of Education staff (particularly at the subnational level).	EQUIP-T purposefully focused on regions, districts, and schools, particularly through teacher training and teacher communities of learning. This focus on local-level capacity building was extensive enough that some high-level education officials complained that they did not receive as many capacity-building opportunities as their subnational counterparts.

TABLE 6. (continued)

ESSENTIAL COMPONENT	EVIDENCE OF COMPONENT IN EQUIP-T
Program is aligned with existing government education plans to improve uptake and avoid parallel efforts.	As the government of Tanzania transitioned to the reading, writing, and arithmetic (3Rs) curriculum in 2014–2015, EQUIP-T was able to respond to the government's need to facilitate school-based trainings in a large number of schools.
Program works with subnational Ministry of Education staff to establish targeted instructional changes as clear priorities in the education system.	Interviewees from the Ministry of Education at both the national and subnational levels noted their involvement and capacity building in materials review, teacher professional development, and school-level data collection. However, due to some gaps between the centralized external-to-school trainings and school-based meetings, as well as delays stemming from local government authorities' planning for the trainings, the overall effectiveness of the program's work with the ministry was diminished.
Program supports government officials and program staff in consistently monitoring teaching practice and implementation progress in order to reinforce system and program priorities.	The integration of EQUIP-T activities into the government's quality assurance system meant that EQUIP-T-supported districts were more likely than non-EQUIP-T districts to focus on instructional quality issues. However, data collection efforts did not generate evidence of frequent monitoring visits to schools.
Program enlists Ministry of Education counterparts in the delivery and management of inputs needed to effect classroom change.	Ministry of Education officials acknowledged that their relationship with EQUIP-T was clearer than the relationship they had with other programs. The was due in part to EQUIP-T's provision of budgetary support to the government, which allowed government counterparts to play a large role in program planning. The ministry and the program held monthly and quarterly meetings to discuss and agree on EQUIP-T activities, which led to ministry counterparts perceiving the program as being willing to align its interventions with government priorities as opposed to other donor-funded interventions.
Program maps out a clear transfer of responsibilities for key programmatic activities to education system actors.	Evidence from interviews shows that EQUIP-T was intentional in the way that responsibility and ownership were transferred gradually to the government. This process ended with the government being able to take on some—but not all—of the program's components.

We asked system education stakeholders, "What was your experience with EQUIP-T in terms of communication, capacity building, and monitoring?"

PRIORITIZATION AND CLEAR COMMUNICATION BY GOVERNMENT

EQUIP-T faced two turning points during its implementation that increased the government's buy-in and take-up of the intervention. The first was Tanzania's transition to the reading, writing, and arithmetic (3Rs) curriculum in 2014–2015. One of the main challenges faced during the rollout of this new curriculum was the lack of appropriate teacher training and materials. Therefore, EQUIP-T's ability to provide training and materials to teachers tasked with implementing the 3Rs curriculum not only made EQUIP-T popular with teachers but also ensured that it was seen as a program that responded to demand. The second turning point was a decision made by the program's funder, DFID, to provide budget support directly to the Tanzanian government. This substantially improved subnational- and national-level government officials' degree of access to EQUIP-T, as well as their buy-in into the program. In turn, this made it considerably easier to implement EQUIP-T's instructional improvement activities.

A collaborative approach between the program and the government was critical to the program's success with the government's curriculum body approving of all materials officially. This layer of approval reinforced EQUIP-T's importance among teachers. The engagement provided by the direct budget support and integrated approval process greatly improved EQUIP-T's uptake with teachers. Senior officials who conducted training in several regions in Tanzania commented that because key leaders within the education system actively encouraged teachers to use EQUIP-T materials, the teachers were more receptive to their use. The program succeeded as a result of this national-level engagement and the subsequent communication of the program's importance to teachers and others in the education system.

CAPACITY BUILDING

> ***Now everything that EQUIP-T was doing is part of their normal activities … They have a normal quality assurance team within the school. It incorporates the lesson activities within the system."*** DIRECTOR OF SCHOOL SUPPORT, BAHI, TANZANIA

> ***Teachers' capacity building made an impact on success. Program strengthened the system to make more awareness on the continuous professional development of teachers. We have that in the [government of Tanzania] system, [but] mostly it wasn't done continuously."***
>
> HIGH-LEVEL OFFICIAL, TANZANIA

A district-level director of teacher professional development said that an essential change resulting from EQUIP-T was to the teacher training system. Teachers were initially reluctant to and confused about how to relate EQUIP-T methods to the common materials in Tanzania. However, EQUIP-T was gradually recognized and accepted as part of the broader education program, and academic officers and ward education officers helped teachers relate the typical Tanzania materials to the EQUIP-T materials.

MONITORING AND DATA USE

> ***"When I'm informed that there is a problem among some pupils, I go to that particular school. I discuss with teachers to know exactly what the problem is. We try and set the solution. One solution is to see that all classes have enough [teaching and learning materials] so that the class can be conducive and … attractive to the pupils. I have instructed all schools in their capitation [to] make sure they allocate 5,000 TSh to buy manila cards [colored paper on heavy stock] so that they can make good and attractive teaching aids."***
>
> DISTRICT EDUCATION OFFICER, DODOMA

In Tanzania, the districts incorporated quality assurance via an existing government system that was modified to incorporate the EQUIP-T model. A district director of school support explained how the system works, saying that when school quality assurance officers visit schools, they must conduct several areas of review. First, they look at student learning outcomes, including the 3Rs. Second, they look at how the teachers use the teaching and learning methods. Third, they observe the curriculum and curriculum modules. Fourth, they look at the leadership; water, sanitation, and hygiene facilities; and community activities. Having the core activities of EQUIP-T be a part of the government's quality assurance review allowed the intervention to be more meaningfully incorporated into the daily activities of the quality assurance officers.

This brief was authored by ***Jonathan Pamel*** *and* ***Rachel Jordan****.*

1 The eight programs examined are Education Quality Improvement Program in Tanzania (Cambridge Education/Mott MacDonald), Ghana Partnership for Education: Learning (FHI 360), Senegal Lecture Pour Tous (Chemonics International), Nigerian Education Initiative Plus (Creative Associates), Pakistan Reading Program (International Rescue Committee), Read India (Pratham), India Scaling-up Early Reading Intervention (Room to Read), and the Kenya Tusome Early Grade Reading Activity (RTI International).
2 For more findings on instructional practice, see the brief *Instructional Practices for Effective Large-Scale Reading Interventions*
3 For more findings on instructional support, see the brief *Instructional Support for Effective Large-Scale Reading Interventions*
4 For more findings on systems support, see the brief *System Supports for Effective Large-Scale Reading Interventions*