EQUIP-Tanzania
Impact Evaluation

Briefing Note 1: Teachers’ knowledge, behaviour and support in some of the most disadvantaged districts in Tanzania
Introduction

"An education system is only as good as its teachers. Unlocking their potential is essential to enhancing the quality of learning. Evidence shows that education quality improves when teachers are supported – it deteriorates if they are not... All children must have teachers who are trained, motivated and enjoy teaching, who can identify and support weak learners, and who are backed by well-managed education systems".1

This briefing note presents evidence on early grade teachers' professional capacity and support in 17 of the most disadvantaged districts in Tanzania. The results come from a rigorous mixed-methods baseline study for an impact evaluation (IE) of the Education Quality Improvement Programme in Tanzania (EQUIP-T), conducted by Oxford Policy Management (OPM) in 2014. The 17 districts in the study are among the poorest in Tanzania, and they were purposely selected for the programme because they are known to have poor educational outcomes, including relatively low pass rates in the primary school leaving examination.2 The districts have similar contextual characteristics to the remaining rural districts in the programme’s five initial regions: Dodoma, Kigoma, Shinyanga, Simiyu and Tabora.3

The key findings on teachers from the IE study, which are further elaborated in this briefing note, reveal some important strengths including the fact that most teachers are trained and have good early grade subject knowledge in Kiswahili and mathematics. The research also identifies four major constraints to good teaching in these disadvantaged districts, and likely in many similar rural districts. The challenges associated with these constraints are: improving curriculum and subject knowledge; improving pedagogical skills; getting teachers into the classroom; and providing monitoring and support to teachers. Further Information at the end of this note provides an overview of the IE and a description of the EQUIP-T programme. The full results are available in a comprehensive baseline report.4

The quality of learning is a problem at primary level in Tanzania

A number of recent studies, including the baseline survey for the government’s Big Results Now-3Rs programme, have shown that children in Tanzania are not achieving the standards expected by the curriculum.5 The results of pupil testing carried out for the IE baseline study show that Standard 3 pupils’ learning levels in the 17 disadvantaged districts are very low and that the large majority of Standard 3 pupils have fallen considerably behind curriculum expectations in Kiswahili and mathematics (see Table 1).

<table>
<thead>
<tr>
<th>Table 1: Overview of pupil learning and background in 17 disadvantaged districts in Tanzania</th>
</tr>
</thead>
<tbody>
<tr>
<td>• For Kiswahili 12% and for mathematics only 6% of Standard 3 pupils are achieving the expected Standard 2 level skills in core areas of the Kiswahili and mathematics curricula.</td>
</tr>
<tr>
<td>• For Kiswahili 38% and for mathematics 7% of pupils have not yet acquired even emerging Standard 1 level skills.</td>
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<tr>
<td>• The proportion of boys achieving at Standard 2 level in mathematics is twice as high (8%) as the proportion of girls (4%). By contrast, in Kiswahili boys and girls perform similarly.</td>
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<tr>
<td>• In both Kiswahili and mathematics pupils who speak Kiswahili at home perform significantly better than pupils who speak another language at home.</td>
</tr>
<tr>
<td>• Most Standard 3 pupils (57%) are the correct age for their grade (9–10 years), but 37% are over-age (11 years or older).</td>
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<tr>
<td>• One-third (33%) of pupils belong to a household predicted to fall below the national poverty line.</td>
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<tr>
<td>• The great majority of pupils (77%) speak a local language other than Kiswahili at home.</td>
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<tr>
<td>• 52% of pupils are girls and 48% are boys.</td>
</tr>
</tbody>
</table>

Source: IE Baseline Survey.
Note: Weighted estimates.
Table 2 provides some background on the teachers who teach standards 1 to 3 in the 17 disadvantaged districts.

Table 2: Overview of teachers in 17 disadvantaged districts in Tanzania

<table>
<thead>
<tr>
<th>The average standards 1 to 3 teacher</th>
<th>Of standards 1 to 3 teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Is 40 years old.</td>
<td>• 55% are women.</td>
</tr>
<tr>
<td>• Has worked as a teacher for 16 years and for eight years in his/her current school. That said, there are some teachers with very long tenure and experience, so these averages mask low levels of experience and tenure among many teachers.</td>
<td>• The vast majority (76%) have completed Form 4 and 10% have completed Form 6 or higher. However, there is a group of teachers (14%) that has only completed primary schooling – the same level of schooling they are teaching.</td>
</tr>
<tr>
<td>Source: IE Baseline Survey.</td>
<td>• Nearly all teachers (99.5%) hold a professional education qualification. Most common by far is to have a Certificate in Education.</td>
</tr>
<tr>
<td>Note: Weighted estimates.</td>
<td>• Only 8% received any in-service training over the last two years (i.e. 2012 and 2013).</td>
</tr>
</tbody>
</table>

The rest of this briefing note is structured around four aspects of teachers’ knowledge, behaviour and support. Each section discusses findings from the IE baseline study and then summarises key strengths and constraints.

Subject and curriculum knowledge in disadvantaged districts

Subject knowledge at the lower levels of the Kiswahili and mathematics curricula is relatively strong, but subject knowledge varies greatly among teachers

For the first time in Tanzania, the IE study carried out a teacher development needs assessment (TDNA). The TDNA contains questions linked to the primary school curriculum and takes the form of a mock pupil test that teachers mark, indirectly providing information on their subject knowledge. The results can be used to help design teacher support programmes (see Figure 1 for results).\(^6\)

- Teachers scored 58% on average in Kiswahili, with a wide spread of performance between the bottom and top performing teachers of almost 35 percentage points.
- Teachers performed considerably better (66%) on Kiswahili questions drawn from the standards 1 to 4 curriculum compared to those from standards 5 to 7 (50%).
- Teachers scored 59% on average in the mathematics TDNA, although this masks a wide range of teacher performance with the lowest performing teachers scoring 28% or less and the top performing teachers scoring 86% or more. For the top performers, this is all the more impressive, because the content of the mathematics TDNA was heavily skewed toward questions from the upper standards of the primary curriculum.
- The poorest performing mathematics teachers have particularly weak subject knowledge of the middle- and upper-level primary curriculum.
- Teachers who teach mathematics to upper primary school pupils demonstrated much stronger subject knowledge than their colleagues who teach lower primary levels.
While these results demonstrate that a group of teachers would benefit from increased subject knowledge, Tanzanian teachers are meeting curriculum knowledge expectations better than their counterparts in some states in Nigeria and as well as their counterparts in Kenya.  

During the follow-up case studies in nine schools, teachers complained about the introduction of new subjects without appropriate training, but reported that their biggest knowledge gap was related to the curriculum. They were largely unaware of the content of the syllabus, did not know what subject matter should be taught to which standard, and were unclear how various textbooks relate to the curriculum they are required to teach. Although many teachers may have sufficient subject knowledge, without curriculum knowledge they will be unable to adequately prepare pupils for important public examinations.

**Summary of findings: Teachers’ subject and curriculum knowledge**  
**Strengths:** A pool of teachers with strong subject knowledge in mathematics, and most teachers with good subject knowledge of the lower-level primary Kiswahili and mathematics curricula.  
**Constraints:** Inadequate curriculum knowledge for many teachers and poor subject knowledge of the middle- and upper-level primary curriculum, especially in mathematics, for some teachers.

**Pedagogy in disadvantaged districts**  
**A small group of teachers use a range of effective teaching behaviours in the classroom**

The IE study identified a set of 14 pedagogical strategies considered to contribute to effective classroom practice. These teaching behaviours were assessed through observations of teachers teaching Standard 2 lessons in Kiswahili and mathematics.
During the introductory stage of the observed lessons just over one-fifth of teachers (23%) clearly stated learning objectives and checked prior knowledge (22%), and fewer than one in ten teachers stated what new skills or knowledge pupils should have acquired by the end of the lesson.

As Figure 2 shows, in the middle stage of the observed lessons the vast majority of teachers (85%) were found to relate well to pupils, including using encouragement and praise to give positive feedback. While this is important, other key behaviours were far less evident. The large majority of teachers did not at any point during the lessons encourage individual pupils to ask questions and explain ideas (79%), ask open-ended questions (66%), or ask pupils to carry out activities in pairs or in groups (77%). Moreover, about half of teachers (51%) never commented on or probed pupil answers.

At the concluding stage of the observed lessons only about one-fifth of teachers checked if pupils had acquired the new skills or knowledge set out in the lesson introduction (22%) and used a plenary to summarise what materials or topics had been covered and directed pupils to the next stage of the topic (21%).

Taking all effective teaching behaviours into account, a small group of teachers (9%) demonstrated varied and participatory pedagogy, by using seven or more behaviours, while more than two-fifths of teachers (42%) appeared to use a more limited set of teaching strategies (i.e. fewer than three).

Providing pupils with information on how well they are performing and how to improve through assessments of learning is a valuable teaching behaviour. This can take several forms, including homework, class tests and verbal examinations among others. More than two-thirds (69%) of teachers were able to show that they had carried out some type of assessment in the previous five school days, and slightly more than one-quarter (27%) of teachers were able to show that they had carried out at least two different types of assessment in the previous five school days.
In focus group discussions, most teachers were unable to identify pedagogical skills as a knowledge required of a teacher and tended to focus on subject and curriculum knowledge. Moreover, few teachers displayed elementary knowledge of pedagogy and discussed child-centred teaching and participatory methods. This may be partly explained by a Tanzanian study that finds the initial teacher education curriculum too general when it comes to pedagogy (and it is the same for lower and upper primary), and that Teacher Training College (TTC) tutors frequently have very limited experience with lower primary and therefore are not familiar with the pedagogical strategies suitable for large, crowded classrooms and/or with pupils who are multilingual and with different abilities.12

Typically, teachers in the in-depth case studies said that they favoured corporal punishment, which appears at odds with the observed positive encouragement given to pupils during lessons. Its frequency and severity is of great concern to communities around the nine case study schools, and pupils identified being beaten as something they feared most in school.

**More than half of teachers show gender balance but interact more with children toward the front of the classroom than those in other parts**

Two important aspects of inclusive teaching were observed: whether teachers interact equally with boys and girls and whether teachers interact with pupils across the whole classroom space or focus on only certain areas of the classroom (see Figure 3).13

![Figure 3: Gender and spatial balance in teacher interaction with pupils](image)

**Source:** IE Baseline Survey.

**Note:** Weighted estimates.

- Just over half (54%) of the observed teacher interactions with pupils were gender balanced, while 30% of teachers interacted more with boys than girls and 16% of teachers interacted more with girls than with boys. While this finding does not suggest that gender balance is a major problem there is nonetheless room for improvement.

- Teacher interactions were most common with pupils seated at the front of the classroom (42% of all interactions) compared to the middle (30%) and back (28%) areas. Again, this indicates an area where improvements could be made.
In the nine case study schools and the associated communities, many head teachers, teachers and parents perceived that girls perform better than boys. They based their judgements on the positive behaviours displayed by girls, including not being involved in negative peer groups and sitting at the front of the classroom. However, when asked directly why many girls perform badly in the national examinations the blame was laid on communities and on girls themselves, citing girls’ inability to deal with anxiety and stress in examination situations, ‘love affairs with boys’, the greater domestic load carried by girls, and family influences such as expectations of early marriage. Many school-level stakeholders’ dialogue also reflected beliefs that girls, and children with illiterate parents, inherently lack the capacity to learn.

**Summary of findings: Pedagogy**

**Strengths:** The majority of teachers relate well to pupils by giving praise and encouragement in class, interact with boys and girls on a similarly frequent basis, and use some type of pupil assessment.

**Constraints:** Only a small group of teachers demonstrate a range of effective teaching behaviours in the classroom, including basic participatory approaches, and most teachers interact more with pupils seated at the front of the classroom. There continue to be negative perceptions of the inherent ability to learn of some groups of children, as well as the use of corporal punishment which many children find frightening.

**Teacher absenteeism and instructional hours in disadvantaged districts**

**Teacher absenteeism from school and classrooms is a major problem and has adverse consequences for instructional time**

Large losses of instructional time due to teacher absenteeism and teachers arriving late have a substantial negative effect on pupil learning outcomes. The IE survey confirms that this is a major problem in these 17 disadvantaged districts (see Figure 4).

**Figure 4: Absence and punctuality of teachers**

<table>
<thead>
<tr>
<th>Teacher was absent from school</th>
<th>All teachers in roster</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 1005</td>
<td>12.1%</td>
</tr>
<tr>
<td></td>
<td>87.9%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teacher arrived late at school</th>
<th>All teachers present</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 873</td>
<td>63.2%</td>
</tr>
<tr>
<td></td>
<td>36.8%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teacher absent from class</th>
<th>Teachers present and scheduled to teach</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 708</td>
<td>66.8%</td>
</tr>
<tr>
<td></td>
<td>33.2%</td>
</tr>
</tbody>
</table>

**Note:** Weighted estimates.

**Source:** IE Baseline Survey.
More than one in 10 (12%) teachers were absent from school on the day of the survey. Other sources for Tanzania report even higher teacher absence rates. Of those teachers who were present on the day of the survey, almost two-thirds (63%) arrived late. Most detrimentally, classroom absence is extremely high. Among teachers present at school and timetabled to teach, 67% were absent from the classroom.

Another survey, the 2010 Service Delivery Indicator Survey, using slightly different computational methods, found that classroom absenteeism in rural schools was 50% (68% for urban schools). The government sets minimum requirements for the amount of instructional time that pupils should experience because it is a core element of school quality. The IE survey found that the majority of schools are open for almost the required number of teaching days, and also that schools are typically timetabling more minutes per week for Kiswahili and mathematics for lower primary pupils than the minimum. Despite this, the actual amount of instructional time received by pupils ultimately depends on whether teachers are in the classroom.

If a simple adjustment is made to account for teacher classroom absenteeism, pupils in standards 1 and 2 only receive 77 minutes of mathematics instruction per week, compared to the mean 219 minutes timetabled, and 78 minutes of Kiswahili instruction per week compared to the mean 207 minutes timetabled (see Figure 5).

This huge loss of instructional time is further compounded by high levels of pupil absence from school (33% were absent on the day of the school survey).

Figure 5: Estimated loss of instructional time in mathematics and Kiswahili in standards 1 and 2

Teachers themselves and communities around the nine case study schools most often attributed teacher absenteeism and lateness to a lack of teacher housing near the school. Low salaries and late payments were cited as the second most common reason for low teacher motivation and morale, and teachers across all the case study schools engaged in other income-generating activities to supplement their salaries.

Regional and district education officials thought that the low levels of societal respect for the teaching profession contributed to teacher absenteeism. When combined with the low requirements to join the profession, their perception is of a large number of teachers in the workforce who are either unlikely to respond to efforts to increase teacher motivation and morale or who are only likely to respond to tangible and extrinsic incentive mechanisms.
Summary of findings: Teacher absenteeism and instructional time

**Strengths:** The majority of schools are open for the required number of days, and most are meeting or exceeding official timetabling requirements for lower primary level Kiswahili and mathematics.

**Constraints:** High rates of teacher classroom absenteeism are having a hugely detrimental effect on “time on task” for pupils. This is further compounded by teacher absenteeism from school, teachers being late for school and pupil absenteeism.

Systems to support and monitor teachers

**Teachers are generally not well supported by school-level systems to improve pedagogy**

One of the five designated responsibilities of head teachers is to shape a vision of academic success for all pupils, but the in-depth interviews with head teachers found that this was a little acknowledged area. Only two out of nine head teachers in the case study schools recognised academic leadership as a responsibility and reported enacting this. Similarly, head teachers rarely considered improving instruction to be one of their responsibilities despite research showing that teachers tend to respond well to (fair and constructive) performance appraisal and feedback and that it can lead to improved teaching behaviours. The IE survey findings show:

- Head teachers consider checking lesson plans the most important means of assessing teachers’ performance and 89% of them are doing this while about half of head teachers are observing lessons.
- Formal written feedback on lesson observation is almost completely absent in most schools, and formal verbal feedback on assessment also appears to be quite limited. Less than 1% of teachers were able to show any written feedback from having a lesson observed, while less than one-third (27%) of teachers said that they had had a one-on-one meeting with the head teacher, assistant head teacher or academic master to discuss their performance or professional development needs in the previous school year (2013).
- Parents in the case study schools also perceived feedback channels to teachers on their classroom performance to be weak. Many parents reported that their complaints to the school about teaching were rarely passed on to teachers.
- Despite this, half of teachers rated the level of support provided by the school to improve their teaching as good (38%) or very good (12%), while only 9% rated it as poor.

**Pre-service preparation and in-service support are inadequate**

Other research conducted recently in Tanzania finds that TTC “tutors do not have access to tutor guides to teach the initial teacher education curriculum and the plethora of different textbooks means an inconsistent approach even within one TTC. Tutors are not involved in curriculum design either for the TTC or primary education and they are not always informed when curricula are updated. With frequent changes in the primary curriculum, [teacher] trainees are taught content that does not necessarily match what is actually taught in the primary schools”. The IE study itself found that the levels of in-service training received by teachers are currently very low: only 8% of teachers had attended any form of in-service training in 2012 and 2013. Teachers in the nine case study schools also stressed that that have not received sufficient orientation to the new curriculum, even though it was introduced more than five years ago.

**Teacher attendance in school and class is not being supervised effectively**

Across the schools surveyed, only 4% of head teachers said that monitoring teacher attendance and punctuality was their most important role in managing teacher performance. In the nine case study schools, all head teachers
acknowledged teacher management as part of their responsibilities, but some admitted that they do not fulfil this task either out of a lack of empowerment to enforce rules or a lack of willingness to do so. Many head teachers and teachers perceive the Ward Education Coordinator\textsuperscript{20} as having the authority to discipline teachers, but the large number of schools under their jurisdiction means that only certain aspects of teacher supervision are feasible. Some parents from the nine communities also reported that their complaints about teacher attendance were rarely acted upon.

**Key findings: Systems to monitor and support teachers**

**Strengths:** School-level support systems for classroom instruction (particularly checking lesson plans and observing lessons) are functioning at some level in most schools.

**Constraints:** The TTCs responsible for pre-service training are not adequately preparing teachers, and in-service teacher training systems to follow up and address curriculum changes seem to be barely functioning. School- and district-level feedback to teachers on their classroom performance is very limited, and effective systems are not in place to ensure that they attend their timetabled lessons.

**Conclusion**

Motivated teachers in the classroom with adequate subject knowledge and good pedagogical skills supported by on-going professional development and supervision at school and district level are essential foundations for improving pupil learning in Tanzania. This note has provided evidence of strengths and constraints to good teaching in 17 disadvantaged districts. It is hoped that the Government of Tanzania and its development partners working directly, and through large-scale programmes such as EQUIP-T, can use this evidence to better inform strategies to improve the quality of primary teaching in Tanzania.

**Further information**

**Box 1: Overview of the EQUIP-T IE**

The IE baseline study applied a mixed-methods approach, with qualitative and quantitative methods integrated so as to strengthen the robustness and depth of the findings. For the programme districts the baseline results are based on:

- **A quantitative survey of 100 government primary schools in 17 programme districts** (see map below) covering:
  - 1,497 Standard 3 pupil tests;
  - 329 interviews with teachers of standards 1 to 3;
  - 247 TDNAs in Kiswahili administered to teachers of standards 1 to 3, and 529 TDNAs in mathematics administered to teachers of standards 1 to 7;
  - 100 head teacher interviews and school record checks; and
  - 199 Standard 2 lesson observations in Kiswahili and mathematics.

- **Qualitative fieldwork in nine research sites that overlap with a sub-set of the quantitative survey schools**, consisting of key informant interviews and focus group discussions with head teachers, teachers, pupils, parents, 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 to collect the baseline data.

The mixed methods research will be repeated in 2016 and 2018, to enable a robust estimate of programme impact on pupil learning, as well as evidence on the channels of programme influence.
Figure 6: Programme districts included in impact evaluation

Notes
2 The five initial EQUIP-T regions had among the lowest 2014 Primary School Leaving Examination pass rates in the country.
3 The shared characteristics include: percentage of households with electricity, percentage of children in school, and pupil to teacher ratio.
6 The TDNA was developed by OPM with a national team of experts and this is the first time a TDNA has been used in Tanzania. The Tanzania TDNA was based on the format of the TDNA developed by Dr David Johnson, Department of Education, University of Oxford, for DFID Nigeria.
8 Teachers most frequently mentioned TEHAMA (Teknolojia ya Habari na Mawasiliano), which is an information, communication and technology subject.
9 The IE baseline survey measures the use of different teaching behaviours in the classroom with an instrument based on tools used to evaluate a school-based INSET programme in Tanzania (Hardman, F and Dachi, H. (2012) “Evaluation of School-based INSET pilot programme.” York, UK: Institute for Effective Education, University of York.)
11 DSiraj and Taggart (2014).
About the authors and other contributors

This briefing note was written by Gunilla Pettersson and Georgina Rawle and reports on the work on the baseline IE study of EQUIP-T that has been conducted by OPM. Paud Murphy and Peter Buckland read early drafts and provided valuable comments. The note draws on the OPM Impact Evaluation Baseline Report Volumes 1 and 2 (OPM, 2015 http://www.opml.co.uk/). Readers are encouraged to quote and reproduce material from this briefing note in their own publications. In return, OPM requests due acknowledgement and for quotes to be referenced. OPM cannot be held responsible for errors or any consequences arising from the use of information contained in this publication. Any views and opinions expressed do not necessarily reflect those of UK Department for International Development (DFID). For more information contact georgina.rawle@opml.co.uk

The quantitative survey results 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. The data management and processing system allows real-time uploading and data sharing as well as continuous feedback to enumerators, to reduce errors in data capture. Validation and cleaning of the data occurs within a few days of completion of the interview. For more information contact info.tanzaniaoffice@opml.co.uk

About the project

EQUIP-T is a Government of Tanzania programme, funded by UK DIFD, 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 UK DFID. It is designed to: i) generate evidence on the impact of EQUIP-T on primary pupil learning outcomes, including any differential impacts for girls and boys; ii) examine perceptions of the effectiveness of different EQUIP-T components; iii) provide evidence on 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 (continued)

13 During the lesson observations teachers’ interactions with pupils were categorised according to whether they were gender balanced, i.e. whether teachers interacted with pupils proportionally to their presence in the classroom.


15 World Bank (2012) “Service Delivery Indicators. Tanzania”. Washington, DC: World Bank. Note that the data was collected in 2010. One explanation for the lower absence rate found in the IE study is that schools were given some advance notice of the survey visit, while the World Bank survey was unannounced.

16 Ibid. The Service Delivery Indicator (SDI) survey was repeated in 2014. Preliminary results, as yet unpublished, show minor improvement in teacher attendance in classrooms and in time spent teaching (time on task), compared with the 2010 SDI survey.


20 Since the IE study was carried out, ward education coordinators have been retitled ward education officers to reflect their increased responsibilities.