Zambian Education School-based Training (ZEST) Project

COHORT 1 EVALUATION, June 2019

Acknowledgements

Contents

1. Rationale and aims of the Cohort 1 evaluation report

Cohort 1 in the ZEST project started in May 2018, involving 200 teachers, from 17 schools in 3 zones of Chisamba district (Chisamba, Chipembi and Liteta). This cohort 1 evaluation report complements the year 2 annual report and logframe data submitted to the Scottish Government in April 2019, and forms part of the ongoing monitoring and evaluation of the ZEST project. We are firmly committed to the belief that it is 'possible to research and learn from social policies, programs and initiatives in order to improve their effectiveness' (Pawson & Tilley, 1997, pxii). Accordingly, this evaluation seeks to demonstrate what we have learnt from cohort 1 of ZEST and to explain how this is shaping our approach to the project.

For the small-scale evaluation exercise undertaken in 8 of the cohort 1 schools in March 2019, we adopted the same methodology as the baseline study. The year 2 annual report was therefore designed to report on the measures identified in the logframe, namely:

- The use of active teaching and learning approaches in primary school classrooms (Outcome Indicator 1 in the logframe); and
- Teachers' engagement in SBCPD and collaborative work (Outcome Indicator 2 in the logframe).

This sort of experimental evaluation is essential for accountability. In this report we have expanded our viewpoint and adopted a slightly different methodology in order to bring in the voices of teachers, school in-service coordinators (SICs), zone in-service coordinators (ZICs), headteachers, and zone and district officials who form cohort 1 in the ZEST programme, to enable us to better understand and illustrate what aspects of the programme are working well and why.

2. Realistic Evaluation

Pawson and Tilley (1997) advocate for 'realistic evaluation' which attempts to answer the question of 'why a program works, for whom and in what circumstances' (pxvi). A realistic evaluation starts with the articulation of theories – or propositions – about how the program is expected to work. These are sometimes referred to as 'programme theories'. Evidence is gathered in order to judge the extent to which the hypothesis describes what is happening. Through a process of inference, the success (or otherwise) of the programme can be explained, leading to new hypotheses which in turn can be tested. Through this process of reflexive monitoring (May & Finch, 2009) evaluation becomes part of the programme and drives the design as the programme proceeds.

In the case of ZEST the 'programme theories' (related to the logframe indicators) at the start of Cohort 1 were:

1. Teachers' classroom practice and professional skills
    1.1 By giving teachers help and resources in the form of classroom examples, classroom practice and teachers' professional skills will improve.
    1.2 Through an organised progressive programme of School Based Continuous Professional Development (SBCPD), teachers will become more confident practitioners.

2. Impact on learners' behaviour and outcomes
    2.1 If teachers improve their professional skills, learners' outcomes will improve.

3. Teachers' participation and collaboration in SBCPD

3.1 Through the provision of contextualised resources, teacher group meetings (TGMs) will become more purposeful and more engaging for teachers.

3.2 By providing a progressive programme of activities and teaching approaches to use and develop in Teacher Group Meetings (TGMs), a community of practice will develop which will encourage teachers to collaborate with each other.

These theories have driven the design of the programme, informing the design of the training resources and the workshops that have been designed and carried out in Zambia.

In this evaluation study we have collected and analysed evidence which will enable us to explore these theories and gain insights that we can take forward to cohort 2.

3. The Study

This evaluation report draws on evidence gathered during workshops and monitoring visits undertaken by the Open University/World Vision Zambia project team between May 2018 and March 2019, and a small-scale evaluation exercise undertaken in 8 of the cohort 1 schools in March 2019, using the same methodology as the baseline study (March, 2018). The sources of data are summarised in Table 1.

Table 1: Sources of data

Data source	District	HTs	SICs	Teachers	TGMs	School Activities	Challenges
Cohort 1 evaluation (March 2019)		X	X	X	X		
August 2018 Workshops	X	X	X			X	X
Sept 2018 School presentations				X	X	X	X
Dec 2018 HT		X			X		X
Dec 2018 SICs			X		X		X

Each source of data was analysed and evidence against each of the three purposes of ZEST gathered together.

a) Cohort 1 Evaluation Exercise

The Cohort 1 evaluation exercise was conducted as a mixed method study. Wherever possible, a similar approach to the baseline study undertaken in March 2018 was followed. The evaluation was limited to a sample of 15 of the 200 cohort 1 teachers in 8 of the 17 cohort 1 schools. It was designed to establish current classroom practices with respect to active teaching and learning approaches, teachers' engagement with SBCPD, and the extent of collaboration amongst teachers.

The same three tools were used in the Cohort 1 evaluation as were developed for the baseline study, with a few updates:

a. **Continuing Professional Development (CPD) interview**: The purpose of this interview was to gather a picture of frequency and nature of SBCPD taking place and the extent of participation by teachers. This involved interview questions for the School In-service Coordinator (SIC) about the TGMs and taking photographs of pages of the School In-service Record (SIR), in order to establish the number of TGMs taking place and the topics that were discussed.

b. **Teacher interview**: one or two teachers were interviewed in each school. The purpose of the interview was to gather information about their practice, their confidence in active teaching approaches and their involvement in CPD.

c. **Teacher lesson observation**: one or two teachers (different from the SIC) in each school were observed teaching a lesson. This was arranged on the day and with each teacher's consent. There were a few questions to be completed before the lesson; a tick sheet to complete every two minutes during the lesson; and some questions for enumerators to answer after the observed lesson. The lesson observation schedule in the evaluation exercise was replicated from the baseline in order to compare like-with-like. As set up in the logical framework (logframe), observations were devised based on the observable behaviours, taking into account 'pedagogic universals' that underpin quality education and national policy aspirations.

All participants were volunteers (in accordance with OU ethical research guidelines) and had the right to withdraw until the end of the data collection period. Each participant was provided with information about the study and how the data would be used.

The teacher/lesson observations were undertaken using a 'time sampling' method, with a tool that was quantitative in nature. Throughout the entire duration of the lesson, the enumerator employed an 'instantaneous time sampling' technique to record what the teacher and the learners were doing every 2 minutes (i.e. at minutes 1, 3, 5, 7, and so forth). Table 2 shows the pre-coded activities which enumerators could select from, plus an 'other' option where they could add notes for activities that did not fit within the given categories. The observers could note any further details that would complete the account of the lesson, and additional information was recorded about the classroom environment.

Table 1: Categories of activities for lesson observations

The teacher is	The learners are
1. Presenting or explaining	1. One is giving answers
2. Organising learning tasks or activities	2. Chorusing replies
3. Asking learners open questions	3. Working or talking in pairs
4. Giving feedback	4. Working or talking in groups
5. Walking around the classroom	5. Reading
6. Observing or listening to learners	6. Writing (not copying)
7. Writing on the blackboard	7. Listening
8. Other	8. Copying
	9. Working individually
	10. Presenting
	11. Organising a task
	12. Other

Data collection was completed using face-to-face interviews, review of school documents e.g. the School In-service Record (SIR), and lesson observations using tablet-based questionnaires. Data collection was undertaken by a group of 8 independent enumerators in Zambia, five of whom had participated in the baseline evaluation. A total of 8 (over 50% of the Cohort 1 schools) school data collection visits were undertaken over five days. In one school all the evaluation tasks were not completed due to staff absence.

The evaluation team was led, supervised and supported by a WVZ M&E staff member and accompanied by district officials from the Ministry of General Education district office. World Vision team members and district officials were not present during interviews or lesson observations and did not participate in the data collection, though they remained with the team in the school. Teams spent on average 4 hours in each school. Where practical, interviews and observations were carried out simultaneously.

The school was not aware of the details of the visit in advance in order to avoid stage-managing. The interview and observation schedule was drawn up with the school on arrival; teachers were then given the opportunity to consent or withdraw from the process.

At each school one school administrator, and up to 2 teachers were interviewed and observed. The teachers interviewed were randomly selected from the primary school teachers present, with a focus on obtaining a balance across the grades and subjects where possible.

The data collected were anonymised by using a code for each respondent, so that the reported responses could not be identified with individuals by the data analyst.

Data collection was completed using the KOBO Toolbox system used in the Baseline study and input on tablets.

Population and sample

A sample of 8 schools were selected from the 17 Cohort 1 schools for the evaluation exercise. The selection of schools from target zones were as follows:

- Chisamba zone: 5 schools
- Chipembi zone: 2 schools
- Liteta one: 1 school

Within each zone, schools for the sample were randomly selected.

The evaluation involved interviews with 22 staff in the 8 schools, including 15 teacher interviews and 7 CPD interviews. The size of the schools varied considerably (see below):

- Schools had between 7 and 22 classes
- Schools had between 3 and 15 classrooms
- Schools operated 2 or 3 streams each day

Table 3: Cohort 1 evaluation schools' data

School code	Number of FEMALE primary school TEACHERS	Number of MALE primary school TEACHERS	Number of FEMALE primary school LEARNERS	Number of MALE primary school LEARNERS
1	21	2	670	524
2	14	1	462	398
3	4	3	127	166
4	6	3	144	113
5	22	8	628	610
6	1	5	223	212
7	4	4	193	195

Some teachers were absent and one school did not have the head teacher or an administrator available, meaning that the CPD interview was not conducted in that school. Although the majority of schools included grades 1 to 9, teacher interviews and lesson observations were only undertaken for those working in grades 1 to 7.

In all, 7 CPD interviews, 15 teacher lesson observations, and 15 teacher interviews took place across the 8 schools.

b) August 2018 Workshops

In August 2018, three workshops took place on consecutive days. Day 1 was designed specifically for District officials. On day 2, these were joined by head teachers and zonal in-service co-ordinators, and on day 3 these were joined by school in-service co-ordinators. Activities were tailored to the particular groups and the plan for the third workshop (in which all the 'layers' were present) emerged during the first two. The aim was that by day 3, District officials would be able to take the lead, thus demonstrating to school in-service co-ordinators that the programme is owned in Zambia, rather than it being imposed by WVZ and the OU. The data collected includes the outputs of group activities, field notes, and contributions from participants.

c) September School Presentations

In September 2018, workshops took place in the three zonal schools. All teachers in the 17 participating schools were invited. Each school was asked to make a short presentation about how ZEST is working in their school and to bring photographs to illustrate anything that they specifically wanted to share. Some schools used powerpoint, some delivered oral accounts and others shared a formal written report. The workshop leaders took detailed notes during the presentations and subsequent discussions.

d) December 2018 Head Teachers

In December (the end of the second term of ZEST), a workshop was delivered to District officials, head teachers and school in-service co-ordinators. The aim was to gather information about how ZEST is working and to prepare them for the introduction of the third term approaches to their teachers when the new term started in January. Rather than a 'tick box' evaluation at the end of the workshop, we asked head teachers two or three reflective questions about their experiences over the two terms of ZEST.

In the same workshop, school in-service co-ordinators were given slightly different questions so that the impact of ZEST could be analysed from different perspectives.

4. Findings

Overall the picture that emerges from the data is mixed. Perhaps not surprisingly some teachers are more confident in using the approaches than others. However, after just three terms of activity, there are encouraging signs and lessons learned. We present the findings with reference to each of the 'programme theories' set out in section 2.

1. Teachers' classroom practice and professional skills

1.1: By giving teachers help and resources in the form of classroom examples, classroom practice and teachers professional skills will improve

The observation of lessons indicated that most cohort 1 teachers used a range of activities in their lessons and learners were involved in different tasks. Teachers mainly 'asked questions' and 'presented or explained information to learners'. The first teaching approach teachers practiced as part of ZEST centred on questioning, so this indicates that this learner-centred approach was one that teachers had gained confidence with and were able to put into practice regularly in their lessons. As a consequence of this it would seem that learners were mainly involved in listening to the teacher which can be considered a passive activity, however the involvement and participation of learners in more interactive learning activities is an aspect identified by teachers throughout the workshops and which is illustrated by some of the comments from teachers and headteachers in the rest of the report. In relation to the use of questioning in the September 2018 workshops, some teachers indicated that:

- 'it had helped them assess themselves and learners, which later helps them take appropriate interventions' (Sept 2018, school presentations, Moombe PS).
- 'teachers are starting to target their questions according to attainment levels more effectively' (Sept 2018, school presentations, Chisamba PS)
- 'teachers become innovative in the phrasing and sequencing of questions' (Sept 2018, school presentations; Kalangwa PS)

In relation to more interactive activities such as group and pair work, the data collected in the observations indicated that the use of pair work and group work was limited and not all teachers seemed to have used it in the observed lesson. Initial analysis of the data and the teachers' experiences shared in the September and December 2018 workshops indicate that while some teachers are doing more and better group work and pair work, many teachers appear to be adopting a linear approach to the use of key teaching approaches presented in the ZEST training materials, seeing the approaches as discrete and exclusive rather than understanding that an effective lesson will consist of several linked activities. For example, in the ZEST training handbook, cohort 1 teachers were introduced to 'pair work' (teaching approach 2) in the May to July 2018 term and to group work (teaching approach 4) in the September to December 2018 term, but the evaluation took place the following school year in March 2019. By March 2019, the approaches they were working on were all related to formative assessment, which might explain why there was less pair work and group work in evidence in the classroom observations.

When teachers were interviewed, most teachers indicated they used pair work and group work more than 2 or 3 times per week (see table 4), which provides a different model of activities than those in the observed lessons. It is difficult to ascertain the source of the differences between the 'observed' lessons and the teachers 'reported' use of the different approaches which could be caused by a number of things including optimistic self-reported uses by teachers, misunderstandings or data mis-representation by evaluation enumerators, the nature of the lesson observed... However, the use of teaching approaches in a linear form and the use of a range of activities within a lesson were investigated further in the next round of workshops in May 2019, where specific activities were undertaken to strengthen the message that the different teaching approaches are to be built on and used concurrently as opposed to used in isolation. This aspect of including a range of different teaching approaches concurrently in lessons is one that will also be strengthened in the resources being finalised for future cohorts, and a message that has been shared with cohorts 1 and 2 District officials and WV monitoring team to follow up throughout their visits.

Table 2: Teacher interviews: self-reported use of collaborative classroom practices

In the past month how frequently did you	Ask learners to work or discuss in pairs?		Ask learners to work or discuss in a group?		Use a resource you made from local materials or that you found locally?	
	#	%	#	%	#	%
Every lesson	6	40.0%	6	40.0%	2	13.3%
Most lessons	1	6.7%	3	20.0%	7	46.7%
Once or twice a day	2	13.3%	2	13.3%		
2 or 3 times in a week	6	40.0%			2	13.3%
Once a week			1	6.7%	2	13.3%
Less than once a week			3	20.0%	2	13.3%
	15	100.0%	15	100.0%	15	100.0%

N= 15 interviews

It is difficult to make significant comparisons between the baseline report and the current small-scale cohort 1 evaluation (N: 204 vs 15 teacher interviews), however a clear improvement in the use of pair work can be perceived. In the baseline '37% and 74% of teachers respectively reported using pair work and group work in most or every lesson, an aggregate of 56%' (Gallastegi & Stutchbury, 2018, p.30). For the cohort 1 evaluation, Table 4 indicates that 60% and 73.3% of teachers used pair work and group work respectively in most or every lesson, providing an aggregate of 67%, 11% higher than the baseline aggregate.

The regular use of different teaching approaches reported by teachers in Table 4 indicates that the resources provided as part of the ZEST programme, which include activities to develop teachers' skills in these approaches as well as examples of how teachers have used them, are proving to be useful for teachers to implement a wide use of approaches in their lessons and confirms the hypotheses that:

> By giving teachers help and resources in the form of classroom examples, classroom practice and teachers professional skills will improve.

The evidence from the workshops suggests that teachers have been practising these approaches, but this is not yet reflected convincingly in the observation data. When they were asked about the

use of TESSA resources (which contain ideas for activities to try in the classroom and examples of teachers working in African contexts), teachers and school in-service co-ordinators reported challenges in navigating the TESSA library. We have learnt that providing the TESSA library is not enough: for cohort 2 we have included classroom examples in the training manual and have provided more guidance on how to navigate TESSA.

1.2. Through an organised progressive programme of School Based Continuous Professional Development (SBCPD), teachers will become more confident practitioners

In the evaluation exercise, teachers were asked about their level of confidence in using a number of active teaching approaches included in the ZEST training resources i.e. asking open questions, using pair and group work, and roleplay. Questions and pair work are approaches that are included in the first term of ZEST, while group work and roleplay are introduced in the second term. Table 5 below indicates that the level of confidence seems to be increasing with the length of time the teachers have been using the approach, with no teachers indicating they had not used or did not feel confident to use the approaches explored in term 1.

Table 5: Teacher interviews: teachers' reported confidence in use of active teaching approaches

How confident are you in using collaborative active teaching approaches in your lessons?	Asking open questions		Pair work or discussions		Group work or discussions		Role play	
	#	%	#	%	#	%	#	%
Very confident	7	46.7%	7	46.7%	7	46.7%	7	46.7%
Confident	7	46.7%	6	40.0%	4	26.7%	1	6.7%
I try this	1	6.7%	2	13.3%	3	20.0%	3	20.0%
Not confident					1	6.7%	1	6.7%
I have not done this							3	20.0%
	15	100%	15	100%	15	100%	15	100%

N= 15 interviews

When comparing the data from cohort 1 and that of the baseline we also perceive an improvement in the confidence of teachers using pair work, with 87 % of Cohort 1 reporting to be 'confident' or 'very confident' compared to 66% in the baseline. However, the confidence in using group work has declined from the data in the baseline with 73% reported being 'confident' or 'very confident' in using group work, as opposed to 87% in the baseline (Gallastegi & Stutchbury, 2018, p.30). This lower level of confidence in the Cohort 1 teachers could be linked to the aspect identified above of time required to put the approach into practice in lessons, or to the experience of the OU based on other international projects identified in the baseline which 'suggests that confidence levels are likely to drop as teachers come to understand what is meant by active learning in practice.' (Gallastegi & Stutchbury, 2018, p.30).

As well as an impact on their confidence, after one or two terms of working on LCE and collaboratively with peers, teachers, including School In-service Coordinators (SICs) started to see an improvement in their professional skills and practice as the following quotes from different workshops illustrate:
- 'it helped revise skills developed at University/College, but maybe forgotten' (Sept 2018, school presentations; Chisamba Ranch)

- 'it encourages lesson reflection and evaluation by teachers' (Sept 2018; school presentations; Munano PS)
- [pair work] 'allowed teachers to identify different abilities in pupils' (Sept 2018, school presentations, Kalangwa PS)
- 'I have learned how to handle large classes using approaches that I previously thought could not be applied' (Dec 2018, SIC Chisamba)
- 'I feel more prepared to teach because I have learned more approaches and better ways of employing them to my learners when delivering lessons' (Dec 2018; SIC Chisamba)
- 'I have learned that using different approaches helps the learner. Different learners learn from different approaches e.g. some do better when they learn with peers, others when they explain it themselves' (Dec 2018; SIC Chisamba)
- 'I feel proud of myself. The content has really empowered me as a SIC and it has changed the way I view teaching e.g. involving all as well as planning collaboratively.' (Dec 2018; SIC Chisamba)
- 'I have learned to have an unbiased perspective; to be sensitive to the feelings of learners and to have an ability to listen' (Dec 2018, SIC)

In the cohort 1 evaluation exercise, CPD coordinators were also asked about any improvements they had perceived among teachers since the implementation of ZEST, and these are some of the responses:

Improvements for teachers
• Improved relationship between teachers and learners through use of approaches.
• Accountability for teachers by teachers to ensure that teaching approaches are used in the classroom.
• The teaching approaches have made teaching multi-grade classes easier.
• More participating by teachers.
• Lesson preparations have improved.
• There has been an improvement in record keeping.
• The teachers now plan their lessons.
• Teachers work extra hard in fear of remaining behind.
• Teachers' commitment to planning and achieving goals set.

The data and teachers', SICs' and ZICs' testimonies indicate that teachers are becoming more confident and support the hypothesis that:

> Through an organised progressive programme of School Based Continuous Professional Development (SBCPD), teachers will become more confident practitioners.

However, this is not yet evident in the classroom observations which could reflect the tendency to treat the nine classroom approaches separately. It could also be the result of the realisation that there is more to running effective group work than they previously thought. They understand the issues more clearly but need time to practice and develop their skills.

2. Impact on learners' behaviours and outcomes

2.1 If teachers improve their professional skills, learners' outcomes will improve

It is difficult to identify improvement in learners' outcomes in one school year, however data from the evaluation exercise and from comments shared by teachers, SICs and/or head teachers in the different workshops held between May and December 2018, suggest a number of changes in learners' behaviours and outcomes are emerging.

The 15 CPD coordinators interviewed as part of the cohort 1 evaluation exercise, identified the following aspects as improvements they had observed in their school since their participation in ZEST, which also reflect statements shared by teachers and head teachers in the September and December 2018 workshops. The changes can be categorised in three main areas:

- Relationships in the school
- Pupil attendance, participation and motivation
- Pupil performance

Improvements affecting learners

Relationships in the school
- Improved relationship between teachers and learners through use of approaches
- Activities are learner centred

Pupil attendance, participation and motivation
- Reduced absenteeism because pupils are excited about learning because of use of approaches
- Participation of learners has improved
- Pupils are free to express themselves
- The response from the learners has improved greatly
- The learners are able to participate in class due to the approaches used

Pupil performance
- Pupils performance has improved
- Children are able to write on their own
- Learners who could not read are now able to read
- Learners who could not write are now able to write
- Learners are now able to read in English and other Zambian languages
- Results are better than before
- Performance of learners has improved

Two recurrent themes arise from the ZEST workshops in Zambia: the change among the 'slow/shy' learners as a result of the inclusion of active teaching approaches in lessons; and the increased participation and motivation among learners.

Teachers refer on a number of occasions to increased participation and motivation of 'slow/shy' pupils in classroom activities, to changes in teachers' practice to include these learners and changes in other learners to work with or support these learners:

- 'encourages active participation and motivation including among slow learners' (Sept 2018, school presentations, Moombe PS)
- [referring to pair work] 'some pupils feel scared to ask the teacher but find it easier to ask friends, hence more learning takes place' (Sept 2018, school presentations, Moombe PS)
- 'teachers have changed their tone of voice when talking to the slow learners' (Sept 2018; school presentations; Liteta PS)

Increased participation and motivation of learners in lessons has also been identified as a result of more active teaching from teachers:

- 'students are more actively involved' (Sept 2018, school presentations, Chisamba PS)
- Students talked more and were able to give their opinions freely (Sept 2018, school presentations, Chisamba PS)
- There was a 'spirit of co-operation' amongst learners (Sept 2018, school presentations, Chisamba PS)
- 'learners interest and learning stimulated, motivated' (Sept 2018, school presentations, Mupamapamo PS)

A head teacher in September 2018 indicated that 'learners have improved academically, socially and physically due to the use of the approaches' (Dec 2018, HT)

We currently do not have data linked to learners' outcomes, however it is expected that with improvements in relationships in schools, pupil attendance, participation, motivation and performance, along with those in teachers' professional skills discussed in the previous sections, learning outcomes will improve, which supports the third hypothesis set up at the beginning of the report:

> If teachers improve their professional skills, learners' outcomes will improve.

3. Teachers' participation and collaboration in SBCPD

3.1 If we provide contextualised resources their teacher group meetings (TGM) will become more purposeful and engaging for teachers

Schools in Zambia have a model of SBCPD based on regular teacher group meetings (TGMs). The ZEST programme makes use of the established model of TGMs and provides activities and resources that teachers can use to develop their professional skills and teaching practice, as well as to encourage collaboration and peer-support among teachers.

The number of TGMs varies between schools and the schools involved in the cohort 1 evaluation exercise had between 0 and 12 TGMs per term over the three terms ZEST was implemented. These variations could be due to school size and the different models of TGMs schools have been reporting to use. Some schools have implemented a model of one whole-school TGM to introduce a teaching approach, followed by a number of TGMs for the different school levels to allow teachers to work more closely together in developing activities suited to their learners' grades and the curriculum they are covering.

Table 6: TGMs per term in Cohort 1 evaluation schools

Term 2 – 2018	Term 3 – 2018	Term 1 - 2019	Average number of meetings
4	3	4	3.67
2	3	2	2.33
12	12	9	11.00
2	4	2	2.67
2	4	3	3.00
0	4	2	2.00
3	0	0	1.00

Based on consultation with stakeholders and data from the baseline study, ZEST is formed of a programme of activities which is best completed over three TGMs per term. The average data in Table 7 indicates that 57% of schools had 3 or more TGMs per term over the three terms included in the cohort 1 evaluation (Term 2 2018; Term 3 2018; Term 1 2019). Recently, due to the different shifts teachers work and to other commitments or priorities in the school calendar (e.g. exams, new initiatives), some schools found it difficult to ensure 3 TGMs still take place each term. Based on anecdotal evidence and conversations at workshops, there also seems to be a tendency to have shorter TGMs (from 1 hour to 20 minutes) to adapt to the different schedules of teachers and schools. It would be difficult to have the sort of in-depth discussions and the collaborative planning envisaged in ZEST in meetings of less than 1 hour. These are aspects that we continue to take into consideration and discuss with District and MOGE officials as we identify ways forward for future cohorts as we scale up the reach of ZEST.

Table 7: school by average number of TGMs held

Threshold value of average number of TGMs held in a term	In Term 2 2017	In Term 3 2017	In Term 1 2018	Average 1*	Average 2**
0 TGMs held on average	14%	14%	14%	0%	14%
≥ 1 TGMs held on average	86%	86%	86%	100%	86%
≥ 2 TGMs held on average	86%	86%	86%	86%	86%
≥ 3 TGMs held on average	43%	86%	43%	43%	57%
≥ 4 TGMs held on average	29%	57%	29%	14%	38%
≥ 5 TGMs held on average	14%	14%	14%	14%	14%

*Average 1 indicates the schools that had on average 3 or more TGMs in each of the three terms

** Average 2 indicates the schools that had on average 3 or more TGMs across the three terms, i.e. 9 or more total for the three terms. This allows for schools to catch up on TGMs they have not been able to have during a term due to other initiatives or reason (weather, teacher absence..).

The TGM programme for the year is organised by School In-service Coordinators working with head teachers. They then record attendance in the School In-service Record. During the cohort 1 small-scale evaluation, seven CPD coordinators (HT or SIC) were asked about attendance at the TGMs, with the majority saying it was excellent at over 80%. This data is supported by testimonies of a number of participants in the August and September 2018 workshops who highlighted an increase in attendance and participation at TGMs:

- 'TGM attendance improved and all actively involved' (August 2018, ZIC)

- 'all teachers get involved in the TGMs actively' (August 2018, HT/SIC)
- 'better attendance at TGMs' (Sept 2018, school presentations, Nayamba PS)

The data from the cohort 1 evaluation as well as testimony gathered in the different workshops held with cohort 1 participants go some way to reinforce the hypotheses that:

> By providing contextualised resources for teachers to use in their TGMs, the TGMs are more purposeful or engaging.

The evidence is, however, that more work is to be done with head teachers and school in-service co-ordinators to ensure a 'ring-fencing' of TGMs for discussions of the nine teaching approaches and collaborative planning. The ZEST model is that the TGMs are facilitated in such a way that discussion takes place. Some of the comments at the workshops (field notes) and evidence from the teacher notebooks suggests that the TGM activities presented in the training handbook are not necessarily taking place, or the facilitator is delivering a lecture on the approach. More work is required to find out about and strengthen what actually happens during TGMs.

3.2 By providing a progressive programme of activities and teaching approaches to use and develop in Tutor Group Meeting (TGMs), a community of practice will develop which will encourage teachers to collaborate with each other.

ZEST encourages collaboration among teachers in TGMs to plan activities using the different teaching approaches, to observe each other putting the activity in practice in the lesson, and to provide an opportunity for constructive peer-feedback after the lesson. In the cohort 1 evaluation, head teachers or SICs were asked about changes they had perceived in teachers since the introduction of ZEST. Below are some of the comments that emerged during the interviews:

Improvements in teachers
• More interaction between teachers • Spirit of team work has improved • Collaborative planning • Teachers are able to open up and consult on the various challenges they have in the classroom • Teachers in group meetings share ideas on teaching and has helped improve the quality of teaching and lesson planning

In the different workshops, teachers and head teachers also acknowledged an increase in collaborative work among teachers and its impact in the school and on staff:

- 'peer monitoring was enhanced' (August 2018; HT/SIC)
- 'promoted team work, spirit of consultation between teachers' (Sept 2018, school presentations, Kalangwa PS)
- 'took part in collaborative planning' (Sept 2018, school presentations, Chisamba)
- 'Effective planning as a group' (Sept 2018, school presentations, Munan PS)
- 'Teamwork and the spirit of friendliness among teachers and learners due to the ZEST approaches and TGMs' (Dec 2018, HT)
- 'I feel happy and proud because the ZEST approaches brought in unity, peace and all togetherness among teachers' (Dec 2018, HT)

- 'It [my role as a SIC] has improved a lot in the sense that last year I was a little bit reluctant as only one person/teacher used to present a lesson while others observed. This year we planned collaboratively and taught individually which made it live' (Dec 2018, SIC) [This specifically refers to the Lesson Study model used in Zambia where teachers were passive observers of a model lesson, as opposed to the change ZEST is aiming to implement where all teachers are actively practicing activities in their lessons and receiving feedback or being observed by peers].

The testimony recorded from cohort 1 participants corroborates the final hypothesis set in the initial section of this report:

> By providing a progressive programme of activities and teaching approaches to use and develop in TGMs, a community of practice will develop which will encourage teachers to collaborate with each other.

It is particularly encouraging to find reports of an improved relationship between teachers. One group of head teachers reported on a more 'harmonious atmosphere amongst the staff'.

An unexpected example of collaboration to improve teaching and learning has been collaboration across schools and districts, where the district has facilitated the deployment of teachers or District officials from one school/district to another to share the work they do and provide any required support. One school indicated in the August 2018 workshop that as a result of misunderstanding some aspects of the programme, they 'made enquiries from schools that were doing well, and we are doing well now'. This model of learning from the previous cohort is one that has been implemented in the cohort 2 workshops, where District officials have supported the OU/WV team to facilitate workshops and share their experiences and different models of implementation of ZEST. This has been a useful capacity building strategy for the district and a number of teachers from ZEST schools have since been promoted to support SBCPD throughout the district and maintain the sustainability of this SBCPD model beyond the end of the project.

It should be noted, however, that the concept of a 'community of practice' (Wenger, 1998) is predicated on the notion that learning is seen as a joint enterprise of negotiation and reflection, taking place through mutual engagement in practice, with all participants being valued equally. The comments above suggest that we are beginning to see 'negotiation and reflection' through 'mutual engagement in practice'. The increased harmony amongst teachers also suggests a flattening of structures within schools. However, evidence from field notes and post-workshop discussions is that the relationship between District officials and teachers remains hierarchical, with teachers being less forth-coming in the presence of Ministry officials. The challenge is to ensure that MOGE and District officers begin to see themselves as learners. There is a sometimes a sense that being 'expert' means knowing everything rather than having the skills to support teachers and being open to the co-construction of knowledge about teaching in the new context created by the demands of the Revised School Curriculum.

4 Discussion

We have found evidence to support each of the hypotheses, but in doing so have identified a few ways in which the programme can be improved and a few key challenges. Drawing on the evidence above for cohort 2 we have modified the training resources to:

- Include examples from the classroom. These are drawn from teachers' accounts of lessons in term 1 so they are authentic and recognisable in Zambia.
- Provide more guidance on how to navigate the TESSA library. From talking to teachers we have mapped the TESSA library specifically to curriculum topics taught in terms 1, 2 and 3.
- Emphasise the fact that the approaches should not be isolated and that the aim is to build a repertoire. The approaches were purposefully selected to be progressive, with the easiest coming first, building to those that are more demanding.

A focus for the monitoring of cohort 2 will be the TGMs. We need to know more about what is actually happening during TGMs and to find ways to support head teachers and school in-service co-ordinators in organising them in the most efficacious manner for their context.

ZEST is predicated on the stated aim of the Zambian Revised School curriculum to ensure teaching is more learner-centred. Drawing on Schweisfurth, (2013) we have conceptualised learner-centred education as a set of attitudes and values rather than specific approaches. It involved relationships based on mutual respect and understanding. The model for change that we have identified through other international projects is that as teachers try new approaches, they elicit new responses from learners, which in turn encourages them to experiment more. Over time, new attitudes to learners and learning emerge (Murphy & Wolfenden, 2013; Stutchbury, Dickie, & Wambugu, 2018). We have seen evidence of this in Zambia, particularly in the context of 'slow' learners, with several teachers commenting that when they set tasks in pairs or groups and observe their students, they noticed that 'slow' learners could do more than they expected.

For ZEST to bring about sustainable change, learner-centred attitudes need to prevail throughout the system. The most significant challenge that has emerged is that District officials and head teachers position themselves as 'experts' and often have a deficit model of teachers. Training sessions (pre-ZEST) usually took the form of a lecture from an expert, and visits to schools are in order to monitor teachers. The evidence that the relationship between the District officials and the teachers they support is not always learner-centred in nature, has come from observing them working together in workshops and from their responses to workshop activities. For example, the District officers will frequently sit themselves on a separate table and have to be encouraged to join in; teachers are sometimes more reluctant to contribute when District officers are present; and in response to an activity based on scenarios it was clear that they conceptualise their role in terms of monitoring rather than providing support.

The challenge is to find a model of change that works for this professional group. In the first instance, we have produced an implementation guide, specifically targeting District officers and head teachers. We have also encouraged District officers to distribute themselves around the room in workshops, and work alongside teachers. Our perception is that these barriers are beginning to be broken down. This is something that we will investigate more closely in the next evaluation report.

A new hypothesis that has emerged is that in order for District officials and head teachers to be effective in supporting change, they need to be supported in developing more learner-centred attitudes towards the teachers they support.

Two other challenges have emerged which are impacting on the programme design for cohorts 2 and 3.

Firstly, the recognition that achieving pedagogic change is a slow process. We have provided more material than teachers have been able to process. In this context, a year feels like a relatively short

period of time. For cohort 3, we will reconceptualise the programme as a two-year programme, with the emphasis in the sixth (final) term being sustainability.

Secondly, in order to demonstrate the efficacy of the programme to the Ministry of Education and to the wider world, we need to be able to demonstrate an impact on learners. Given that ZEST does not focus on a specific skill (such as learning to read or speaking English) this is challenging. During the next two years of the programme, we will be talking to teachers and head teachers in more depth to try and ascertain in more detail how they perceive that outcomes are improving, and what is causing any improvements.

5   Conclusions and moving forward in ZEST

The resources provided have helped to improve teachers' classroom practice and professional skills, but the classroom examples need to be easily accessible. This means including as many as possible within the training handbook, rather than relying on teachers accessing TESSA OER. Teachers are reporting increased confidence in using active approaches, but this is not yet reinforced by classroom observation. Teachers have reported differences in their students, including a greater willingness to participate in lessons, improved attendance and, in some cases, improved performance. Attendance at TGMs has improved and teachers are positive about collaborative planning. Many questions remain however, around how these can be organised most effectively, and what happens during the TGMs. Many schools are reporting improved relationships between teachers and between teachers and students. Teachers welcome the opportunity to work together and to learn from each other.

We have always been aware of the importance of working at all levels of the system and have involved District officials in the co-design of workshops and activities. The importance of building on this work so that the relationship between teachers and District officers becomes more collaborative has become apparent. What was called a 'teachers' handbook' has been re-conceptualised as a 'training handbook' making it clear that the core materials – how to teach in a more interactive way – are relevant to everyone, not just teachers. More emphasis is required on the role of the District officials in supporting ZEST, rather than simply monitoring what is happening. By engaging with the training materials themselves, they will be able to provide mentoring and coaching when they are in school.

It needs to be acknowledged that the scope of this study is fairly limited. It is strengthened by the inclusion of data gathered by independent enumerators, but there is a tension between focusing on the business in hand – the project activities – and making space to collect data to support the sort of in-depth monitoring required for a realistic evaluation. We have addressed this tension through the thoughtful use of workshop evaluations, the careful preservation of all workshop outputs and reflective conversations between the OU, WV and Chisamba District officials after each workshop.

In the next phase of the evaluation we will be working with WZ and the enumerators to examine how best to manage classroom observations. The apparent mis-match between the quantitative and qualitative data against logframe Outcome Indicator 1 (the use of active teaching and learning approaches in primary schools) needs to be explored further.

The proposed hypotheses were based on the logframe indicators. What has emerged however in this attempt to examine 'what works, for whom, in what circumstances, and why' is the importance of the role of District official. Strenuous efforts were made to secure 'buy-in', with an extra

workshop in April 2018, in Zambia, specifically for MOGE officials and District officials. The impact of this was encouraging: District officials have been presenting the ZEST model in workshops and explaining it to teachers. In the next phase of the project, we intend to collect evidence about the extent to which the relationship between District officials and teachers is evolving. This is not part of the logframe, but this analysis demonstrates the importance of modelling learner-centred approaches throughout the system and it needs to be built more explicitly into the design of the next phase.

References

Gallastegi, L. & Stutchbury, K (2018): Zambian Education School-based Training (ZEST) Project Baseline Study – March 2018; The Open University

May, C., & Finch, T. (2009). Implementing, Embedding and Integrating Practices: an outline of

Normalisation Process Theory. *Sociology*, *43*(3), 535–554.

Murphy, P., & Wolfenden, F. (2013). Developing a pedagogy of mutuality in a capability approach:

teachers' experiences of using the Open Educational Resources (OER) of the teacher

education in sub-Saharan Africa (TESSA) programme. *International Journal of Educational*

Development, *33*, 263–271.

Pawson, R., & Tilley, N. (1997). *Realistic Evaluation*. London, UK: Sage.

Schweisfurth, M. (2013). *Learner-centred Education in International Perspective: whose pedagogy for*

whose development? Abingdon: Routledge.

Stutchbury, K., Dickie, J., & Wambugu, P. (2018). Teacher education in sub-Saharan Africa in one

school in Kenya: macro challenges and micro changes. In K. Safford (Ed.), *Learning and*

Teaching Around the World: Comparative and International Studies in Primary Education.

London: Routledge.

Wenger, E. (1998). *Communities of Practice: Learning, Meaning and Identity*. New York: Cambridge

University Press.