

# EQUIP-Tanzania Impact Evaluation

## **Midline Issue Note 1: The Changing Context for Teacher In-Service Training—Reflections on EQUIP-Tanzania’s Experience**



*FINAL VERSION*

## 1. Introduction

*'All teachers require continuing support once they reach the classroom to enable them to reflect on teaching practices, to foster motivation and to help them adapt to change, such as using a new curriculum. Teachers who have received some in-service training are generally found to teach better than those who have not, although it depends on the purpose and quality of the training received.'*<sup>1</sup>

This message from the UN Educational, Scientific and Cultural Organisation (UNESCO) 2014 Education for All Global Monitoring Report on teaching and learning highlights how important in-service training (INSET) of teachers can be in strengthening teaching practices in the classroom, but makes clear that the link is not automatic. Both the design of INSET programmes and the wider context in which they are being implemented can make a difference in terms of how effective they are in improving teaching quality and in turn pupil learning.

The Government of Tanzania and its development partners have coordinated efforts in recent years to deliver INSET programmes across the country, with the aim of strengthening early grade teaching and learning. At midline (ML), the impact evaluation (IE) of the Education Quality Improvement Programme in Tanzania (EQUIP-T) finds that EQUIP-T's INSET for early grade teachers has contributed to gains in Kiswahili literacy skills for the poorest performing pupils in the programme districts. This issues note presents evidence on the EQUIP-T INSET and reflects on wider challenges in the education system that affect it, and most likely other INSET programmes operating in similar contexts. The messages that emerge from this analysis are relevant for all education stakeholders involved in improving early grade teaching and learning programmes in Tanzania.

The IE combines baseline (BL) data from 2014, prior to EQUIP-T implementation, with ML data from 2016.<sup>2</sup> It is a mixed-methods evaluation which draws on evidence from a quantitative survey of programme schools located in 17 of the most disadvantaged districts in Tanzania (hereafter termed 'EQUIP-T districts'), and qualitative research in a sub-sample of districts (see Box 3 and Figure 6 for more information). The midline IE research covers the four main components of EQUIP-T: professional capacity and performance of teachers; school leadership and management; district education planning and management; and community participation and demand for accountability. It provides estimates of the impact of EQUIP-T *overall* on pupil learning, but does not measure the impact of specific programme activities (such as teacher INSET). To understand the most likely channels for programme influence, qualitative perceptions of change are combined with quantitative descriptive evidence from EQUIP-T districts.

**In the past two years thousands of teachers across Tanzania have participated in different INSET programmes to improve early grade teaching. EQUIP-T's INSET model emphasises school-based delivery**

Teaching and learning processes are at the heart of a good quality education that enables pupils to achieve learning goals and fulfil their potential. Apart from effective and appropriate pedagogical approaches, having a relevant and inclusive curriculum is another major contributing factor for good quality education.<sup>3</sup>

Tanzania is making impressive strides both in curriculum reform and in seeking to improve teaching practices. Starting with the early grades in 2015, the Government introduced a new curriculum that focuses on reading, writing, and arithmetic competencies (3Rs), rather than a larger set of subjects for pupils in Standards 1 and 2.<sup>4</sup>

As the national curriculum reform was underway in late 2014, EQUIP-T started implementing large-scale INSET for early grade teachers in the programme regions as part of an emerging Teacher Professional Development System. In 2015, the EQUIP-T INSET delivered 3Rs curriculum training and a series of Kiswahili literacy modules to early grade teachers. The core of the delivery model is a continuous cycle of school-based training linked to classroom practice led by INSET coordinators—a senior teacher appointed in each school (more details on the EQUIP-T INSET are in Box 1).

Over the same period, there were other programmes in Tanzania delivering INSET to primary school teachers designed to strengthen teaching practices and curriculum knowledge. This included the national Literacy and

Numeracy Support Programme (LANES) which provided 3Rs curriculum orientation to a large number of early grade teachers in 2015 using a one-off residential model. At the end of this note, Table 1 gives an overview of these INSET programmes.

### Box 1 Description of the EQUIP-T teacher INSET in 2015 and early 2016

**Objective:** To improve the performance of teachers, with a focus in 2015 on strengthening early grade teaching of Kiswahili literacy (reading and writing) and developing effective and gender-responsive pedagogy.

**Delivery model:** A continuous professional development cycle that starts with **district-level training** targeted at INSET coordinators (each school appoints a senior teacher for this role), and sometimes includes head teachers (HTs) and Ward Education Coordinators (WECs) (and less frequently, teachers), delivered by a district INSET team of teacher training college tutors. Following this, INSET coordinators facilitate **bi-monthly school-based INSET sessions** using group self-study and peer learning methods linked to classroom practice. Schools decide on the participants in school-based training but all teachers of Standards 1 and 2 are included at a minimum. Each study session takes about three hours and covers one module. Following this, teachers attend **ward cluster reflection meetings** each month to reflect on their classroom practice, and to get peer support and mentoring. There were some variations on this model in 2015 as the programme was learning what works best.

#### Four specific sets of INSET were provided for early grade teachers in 2015 and early 2016:

- *Early grade Kiswahili literacy modules 1–4:* These cover general pedagogy, an introduction to gender-responsive pedagogy, and classroom management techniques. One day of ward-level training was delivered to teachers of Standards 1–3, followed by school-based training.
- *Early grade Kiswahili literacy modules 5–8:* These technical modules cover parts of the Kiswahili syllabus (reading and writing). They were delivered to early grade teachers as part of school-based training, followed by one day of district-level training for teachers of Standards 1 and 2, as a refresher.
- *Early grade Kiswahili literacy modules 9–13:* These continue the series of technical modules covering parts of the Kiswahili syllabus (reading and writing). Three days of district-level training were delivered to teachers of Standards 1 and 2, followed by school-based training.
- *3Rs curriculum training:* This covers the new Standards 1 and 2 national curriculum, including how to prepare schemes of work and lesson plans. Three days of district-level training was delivered to teachers of Standards 1 and 2. In the rest of the country, 3Rs curriculum orientation has been delivered by the LANES programme using a different model of one-off residential training.

**Staged roll-out:** As at the end of 2015, the early grade Kiswahili modules were in the process of being rolled out, and modules 1–4 and the 3Rs curriculum training had reached teachers from all programme schools according to the programme's annual monitoring report. Modules 5–8 were rolled out by January 2016, and modules 9–13 had been implemented in some programme districts by the time of the IE ML survey in April/May 2016.

Sources: EQUIP-T MA (2015), EQUIP-T INSET early grade Kiswahili school-based training modules, interviews with EQUIP-T staff.

It is widely acknowledged that changing teaching practices, particularly towards more learner-centred and participative pedagogy, is not easy.<sup>5 6</sup> However, in the EQUIP-T districts this is especially challenging because of three systemic constraints: high teacher turnover, challenging classroom environments and differences between the language of instruction and the languages spoken by pupils. Any teacher INSET programme, or indeed any other activities to improve teaching practices in similar environments, need to take these systemic constraints into account to avoid them undermining the potential benefits of programmes.

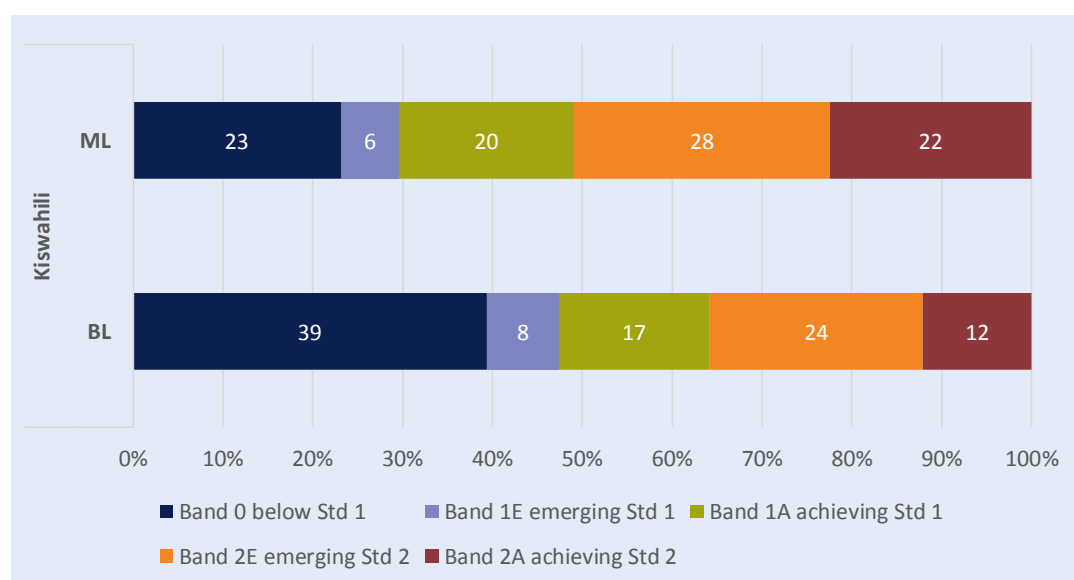
The remainder of this note is structured as follows. Section 2 presents IE evidence on changes in and EQUIP-T impact on pupil Kiswahili literacy levels in the EQUIP-T districts since the BL in 2014. Section 3 examines changes in teaching practices and perceived reasons for these changes. In Section 4, changes in instructional time and changes in and EQUIP-T impact on teacher attendance are examined. The three systemic constraints that can reduce the potential benefits of teacher INSET are discussed in Section 5. An overview of the implementation of teacher INSET in the EQUIP-T districts is in Section 6. Finally, Section 7 summarises the main messages of the note and concludes.

## 2. Impact of EQUIP-T on pupils' literacy skills in Kiswahili

Kiswahili literacy skills for Standard 3 pupils have strengthened significantly in the EQUIP-T districts since the BL. Comparing the BL and ML bars in Figure 1, the proportion of pupils in the lowest performance band (achieving at less than Standard 1 level) has fallen by 16 percentage points. There is also a large and significant change at the top of the distribution, where the share of pupils who are achieving at Standard 2 level (top band) almost doubled since BL.

Upward national trends in early grade learning achievement, particularly in Kiswahili, partly explain the gains seen in the EQUIP-T districts.<sup>7</sup> This national trend seems likely to be related to the introduction of the 3Rs curriculum across the country. However, EQUIP-T had an impact, over and above national trends, on the learning outcomes of the lowest performing pupils. As a result of EQUIP-T activities, pupils are now 8 percentage points less likely to fall in the lowest Kiswahili performance band. Without EQUIP-T, the share of pupils achieving at below Standard 1 level would have been more than 30% rather than the 23% observed at ML. No EQUIP-T impact was detected on the proportion of pupils achieving at Standard 2 level (top performance band).

**Figure 1 Change in the proportion of Standard 3 pupils achieving at each curriculum level in Kiswahili (literacy) in EQUIP-T districts (%)**



Source: IE baseline and midline surveys. Note: Weighted estimates.

The positive impact on pupil Kiswahili literacy is from EQUIP-T as a whole, that is, all programme activities implemented between the IE BL and ML. However, there is evidence that one of the main contributing factors behind this impact is the EQUIP-T INSET for early grade teachers, and this is discussed in subsequent sections where relevant.

## 3. Changes in teaching practices observed in EQUIP-T districts<sup>8</sup>

### Teachers' interactions with pupils in the classroom have become more inclusive

Observations of Standard 2 Kiswahili and maths lessons revealed that there has been a significant improvement in the gender balance of teachers' interactions with pupils since BL. On average, 65% of teachers' interactions with pupils such as asking or answering questions or giving feedback, were gender-balanced: that is, teachers engaged proportionally with boys and girls. This is a significant increase of 11 percentage points compared to the BL, and is a sign that the EQUIP-T INSET, which covered gender-responsive pedagogy in its early modules, is contributing to behaviour change. The change in gender-sensitivity observed in lessons is also consistent with teachers' perceptions of their own behaviour changes over the period.

Respondents perceived EQUIP-T to have improved gender balance by helping teachers to involve girls during lessons. For instance, teachers would previously allow any pupil who raised their hand to answer questions in class, but boys were more likely than girls to volunteer a response. Now teachers ask questions to a balance of boys and girls, which has also helped girls become more confident to participate in class. At the same time, however, the case study school observations unequivocally showed that girls were more likely to spend time on chores, often for their teachers, during lesson time.

Spatial inclusion of pupils seated in different parts of the classroom has also improved significantly since BL, with teachers engaging with at least one pupil from each of six seating areas in the classroom in 79% of the observed lessons. This is a notable increase of 21 percentage points since BL. By contrast, there has been no change in the fact that pupils seated at the back of the classroom receive relatively less attention from teachers, making this an area for further improvement.

Although more desks have become available since BL, many pupils still have no desk and sit on the floor. In the observed lessons, 77% of pupils had a useable desk, which is a significant improvement from 72% at BL. Still, this means more than 20% of the pupils did not have a desk to work at, with adverse effects on their learning experience. Moreover, the average pupil absenteeism rate for Standards 1–3 at ML is 25%, so if all pupils had been present, the observed desk shortage would be even more acute. Respondents in the case study schools explained that when classrooms are over-crowded, teachers cannot move around the room easily, and tend to give less attention to pupils who are sitting on the floor.

### **There were perceptions of positive changes in general teaching practices but limited evidence from lesson observations to support this**

In the case study schools, respondents consistently perceived the quality of teaching to have improved, especially because of the new curriculum that focuses on the 3Rs. They attributed improved teaching ability to the EQUIP-T INSET, which has helped improve their understanding of the new curriculum and lesson planning. Teachers themselves also stated that EQUIP-T INSET had provided them with better pedagogical knowledge and greater ability to use more varied and participatory methods to explain the subject matter to their pupils. EQUIP-T was also credited with showing teachers how to make and use teaching aids, which was considered a sign of good teaching. During the lesson observations, more than half of teachers (53%) used teaching aids of some type compared to 44% at BL.<sup>9</sup>

Only a small group of teachers in the observed lessons demonstrated a range of effective teaching practices in the classroom, and this has not changed significantly since BL. Although it would not be expected that all 14 effective teaching practices measured by the IE would be used during a single lesson, demonstration of a large number of them would be expected as these are core practices such as clearly stating learning objectives and encouraging pupils to ask questions. At ML, only 9.5% of teachers (9% at BL) demonstrated (more than occasionally) seven or more of the 14 measured effective teaching practices, and 60% used three or more (58% at BL).

The mixed evidence on changes in effective teaching practices may reflect an improvement in the capacity of teachers to teach well, but these improvements may be constrained by the system-wide factors (discussed below), including very large class sizes.

### **Use of corporal punishment remains an issue despite the EQUIP-T INSET teaching alternative methods of classroom management**

At ML, the use of corporal punishment by teachers remains a source of conflict between teachers and local communities, and pupils say this is what they most dislike about school. Despite teachers and head teachers (HTs) saying that EQUIP-T INSET has taught them alternative methods of classroom management, and consequently, instances of corporal punishment have decreased, informal observations and interviews with parents, children, and some school officials confirmed that corporal punishment remains a core component of controlling classrooms.



## Teachers are using more instructional aids during lessons but their use of pupil reading books is very limited

The majority of schools reported receiving teaching and learning materials from EQUIP-T. During discussions, teachers focused on manila paper and marker pens (part of the supplied teaching toolkit) as being particularly useful in helping to simplify their teaching. As discussed above, one part of EQUIP-T INSET that teachers reported as particularly useful was the making of their own teaching aids such as flash cards. Lesson observations confirmed that teachers are using aids more frequently. Teachers rarely mentioned other supplied materials such as supplementary readers for pupils and big books.<sup>10</sup>

Although the majority of schools received supplementary readers for pupils and big books in 2015 these were rarely used in lessons. Some 77% of schools reported receiving supplementary readers, but in 88% of observed Kiswahili lessons these were not available (either openly or in storage) in the classroom. It is unsurprising, therefore, that pupils did not use supplementary readers in the vast majority (93%) of observed Kiswahili lessons.

Similarly, while 89% of schools reported receiving big books, these were used in only 7% of observed Kiswahili lessons. These findings are consistent with those from other sub-Saharan African countries, for example, that although textbooks are available at schools they are not used as frequently as intended in classrooms.<sup>11</sup>

Without these and other teaching and learning materials (notably textbooks) being readily available in classrooms, teachers are unlikely to develop their skills in using these types of materials effectively, or to use them in their teaching. For example, teachers refer to not having received textbooks that have been updated for the new curriculum, which hinders effective teaching of the new curriculum.

## 4. Changes in instructional time in EQUIP-T districts

### Official and actual instructional time have increased since BL

The *official* instructional time for Standards 1 and 2 Kiswahili and maths has increased markedly since BL due to the new 3Rs curriculum. From BL to ML, it has risen from 3 to 8 hours per week for Kiswahili and from 3.5 hours to 4 hours per week for maths. The estimated *actual* instructional time for pupils in Standards 1 and 2 is also much higher at ML than BL. Overall, estimated actual instructional hours for Kiswahili have risen on average by 3.4 hours and for maths by nearly an hour since BL, improving the conditions for teaching and learning. This is due to both the structural change in the timetable, and also to an increase in teachers' classroom attendance which is partly attributable to EQUIP-T.

### Actual instructional time is far lower than the official guidelines

In the EQUIP-T districts, average actual instructional time is much lower than the official guidelines. Compared with the official number of hours of instructional time in both Kiswahili and maths, early grade pupils in the EQUIP-T districts receive on average 40% fewer instructional hours (Figure 2). This is a substantial loss in terms of learning opportunities for pupils. Some of this loss can be attributed to schools sometimes being closed when they should be open and scheduling of fewer instructional hours than the official guidelines, but teachers not attending their lessons although scheduled to teach is a main contributing factor. Compounding this, pupil absenteeism remains high at 25%, although it has declined substantially from 34% since BL, further reducing actual instructional hours.

### EQUIP-T had an impact on increasing teachers' classroom attendance

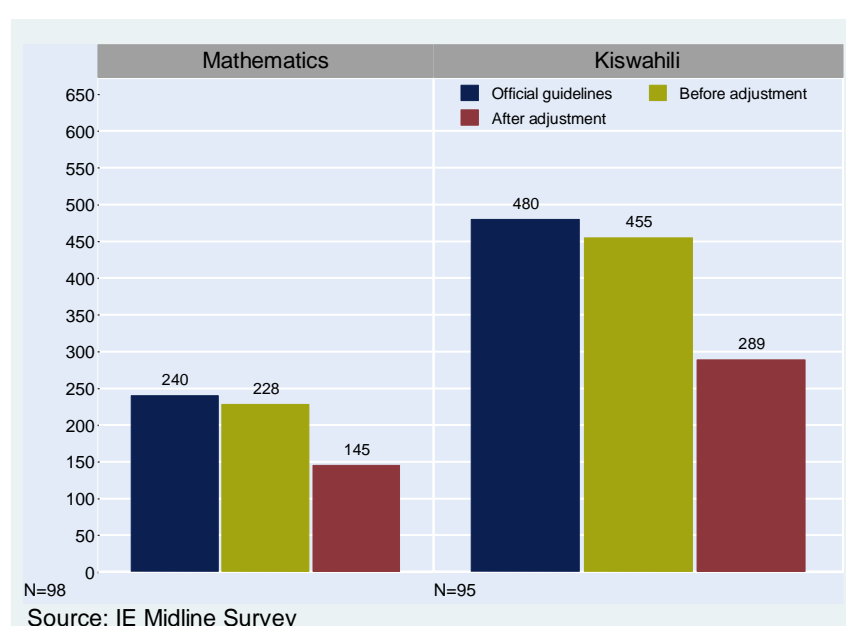
EQUIP-T has helped to improve teachers' classroom attendance, and has thus boosted instructional hours for pupils. Teachers in EQUIP-T schools are 12 percentage points less likely to be absent from their scheduled classes because of EQUIP-T. In the case study schools, while EQUIP-T teacher INSET is not mentioned as a direct reason for improved teacher classroom attendance, it is perceived to have increased the motivation of teachers of the lower

Standards and this seems likely to be linked to improved classroom attendance. Whether this effect is likely to be sustained is unclear at this stage of the IE.

### Teachers' school attendance has not changed since BL and although teachers' classroom attendance has increased it remains low

Teacher attendance at school was at 86% in the EQUIP-T districts, and was largely unchanged from BL (88%). By contrast, classroom attendance for Standards 1-2 teachers has improved significantly by 21 percentage points since BL to reach 63%. As explained above, this change is partly attributable to EQUIP-T, and while it marks a dramatic improvement, it still implies a substantial loss of instructional time, and also a reduction in time during which teachers use and further develop teaching practices learnt during INSET. Classroom attendance for teachers of all Standards is far lower than for early grade teachers, reaching only 39% by ML.

**Figure 2 Estimated loss of instructional time for pupils of Standards 1 and 2 at ML (2016)**



Note: (1) Weighted estimates. (2) 'Official guidelines' are the number of instructional hours set out in the new curriculum for each subject.<sup>12</sup> 'Before adjustment' reflects the number of hours lessons were actually timetabled in EQUIP-T districts. 'After adjustment' reflects the number of instructional hours after rates of teacher classroom attendance are applied.<sup>13</sup>

### There was a mix of official and non-official reasons for teachers' school and classroom absenteeism

Not receiving salaries in full and on time, and long distances to school are often cited as reasons for teacher absenteeism in developing countries.<sup>14</sup> In the EQUIP-T districts, neither of these seem to be a serious problem for most teachers.<sup>15</sup> The main reasons for school absenteeism self-reported by teachers were: illness (41%); attending training (19%); official education work (17%); collecting salary (16%); family responsibilities (15%) and other private work (9%). Less than 1% of teachers reported reasons related to salary level, housing, or other motivational aspects.

Teacher absence from school was perceived to have decreased due to increased monitoring. The perception among a range of school and community stakeholders was that visits from Ward Education Coordinators (WECs) and school inspectors had helped, and that training for HTs under another component of EQUIP-T had improved the ability of HTs to monitor and motivate teachers. Another reason given was *hapa kazi tu* (interpreted as 'just work'), the new Government's slogan which encourages people to work hard at their job. This notion of a national change in people's work ethic was stressed by all respondents as a factor in improving teacher attendance. But these perceptions are not consistent with the quantitative evidence on the unchanged rate of school absenteeism for teachers (see above).

Teachers themselves reported a large workload (30%) as the primary reason for classroom absenteeism. This is consistent with findings from focus groups with teachers, in which they regularly voiced concerns about their heavy workload and noted that they spent a significant amount of class time marking pupil assignments instead of teaching. Observations in schools found regular instances of teachers not teaching their classes as scheduled, they would instead be marking exercise books or carrying out other school-related responsibilities. Class sizes in the early grades are particularly large, and have grown markedly since BL (see next section), which presumably has increased the volume of teachers' marking. Teachers mentioned that inspectors monitored their performance partly based on whether pupils' exercise books had been marked, creating the view that marking is a priority. Lesson plans are also checked by inspectors and WECs, adding to the emphasis on getting these ready. In several case study schools, teachers were observed assigning pupils work and then spending the entire period marking exercises at their desk.

Other main reasons reported by teachers for being absent from classrooms included: illness (23%), meeting with other teachers (17%), and meeting with the HT (12%). HTs report similar reasons for teachers' absence from classrooms, with large workload (39%) being the most frequent response. This suggests that both teachers and HTs regard having a large amount of lesson preparation or marking as an acceptable reason for classroom absence.

Whether EQUIP-T is unintentionally contributing to this workload effect is not clear from the ML data, but this may merit further research at the IE endline.

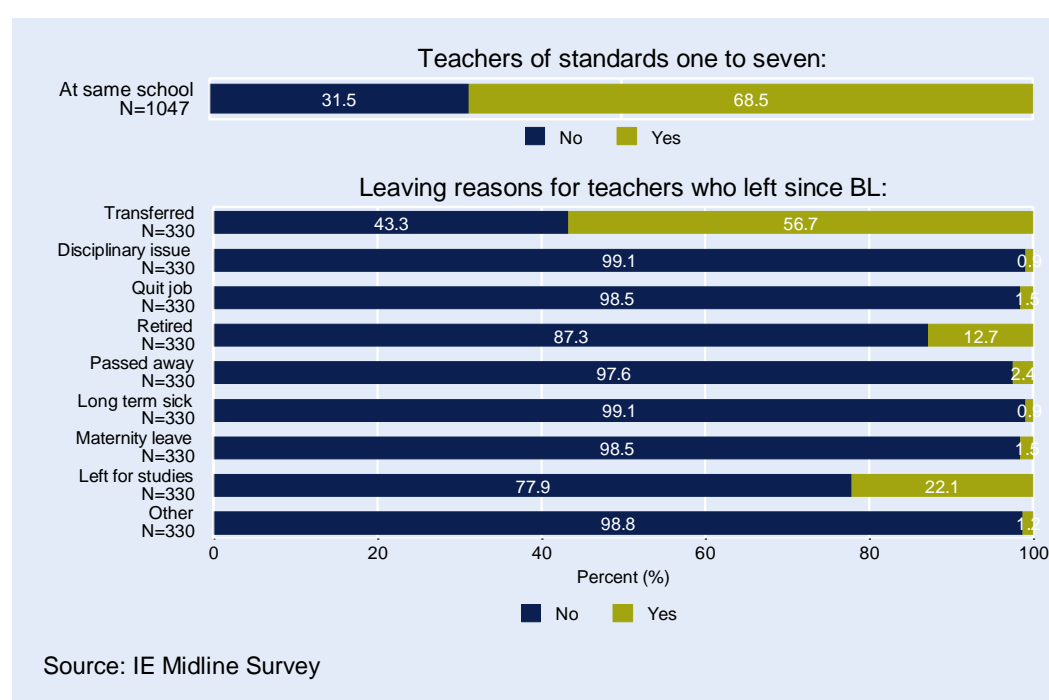
## 5. Systemic constraints that can undermine the potential benefits of the EQUIP-T INSET

### 5.1 High levels of teacher turnover

**Teacher turnover is high, weakening school-based INSET processes which are central to teachers' continuous professional development**

Teacher turnover in schools in the EQUIP-T districts is high, reducing the potential benefits of received INSET. Nearly one-third of all teachers (32%) who were at the school at BL were no longer there at ML (Figure 3).

**Figure 3 Teacher turnover between BL (2014) and ML (2016)**



Note: Weighted estimates.



The most common reasons for teachers leaving their BL school were transfer to another school (57%), further studies (22%), and retirement (13%). During key informant interviews and focus groups, teachers, HTs, community members and parents recognised the limitation that high turnover places on how effective the EQUIP-T training can be. Moreover, teacher turnover has led some schools to request that the EQUIP-T INSET be provided to all teachers, instead of only to teachers of the lower Standards, to ensure that the benefits from INSET are retained at the school even if some teachers leave.

Looking at the sub-group of teachers of Standards 1 and 2 who joined their schools since BL, the vast majority (87%) were transferred from a school in the same district or region. If they were teaching early grades in their previous school, they are likely to have participated in EQUIP-T INSET, and in principle would be able to apply their training in their new school. However, having such a high level of turnover between schools on a regular basis, even within the same district or region, is disruptive to effective delivery of the INSET. This is particularly true for the school-based element, which aims to establish a sustainable peer learning and support group for teachers within each school to apply and reflect on new classroom practices. Having high levels of entry and exit to this group risks undermining the trust and respect that is built over time.

A related issue is the extremely high HT turnover in the EQUIP-T districts—only 46% of HTs who were at the school at BL were still there at ML. This exceptionally high turnover is starkly illustrated in the case study schools, where in seven out of nine schools HTs had been in their post for less than one year at ML. This high turnover has implications for the effective implementation of the school-based teacher INSET as this is overseen by HTs.

### **Teachers seek transfers to schools with better conditions and in urban areas**

One reason for the high transfer rate of teachers is their desire to move to what they perceive to be schools with better conditions. Many of the schools covered by EQUIP-T are located in some of the most economically disadvantaged and rural areas in the country, and teachers in rural schools consistently voice their desire to be transferred to urban areas, where they expect to be more respected, better compensated and better positioned to pursue other income-generating activities. Each of the three District Education Officers (DEOs) interviewed as part of the IE ML research voiced frustration that they experience more teachers requesting transfers out of the district than they receive back in, and that this placement is managed by central Government (President's Office Regional and Local Government).

Many school and community stakeholders, while perceiving teachers to be doing their work, were concerned about teachers' low motivation, believing this to be related to the availability and quality of teacher housing. Consistent with this perception, there is a shortage of housing for teachers on school premises in the EQUIP-T districts. About 13% of schools did not have a single teacher's house. The cost of renting when teacher housing is not available was reported as a leading cause for teachers to seek transfers.

### **Teachers who are close to retirement or leave for further studies have limited opportunity to use skills gained during INSET for the benefit of their pupils**

At ML, some 12% of teachers of Standards 1 and 2 will reach the retirement age of 60 years within the next two years. While not all of this group will necessarily retire, there is a clear risk that the INSET received by these teachers will only be used for the benefit of pupils for a short period of time. Teachers in case study schools feel that teachers from all Standards should be included in training, because Standards 1 and 2 teachers are older and will soon retire or pass away, with minimal knowledge transfers.<sup>16</sup> Some teachers from upper standards already participate in EQUIP-T INSET (see Section 6) as schools have a certain amount of discretion on including additional teachers beyond those from Standards 1 and 2.

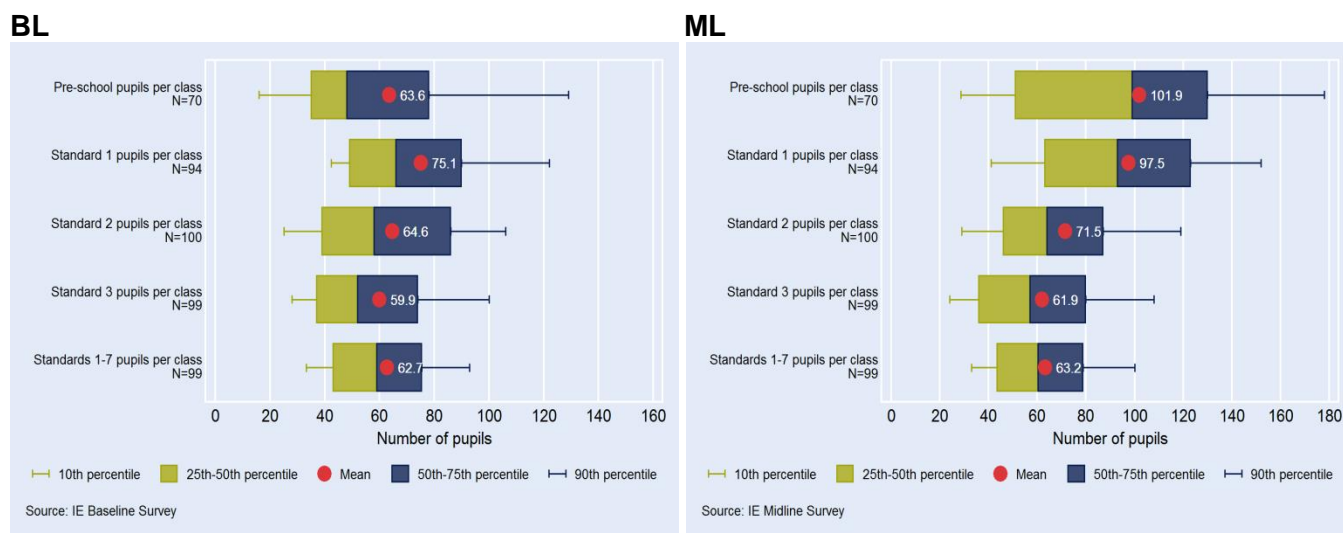
Teachers leaving for further studies is another major reason for teacher turnover. It is less likely that pupils will benefit from INSET when their teachers go on to further studies, particularly if they do not return to teaching.

## **5.2 Overcrowded classrooms**

## In many schools, class sizes were very large, making it extremely difficult for teachers to use effective teaching practices, including those learnt during INSET

Class size affects which teaching practices are feasible, with large classes providing fewer opportunities to use interactive methods and requiring whole-class teaching methods. The average class size for pupils in Standard 1 is 98 at ML; half of Standard 1 classes are larger than 90 pupils; and 10% of classes have 150 or more pupils (Figure 4, right-hand panel). Under such conditions, it is very difficult (or even impossible) to teach effectively, and to engage all pupils actively in lessons.<sup>17</sup>

**Figure 4 Class sizes by Standard, BL (2014) and ML (2016)**



Note: Weighted estimates.

Class sizes get smaller in the higher Standards but the average class size for pupils in Standard 2 is still high at 72, and 10% of classes have more than 120 pupils. Comparing BL and ML class sizes (Figure 4), there is a clear upward trend for the lower Standards, and notably so for pre-school classes. These trends are driven by the growth in pre-school and Standard 1 enrolment, consistent with recent policy changes to promote access to primary education (see Box 2).

## The rapid growth in preschool and primary enrolment combined with classroom shortages, leads to more double shifting of classes with potentially adverse consequences for instructional time

The acute shortage of classrooms is a major constraint in trying to reduce class sizes, and was already an issue at BL. On average across all standards, there were 74 pupils for every classroom (compared with 63 pupils for every class). This is markedly higher than the recommended national benchmark of 45 pupils per classroom.<sup>18</sup> Schools cope with this shortage in two main ways: having two shifts of classes using the same classroom at different times, and putting multiple classes in the same classroom at the same time.

At BL, 48% of the schools had a second shift of pupils (i.e. some classes who come in the second part of the day), and by ML this had increased significantly to 67% of schools. Double shifting classes tends to squeeze available instructional hours, and this may partly explain why schools are scheduling fewer hours of instruction for pupils in Standards 1 and 2 than the official guidelines (Figure 2).

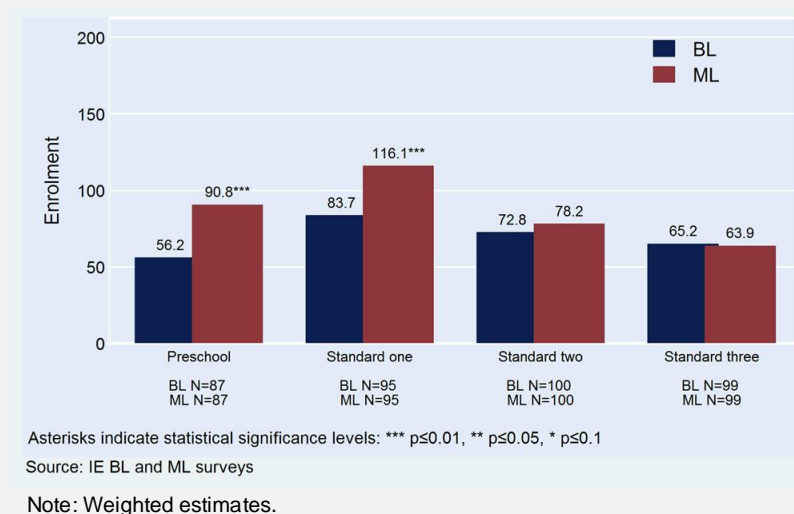
Some schools have resorted to teaching multiple classes in the same classroom at the same time. For example, in a case study school, Standards 2 and 5 shared a classroom, facing different walls, and the teachers took turns to instruct their pupils. In another case study school, pre-school and Standard 1 classes were taught in the same classroom. This is perceived by schools to be adversely affecting the quality of instructional time.

### Box 2 Recent policy changes intended to increase enrolment

In December 2015, the Government announced a new policy of fee-free education. MoEST released a circular that stated that parents and guardians would not have to pay fees or any other compulsory contribution for the education of their children from Standards 1 to Form 4 (Government Circular No. 5, 2015). Compulsory basic education, including pre-school, is part of the most recent Education and Training Policy, released in February 2015.

There are early reports that the fee abolition has had an immediate effect on demand for primary education, with particular pressure on Standard 1 enrolment. This is supported by the enrolment trends in the EQUIP-T districts (Figure 5). Average Standard 1 enrolment per school grew significantly, by close to 40%, from a starting point of 84 pupils at BL to 116 pupils at ML. Another contributing factor is likely to be the change in the entry age to primary school from 7 to 6 years under the new basic education structure. This allowed for a one-off double intake of children into Standard 1. During the same period average pre-school enrolment per school nearly doubled, from 56 pupils at BL to 91 pupils at ML.

**Figure 5 Trends in average enrolment by Standard BL (2014) to ML (2016)**



### 5.3 Differences in language of instruction and languages spoken at home

The language of communication is crucial for pupil learning, and children taught in a language they do not understand have a major learning disadvantage compared to their peers who speak the language of instruction.<sup>19</sup> The use of different languages by teachers inside and outside the classroom is of particular interest in the EQUIP-T districts because more than three-quarters of pupils do not speak Kiswahili at home, and this group of pupils has fallen substantially behind their peers in acquiring foundational skills. For instance, pupils from non-Kiswahili-speaking homes are significantly more likely to be in the bottom performance band (below Standard 1 skills) both for Kiswahili and maths, and the learning gaps are large. Moreover, at ML the group with learning difficulties most commonly identified by teachers (43%) were pupils who do not speak Kiswahili at home.

At ML, all teachers reported speaking Kiswahili, the official language of instruction, when teaching, consistent with pupils' reporting. Education managers also stress that teachers should follow policy and only speak Kiswahili in lessons. In addition, 92% of teachers reported that they speak Kiswahili (rather than other local languages) with their pupils outside the classroom. Despite the very large group of Standard 3 pupils who do not speak Kiswahili at home in the EQUIP-T districts, the vast majority of teachers do not switch language when teaching to help accommodate these pupils. Among teachers of Standards 1-3, only 26% reported that they switch between Kiswahili and another local language while teaching, compared to 16% of Standard 3 pupils reporting that their teacher switches language during lessons.<sup>20</sup> The fact that only 21% of Standard 3 pupils reported that their teacher is able to speak the same language as them, highlights the systemic challenge of supporting teachers to help these pupils.

These findings suggest that many pupils are likely to be experiencing communication difficulties at school, both inside and outside the classroom, with adverse implications for their learning. EQUIP-T is partly seeking to address this constraint through its 12-week school readiness programme that aims to provide children with a basic Kiswahili vocabulary before they enter Standard 1. It is too early for this IE study to assess whether the SRP is working in this respect, but it is clear that many pupils from non-Kiswahili speaking backgrounds already in the early grades have fallen behind and need targeted support to catch-up.

## 6. Implementation of INSET for early grade teachers in EQUIP-T districts

### **EQUIP-T INSET coverage was very high among early grade teachers and there were spill-overs in coverage to other teachers**

EQUIP-T aims to provide all its INSET modules to teachers of Standards 1 and 2 in the EQUIP-T districts, and some to teachers of Standard 3 (see Box 1). At ML, the vast majority (95%) of teachers of Standards 1 and 2 reported that they had attended EQUIP-T INSET in 2014 or 2015. This is a massive change since BL, when only 12% of early grade teachers reported attending any type of INSET in the previous two years.

There were sizeable spill-overs in coverage, with large proportions of teachers of Standards 4–7 attending EQUIP-T INSET away from school (29%) as well as in-school (74%), despite not being targeted by the programme. This partly reflects the attendance of INSET coordinators from higher standards at INSET away from school, and the fact that school-based INSET was run for all Standards in some schools because the general pedagogical modules were viewed as broadly applicable.

### **Most teachers attended both modes of EQUIP-T INSET but a relatively large group attended some but not all of the school-based sessions**

Of those teachers of Standards 1 and 2 who participated in EQUIP-T INSET, 89% attended both modes of EQUIP-T INSET (away from school and school-based). For the relatively small group of teachers that did not attend both modes of INSET, this will leave gaps in coverage of the full programme as the materials and sessions were designed to complement each other in supporting teachers to develop their skills.

The school-based training posed a particular challenge for teachers (see reasons below), and a relatively large group of teachers of Standards 1 and 2 (34%) who attended school-based EQUIP-T INSET attended some but not all of the sessions held at their school.

### **Almost all teachers found the EQUIP-T INSET useful but respondents in case study schools felt it did not fully consider the reality of the teaching and learning environment**

Nearly all teachers of Standards 1 and 2 (95%) found the EQUIP-T INSET, including the 3Rs training, useful. In focus groups, teachers said that learning new teaching methods and gaining the knowledge how to prepare and use teaching aids were the main takeaways from the EQUIP-T INSET. This is positive as these elements were key parts of the training programme. Teachers felt they now understood the new curriculum better, and were more confident about preparing and teaching their classes.

At the same time, respondents in the case study schools felt that EQUIP-T INSET did not fully consider the reality of the environment in which teaching and learning takes place. Though teachers felt they had picked up teaching skills, the shortage of classrooms and other resources, including desks, pose significant challenges in regard to them being able to use skills acquired during the INSET effectively.

## Specific difficulties with the EQUIP-T INSET according to teachers and HTs

Teachers also reported some difficulties with the training. The most common ones were insufficient payment (17%); limited training time (15%) and too much content (12%). This is corroborated by teachers and HTs in the case study schools.

Teachers explained that they do not consider attending training to be a regular part of their job and expect to be paid for their time and effort. Allowances for training are considered a major benefit of the EQUIP-T training but only teachers who attend training away from the school are compensated. This is consistent with HTs saying they find it difficult to organise school-based training because of motivational challenges, and that the lack of an allowance for attending school-based training demotivates teachers and is unfair. This suggests that it might be difficult to sustain the school-based element of the INSET model without some adaptation of its current design or a change in teachers' expectations of responsibilities and rewards related to continuing professional development. Currently there is no national framework for school-based INSET, or for continuing professional development more generally, so teachers' expectations of their normal duties or of career progression or other professional benefits associated with undertaking training, are not conditioned by national guidelines.

Teachers explained that the lack of food during the school-based INSET means that they stay hungry while devoting extra hours after school to the training, leading many of them to feel demotivated. HTs also said that the lack of food makes it difficult to ask teachers to remain in school after the school day ends to attend the training.

Teachers also had reservations about the pace of the training, as not all teachers are able to grasp the taught material within a short period of time. This creates a challenge for the school-based INSET—if the appointed INSET coordinators tasked with training other teachers at school level have been unable to take on board all the material during away-from-school training, it will make it difficult for them to train other teachers effectively.

## 7. Conclusion

INSET is a key aspect of teachers' professional development, and should help bring about improvements in teaching practices, sustain motivation and help teachers adapt to changes. INSET has been implemented across different regions in Tanzania by a number of stakeholders in recent years. Within EQUIP-T, the teacher INSET model is a major input to the programme objective to improve learning outcomes for children in EQUIP-T districts. This issues note summarised evidence from the ML of the EQUIP-T IE on the impact of EQUIP-T on pupils' Kiswahili skills, changes in teaching practices and instructional hours since BL, system-wide limitations to intended impact, and the experience of INSET delivery so far.

EQUIP-T overall has led to improvements in Kiswahili skills for the lowest performing pupils, and there is evidence that the EQUIP-T INSET programme has contributed to this. The two main changes to support this finding are: that teachers' interactions with pupils during lessons have become significantly more inclusive, consistent with the pedagogical approach underlying EQUIP-T INSET; and that teachers' classroom attendance has improved because of EQUIP-T, most likely because of higher motivation of early grade teachers (the main recipients of INSET). Teachers reported a range of positive effects of EQUIP-T INSET on their teaching practices, but lesson observations showed little change in their use of effective teaching practices overall.

If teachers are struggling to demonstrate the expected improvements, there are three major factors that may be limiting the potential for and sustainability of benefits from EQUIP-T INSET:

- Teacher turnover was high, with almost one-third of the teachers from BL no longer in the surveyed schools. Transfers were the main reason for this. With such high rates of change, effective delivery of the INSET and application of the learning is disrupted;
- In many schools, class sizes were very large, typically close to 100 pupils in Standard 1, making it extremely difficult for teachers to use practices learned during INSET effectively or at all; and



- Most pupils do not speak the language of instruction (Kiswahili) at home, and have fallen behind pupils who do in acquiring foundational skills. The vast majority of teachers do not speak the home language of their pupils, and so finding effective teaching strategies to support these disadvantaged pupils is a major challenge.

These findings have implications for many stakeholders in Tanzania, where large investments have been made in INSET, and where the systemic limitations are likely to be widespread. The design of national INSET should take account of these challenges. Efforts by the Government and its development partners to address the causes of high teacher turnover, as well as large and growing class sizes, could make INSET more effective.

## Further information

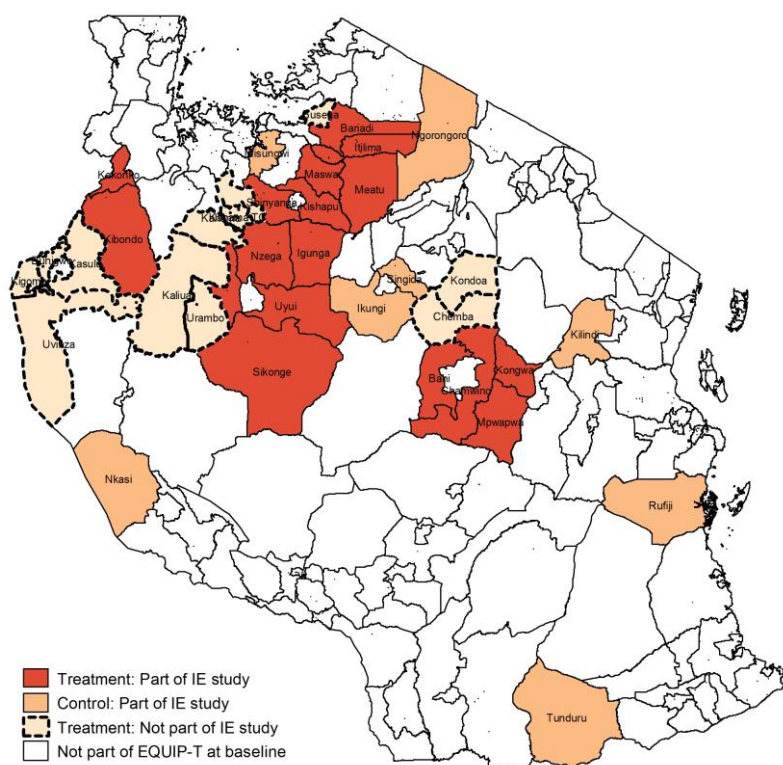
### Box 3 Overview of the EQUIP-T IE

The IE uses a mixed-methods approach, with qualitative and quantitative methods integrated to ensure robustness and depth in the research findings. For the EQUIP-T districts the ML results are based on:<sup>21</sup>

- **A quantitative survey of 200 government primary schools in 17 EQUIP-T districts** (see map below) covering:
  - 1,483 Standard 3 pupil tests in Kiswahili and maths;
  - 405 interviews with teachers of Standards 1–3 Kiswahili and mathematics;
  - 243 Teacher Development Needs Assessments (TDNAs) in Kiswahili administered to teachers of Standards 1–3, and 470 TDNAs in maths administered to teachers of Standards 1–7;
  - 100 HT interviews and school record checks; and
  - 231 observations of Standard 2 lessons in Kiswahili and maths.
- **Qualitative fieldwork in nine research sites that overlap with a subset of the quantitative survey schools**, consisting of key informant interviews and focus group discussions with HTs; teachers of Standards 1–3; Standard 3 pupils and their fathers and mothers; school committee members; community leaders; and region, district and ward education officials.

The quantitative survey used a quasi-experimental design with multi-stage sampling, while the qualitative research used a small purposive sample. The BL round of the mixed-methods research was conducted in 2014 and the ML round took place in 2016. The endline will take place in 2018. This timetable will enable robust estimation of EQUIP-T impact on pupil learning, and allow collection of rich evidence on pathways of programme influence.

### Figure 6 Programme districts included in the IE



**Table 1 Overview of recent teacher INSET programmes in Tanzania**

<b>INSET features</b>	<b>EQUIP-T</b>	<b>LANES</b>	<b>Big Results Now in Education<sup>22</sup></b>	<b>School-based INSET</b>	<b>Tanzania Century Education</b>	<b>21st Basic</b>
Programme period	2014–18	2014/15–2016/17	2014–2018	Ongoing	2011–n/a	
Funder/s <sup>1</sup>	DFID	GPE	GoT, WB, SIDA, DFID	UNICEF	USAID	
Geographic coverage <sup>23</sup>	7 regions	14 regions	Targeted districts within LANES regions	6 districts in 3 regions	1 region	
Teacher beneficiaries in 2015	~15,670 teachers (mainly Stds 1–3) <sup>24</sup>	~18,656 teachers of Stds 1 and 2	~4,175 teachers of Stds 1 and 2 (subset of LANES)	~1,000 teachers in 2014; n/a for 2015	n/a	
Main Content	Early grade Kiswahili literacy; 3Rs curriculum	3Rs curriculum	3Rs curriculum	Maths, English, science teaching	Early grade Kiswahili reading	
Model in 2015	District/war d level (up to 8 days); and School level (3 hours bi-monthly)	Central-level ~10 days	Central-level ~10 days	School-based	n/a	

Source: EQUIP-T MA (2015)<sup>25</sup>, Ministry of Education and Vocational Training (2015)<sup>26</sup>, World Bank (2015)<sup>27</sup>, World Bank (2014)<sup>28</sup>; UNICEF (date unknown)<sup>29</sup>; <http://crea-tz21.com/overview>. Notes: n/a means not available. (1) Funder abbreviations: DFID (UK Department for International Development); GPE (Global Partnership for Education); GoT (Government of Tanzania); WB (World Bank); SIDA (Swedish International Development Cooperation Agency); UNICEF (UN Children's Fund); USAID (US Agency for International Development).

## About the authors

This issues paper was written by Gunilla Pettersson Gelandar, Georgina Rawle, Shrochis Karki and Nicola Ruddle. It was reviewed by Professor Herme Mosha, Paud Murphy and Dr Caine Rolleston. This paper is based on analytical work carried out by a team from Oxford Policy Management (OPM) including the authors and the following researchers: Johanna Wallin, Michele Binci, Paul Jasper, Jana Harb, Madhumitha Hebbar, Jean Davis and Alice Aldinucci. Readers are encouraged to quote and reproduce material from this paper in their own publications. In return, OPM requests due acknowledgement and asks that quotes be referenced. OPM cannot be held responsible for errors in this note, or for any consequences arising from the use of information contained in this publication. Any views and opinions expressed do not necessarily reflect those of DFID. For more information contact [georgina.rawle@opml.co.uk](mailto:georgina.rawle@opml.co.uk).

The findings presented in this note are based on fieldwork conducted by the OPM Dar es Salaam office, using state-of-the-art computer assisted personal interviewing (CAPI) technology for the quantitative fieldwork. For more information contact [info.tanzaniaoffice@opml.co.uk](mailto:info.tanzaniaoffice@opml.co.uk).

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## About the project

EQUIP-T is a Government of Tanzania programme, funded by DFID, which seeks to improve the quality of primary education, especially for girls, in seven regions of Tanzania. It focuses on strengthening the professional capacity and performance of teachers, school leadership and management, systems that support regional and district management of education, community participation in education, and learning and dissemination of results. For more information see: <http://www.equip-t.org>.

The independent IE of EQUIP-T, being conducted by OPM, is a four-year study funded by DFID. It is designed to: i) generate evidence on the impact of EQUIP-T on primary pupil learning outcomes; ii) examine perceptions of the effectiveness of different EQUIP-T components; iii) provide evidence regarding the fiscal affordability of scaling up EQUIP-T post-2018; and iv) communicate evidence generated by the IE to policy-makers and key education stakeholders.

## Notes

<sup>1</sup> UNESCO (2014) 'Education For All Global monitoring Report 2013/14: Teaching and Learning: Achieving Quality for All', UNESCO Paris, p.242.

<sup>2</sup> The quantitative survey fieldwork took place in April/May 2014 and April/May 2016, and the qualitative fieldwork took place in June–August 2014 and April/May 2016.

<sup>3</sup> UNESCO (2015) 'Education For All Global monitoring Report 2015: Education For All 2000–2015: Achievements and Challenges: Summary', UNESCO Paris, p.42.

<sup>4</sup> 24 out of 30 periods per week are allocated to 3Rs, leaving six periods for supportive skills (health and environmental education, games and sports, fine and performing arts, and religious studies).

<sup>5</sup> UNESCO (2015). The EQUIP-T INSET does not aim to shift teaching practices wholly towards learner-centred pedagogy, but does contain some elements of this approach to encourage greater active participation in lessons by all pupils.

<sup>6</sup> Ibid.

<sup>7</sup> A nationally representative study, which uses similar instruments to the IE tests, found significant learning gains in Kiswahili skills across the country over the same period. See, RTI (2016) Assistance to Basic Education All Children Reading (ABE ACR): Preliminary Findings Report, Tanzania National Early Grade Reading Assessment (EGRA). North Carolina. USAID.

<sup>8</sup> The evidence on teachers' classroom practices is based on Kiswahili and maths lesson observations during which enumerators carried out a mapping of teacher–pupil interactions by gender and by classroom area, and recorded the demonstration by teachers of a set of selected teaching practices.

<sup>9</sup> Teaching aids were defined for the lesson observations as excluding the blackboard or textbooks but including maps, posters, tables, charts, read-life items etc.

<sup>10</sup> Supplementary readers are reading books for children which have been organised into reading levels, so that children work up the levels as their skills improve. Big books are large sized books which teachers use to read to the class or pupils can share in groups.

<sup>11</sup> UNESCO (2015).

<sup>12</sup> MoEVT (2016) 'Curriculum for Basic Education Standards I and II.' URT, MoEVT, p5.

<sup>13</sup> The number of hours actually timetabled for Kiswahili and maths for Standards 1 and 2 in EQUIP-T districts was collected from school timetables and averaged across the school sample. This estimate was then adjusted downwards by the overall rate of classroom absenteeism of teachers of Standards 1 and 2.

<sup>14</sup> See for example: UNESCO (2014). 'Education For All Global Monitoring Report 2013/14: Teaching and Learning: Achieving Quality for All.' UNESCO Paris; Mulkeen, A. (2010) 'Teachers in Anglophone Africa. Issues in Teacher Supply, Training and Management.' Washington, DC: The World Bank; and Bennell, P. and Akyeampong, K. (2007) 'Teacher Motivation in Sub-Saharan Africa and South Asia.' Researching the Issues, 71. London, UK Department for International Development.

<sup>15</sup> Nearly all teachers (96%) reported receiving their last three salaries in full, and 89% received their last three salaries on time.<sup>15</sup> The average time to school for teachers was 15 minutes but this varied across schools. About 60% of teachers lived within 10 minutes or less from school, while nearly 10% lived within 30 minutes or more from school.

<sup>16</sup> Teachers of the first two Standards are 40 years old and have 17 years of experience on average, while teachers responsible for upper Standards are typically younger and less experienced (34 years old with 10 years' experience on average)

<sup>17</sup> UNESCO (2015) 'Education For All Global monitoring Report 2015: Education For All 2000–2015: Achievements and Challenges, UNESCO Paris, p.208.

<sup>18</sup> MoEVT (2009) Basic standards for pre- and primary education in Tanzania. Dar es Salaam: MoEVT.

<sup>19</sup> UNESCO (2015).

<sup>20</sup> During the lesson observations at ML only 4% of teachers switched between Kiswahili and a vernacular language. Observer effects may be contributing to the discrepancy between teachers' self-reported and observed practices, or it could be that teachers use language switching infrequently.

<sup>21</sup> 100 control schools were also surveyed as part of the quantitative survey.

<sup>22</sup> Big Results Now in Education also includes the Student Teacher Enrichment Programme (STEP), which delivers INSET to upper-primary and lower secondary teachers.

<sup>23</sup> Geographical coverage refers to the delivery of INSET only. The regions covered by the different INSET programmes are: (i) EQUIP-T: Dodoma, Kigoma, Shinyanga, Simiyu, Tabora, Lindi and Mara; (ii) LANES: Kagera, Mwanza, Geita, Arusha, Kilimanjaro, Tanga, Manyara, Dar es Salaam, Morogoro, Singida, Pwani, Rukwa, Katavi and Ruvuma; (iii) school-based INSET: Mbeya, Njombe and Iringa; (iv) Tz21: Mtwara (and Zanzibar).

<sup>24</sup> According to EQUIP-T's 2015 annual monitoring report, 16,587 teachers and Ward Education Coordinators were trained in 2015 on the first four EQUIP-T early-grade Kiswahili INSET modules. There are approximately 917 WECs, leaving 15,670 teachers. The teachers mainly teach Standards 1–3, but also include some HTs and INSET coordinators who may be drawn from higher Standards.

<sup>25</sup> EQUIP-T MA (2015) 'EQUIP-Tanzania Annual Report 2015.' URT, PMO-RALG, MoEVT and DFID.

<sup>26</sup> MoEVT (2015) 'GPE LANES Implementation Report for Fiscal Year 2014/15.' URT and GPE.

<sup>27</sup> World Bank (2015) 'Tanzania Big Results Now in Education: Implementation Status and Results Report', October 2015. World Bank ISR20813.

<sup>28</sup> World Bank (2014) 'Program Appraisal Document Tanzania Big Results Now in Education'. World Bank.

<sup>29</sup> UNICEF (no date) 'UNICEF Tanzania Annual Report 2014'.



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