Supporting Open Practices with Teachers in Zambia

Kris Stutchbury, Lore Gallastegi and Clare Woodward

The Open University, United Kingdom

Abstract: This paper demonstrates how the features and affordances of open learning have been developed in new and productive ways to provide school-based continuing professional development for teachers in Zambia. It presents and critically reviews data from 200 teachers who have taken part in phase 1 of the Zambian Education School-based Training (ZEST) – a project which, over the next three years, will be scaled-up across Zambia. The project is underpinned by the belief that knowledge about teaching is co-constructed through participation in, and reflection on, practice. Thus, the emphasis is on empowering teachers to work together to develop practices appropriate to their context – open practices. In the study, we describe an on-going process of realist evaluation which enables us to establish at an early stage what works in which contexts and informs on-going project planning. It concludes that this approach to evaluation has the potential to be helpful in understanding open practices and how they can be developed.

Keywords: school-based professional development; learner-centred education; capacity development.

Introduction

This paper demonstrates how the features and affordances of open learning have been developed in new and productive ways to provide school-based continuing professional development (SBCPD) for teachers in Zambia. It sets out the Zambian context and introduces the Zambian Education School-based Training (ZEST) programme (2017-2022), funded by the Scottish Government. It draws on key literature to explain the thinking behind ZEST and explore the challenge of evaluating work in the context of open learning and practices.

In some ways ZEST can be considered an intervention. It provides resources and a set of activities for teachers, to be used and undertaken as part of the existing SBCPD system but does not prescribe specific practices or ways of teaching. The emphasis is on developing the professionalism and expertise of teachers and empowering them to make decisions about how best to support their learners. A process of 'flexible co-design' alongside on-going evaluation ensures that the resources 'speak' to teachers and provide the support required to meet the aspirations of the revised school curriculum.

In the context of this approach, a challenge for the project is how to evaluate impact. Teachers interpret the resources in different ways and it is therefore difficult to identify aspects of teaching to 'measure'. This paper describes how a 'realistic evaluation' (Pawson & Tilley, 1997) was used in order to try and identify what works for whom in which circumstances and why. The aim was to find out what structural factors need to be in place in order to enable teachers to exercise agency and to learn how to work in new ways.

The Zambian Context

Education has been a priority in Zambia since independence in 1964. Yet, despite significant gains in access, educational outcomes remain low: there exist "low learning achievement levels across all the subsectors with average learning achievement scores at Grade 5 being below 40 percent across most subjects" (ZANEX, 2018, p. 26).

This is despite two significant developments and support from the international community: a revised school curriculum which calls for learner-centred approaches and places more emphasis on inclusivity, teaching values and skills alongside knowledge (MOGE, 2014), and an embedded programme of school-based continuing professional development (SBCPD) (Jung et al., 2016). The current SBCPD system is based on the Japanese version of 'lesson study' where, through collaborative planning and observing model lessons, a series of effective lesson plans will emerge, which all teachers can use.

The Zambian Ministry of General Education (MOGE) received £85 million from the Department for International Development (DFID, UK) (administered by the Global Partnership for Education) between 2013 and 2018. The emphasis was on financial management of the education sector and improving access, rather than on teacher development. A report (GPE, 2016) cites the need for more educational resources and an increased focus on building teacher capacity. Training materials have been produced as part of a cascade training model but these have not reached the teachers in schools (GPE, 2016).

It should be noted that 20% of the school-aged population in Zambia are outside the mainstream system in so-called 'community schools'. The geography of Zambia is such that there are often significant distances between schools, with the result that communities support their own schools, paying teachers and providing resources. These schools (more than 3000) receive limited (if any) support from the central government. They cater for the poorest and most marginalised children but their results are often as good as, or better than, government schools (USAID, n.d.). Teachers often work with the local community to do the best they can for children – perhaps demonstrating the potential of open practices.

By the end of 2017, improved access left government schools over-crowded and under-resourced. The revised primary curriculum, and the realisation that teachers needed more help, created an interest in the MOGE in the Teacher Education in Sub-Saharan Africa (TESSA) open educational resources (OER)[i]. Discussions between The Open University UK, World Vision Zambia and the Teacher Education Specialised Service (TESS) division of the MOGE led to the Zambian Education School-based Training programme (ZEST), funded by the Scottish Government. It is ZEST which is the subject of this paper.

Zambian Education School-based Training

ZEST is designed to support the pedagogic change required to deliver the new curriculum. It is based on the notion that knowledge about teaching is co-constructed through participation in, and reflection on, practice in a particular socio-cultural context. It encourages teachers to explore possibilities within their own classroom and to develop practices that will involve, challenge and support learners. Rather than provide prescriptive lesson plans, ZEST aims to support teachers in developing new attitudes towards learners, consistent with the aspirations of the revised school curriculum, and new practices

within their own context. Thus, the emphasis is on open learning and open practices supported by the use of open educational resources.

ZEST preserves the aspects of current practice which work well (collaborative planning in regular teacher group meetings), and operationalises the MOGE's revised Zambian school curriculum, supporting teachers and stakeholders in making a pedagogic shift to a more learner-centred approach to learning and teaching. ZEST strengthens the existing system of lesson study through the provision of OER made available to all stakeholders and adapts, what is essentially a Japanese model of Continuous Professional Development (CPD), for the African context. The resources draw on a wide evidence-base about the nature of teacher learning and learner-centred education. They include the TESSA OER, alongside bespoke training guides and audio-visual materials.

Since 2017, the ZEST team has been working with provincial and district officials, head teachers and 400 teachers in Central Province to refine and develop resources. Ultimately these resources will be available across Zambia. They are designed to enhance the existing structures and processes for SBCPD by transforming what was proving to be a largely passive process for most teachers into a programme of active participation and engagement.

The challenges in the current system were explored at an early collaborative planning workshop with key stakeholders including head teachers and teachers. During this workshop a number of issues were identified, which ZEST sets out to improve upon. These are set out in Table 1.

ZEST uses the same structures and processes as the existing programme with two significant innovations: the 'problem' is mastering a progressive set of teaching approaches (e.g., questioning, pair work, using local resources) that will help teachers deliver the new curriculum, and the 'model lesson' is replaced by the expectation that all teachers will try out the planned activities in their own classroom and reflect on how this went, providing a more equitable and inclusive experience for all teachers. The strengths of the current system — regular meetings, collaborative planning and reflection — are preserved in a year-long programme which focuses on active teaching and learning. One year was felt to be long enough to establish new ways of working and ensured that resources are available for multiple cohorts, providing the opportunity to develop and refine the materials, based on feedback from Zambian teachers. Cohort 1, ran from May 2018 to April 2019; and cohort 2 from January 2019 to Dec 2019. Each cohort involves 200 teachers. Further cohorts are planned and, in 2021, the programme will be rolled out across Central Province. All the materials will be available as OER so the programme will be available to all teachers in Zambia. It is cohort 1 which is the subject of this initial evaluation. ZEST draws on what is known about teacher-learning and the principles of learner-centred education (LCE).

Table 1: Lesson Study Issues and ZEST Responses (evidence from a workshop, February 2018)

Lesson Study	Issue	ZEST Response
Identification of a teaching problem	The problems are often subject-based and not relevant to all teachers.	Working with 34 teachers and head teachers, nine teaching approaches were identified (3 per term) to support the delivery of the new curriculum that would form the basis of the Teacher Group Meetings (TGMs). The approaches form the 'teaching problem' to be addressed during the school year, and are applicable to all ages and subjects.
Regular teacher group meetings in which model lessons were planned	TGMs often involved administration rather than discussions of teaching and learning. The lack of resources made it difficult to think of new ideas.	A training handbook provides activities for teachers to do together in TGMs assisting them in understanding the nine teaching approaches. Teachers work in small groups to plan activities to try in their lessons using the approaches. TESSA OER are available to provide ideas.
A model lesson given by one teacher and observed by the others	The same few teachers volunteer for the model lessons and the topic is not always relevant to all teachers. The lesson is sometimes staged with a group of children gathered for a 'once-off' lesson.	All teachers try the planned activities in their own classroom.
Critique of the lesson and re-planning	For most teachers, lesson study is a passive process. Receiving critique from a group sometimes deters teachers from volunteering.	Teachers discuss how the activities went and reflect on the experience. They plan another activity, using the same approach, but on a different topic. The 'trying' and 'reflecting' become part of normal teaching.
A repeat of the model lesson taking into account the changes	Teaching the same lesson again is not authentic for the children involved. In the absence of resources it is difficult for teachers to think of new ideas.	Teachers try out the new activity and, if possible, observe each other for short periods of time. Again, they reflect on how it went.

The Theoretical Underpinning of ZEST

Teacher Learning

ZEST is based on the idea that knowledge about teaching can be considered to involve 'knowledge for practice' (theoretical understandings), 'knowledge in practice' (reflection on what happens in classrooms) and 'knowledge of practice' (socially constructed understandings of practice which are constantly challenged and re-evaluated) (Cochran-Smith & Lytle, 1999). The ZEST resources draw on established theoretical understandings about teacher learning and student learning (e.g., Hattie, 2012; Korthagen, 2017; Shulman & Shulman, 2007; Vygotsky, 1978). They provide examples of activities for teachers to try in their classrooms through the TESSA OER (Open University, 2008) and they establish a process in which teachers meet to discuss learning and teaching in their school. A key component of teachers' knowledge is 'pedagogical content knowledge' (PCK) (Shulman, 1986), which teachers hold about how to represent their subject to learners, taking into account the learners' interests and abilities; it is a blend of content (subject) and pedagogical knowledge, and describes the 'special' knowledge that good teachers hold but subject experts might not, and is often missing from teacher

preparation courses in Africa (Dembele & Miaro-II, 2013; Vavrus, 2011). The TESSA OER support PCK by providing examples of how teachers in Africa have taught different topics.

Teacher-learning is a complex process, but there is a consensus in the literature that learning to teach is much more than acquiring knowledge. It involves developing a vision for effective teaching (Shulman & Shulman, 2007), developing a professional identity (Malderez et al., 2007) and challenging existing values and beliefs (Borko et al., 2000; Shulman & Shulman, 2007). The process advocated in ZEST — regular teacher group meetings which focus on discussing learning and teaching — is designed to help the development of a 'community of practice' (Wenger, 1998) of teachers, working towards the common goal of improving children's classroom experiences, while the TESSA OER and the revised school curriculum provide a vision for good practice. The vision set out in the revised curriculum is based on 'learner-centred education' (LCE) although how that is being interpreted is not explained.

Learner-centred Education

LCE is a popular policy choice across sub-Saharan Africa, yet in a review of 72 papers (from a range of global contexts) about promoting active classroom pedagogy, Schweisfurth (2011) concludes that 'the stories of unequivocal success in implementation are few and far between' (p. 430). The reasons for this are complex and context dependent (Barrett, 2007; O'Sullivan, 2004; Vavrus, 2009), but often seem to stem from a misunderstanding about what LCE means and a contradiction between prevailing attitudes to learning and learners and those that underpin LCE (Schweisfurth, 2011).

In a study of teachers involved in an in-service programme in South Africa, designed to promote learner-centred practices, Brodie et al. (2002) found that many teachers adopted some of the practices (the 'form') without necessarily adopting the underlying attitudes (the 'substance'). These authors suggest that, for sustainable change, the 'substance' of LCE needs to be adopted – underlying beliefs and attitudes need to be challenged. This distinction between the 'form' and 'substance' of LCE manifests itself through a focus on classroom approaches, with a common misconception that a lesson is learner-centred if students are working in groups, for example, with little regard for what they are doing and whether learning is taking place. Conceptualising LCE in terms of attitudes and beliefs rather than particular practices is helpful and underpins Schweisfurth's (2015) 'minimum criteria' for LCE. She presents the standards in terms of what makes a good lesson, but these can be applied at multiple levels within the system and provide a practical definition of LCE. They are:

- Lessons are engaging and motivate pupils to learn.
- Classroom relationships are based on mutual respect.
- Learning challenges pupils and builds on existing knowledge.
- Dialogue is used in teaching and learning.
- The curriculum is relevant to learners' lives and values a range of skills including critical thinking and creativity.
- Assessment tests a range of skills and gives credit for more than recall of knowledge.
  (Adapted from Schweisfurth, 2013, p. 146)

These criteria provide both a definition of a learner-centred teacher and a framework for the analysis of teaching, and form the basis of our work in ZEST. The nine classroom approaches in ZEST (see

Figure 1) have been chosen on the basis that if teachers master them then their lessons are more likely to meet the criteria set out above.

```
1. Using questioning to promote thinking

2. Using pair work

3. Using the local community/environment as a resource

4. Using group work in your classroom

5. Storytelling, songs, games and role-play

6. Involving all learners

7. Monitoring and giving feedback

8. Eliciting prior knowledge

9. Assessing learning
```

Figure 1: The ZEST teaching approaches.

Realist Evaluation

Programmes which set out to make specific improvements such as in reading or English language can evaluate progress by measuring achievement. In the context of open practices, in which teachers are being offered resources and support but left to interpret the ideas for themselves, measuring achievement is more difficult. Pawson and Tilley (1997) advocate for 'realist evaluation' which attempts to answer the question of 'why a program works, for whom and in what circumstances' (p. xvi). A realist evaluation starts with the articulation of theories — or propositions — about how the programme is expected to work. These are sometimes referred to as 'programme theories'. A programme theory sets out the 'underlying assumptions about how an intervention is meant to work and what impacts it is expected to have' (Pawson et al., 2005, p. 21) – 'if we do this then this will happen, because…'. Empirical evidence is gathered in order to judge the extent to which the programme theory describes what is happening. Through a process of inference to explain the relationship between the context and the factors at work which might affect the outcomes, the success (or otherwise) of the programme can be explained, leading to new theories which in turn can be tested. The aim is to understand how the programme can be made to work most effectively. 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' draw on previous experience of working with OER in Africa, discussions held between MOGE officials, World Vision and The Open University in May 2017, and activities (including focus group discussions) with teachers, head teachers and district officials at a co-design workshop in February 2018. The initial programme theories for ZEST cover three key areas and are:

1. Teachers' classroom practice and professional skills
   - By giving teachers help and resources in the form of classroom examples, classroom practice and teachers' professional skills will improve.

- Through an organised progressive programme of Schools-based Continuous Professional Development (SBCPD), teachers will become more confident practitioners.

2. Impact on learners' behaviour and outcomes
    - If teachers improve their professional kills, this will have an impact on learners' behaviours such as attendance and engagement in lessons.
    - If teachers improve their professional skills, learners' outcomes will improve.

3. Teachers' participation and collaboration in SBCPD
    - Through the provision of contextualised resources teacher group meetings (TGM) will become more purposeful and more engaging for teachers.
    - 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.

Finally, the programme is underpinned by the assumption that:

> achieving 'buy in' from the MOGE, provincial and district officials will create the circumstances in which the activities of ZEST can take place and become embedded in the Zambian education system.

These theories have driven the design of the programme, of the training resources and the workshops that have been co-designed (with our partners) and carried out in Zambia.

In the evaluation study this paper draws from, we have collected and analysed evidence from working with cohort 1 (200 teachers) which will enable us to explore these theories and gain insights that we can take forward to cohort 2.

The Study

This study 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 (out of 17) of the cohort 1 schools in March 2019, using classroom observation and structured interviews. The data sources are summarised in Table 2.

Table 2: Data Sources

Aspect of the Programme Data Source	District	Head Teachers (HTs)	School Inservice Coordinators (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 head teacher responses to activities		X			X		X
Dec 2018 SIC responses to activities			X		X		X

Each data source was analysed and evidenced against each of the three ZEST purposes. The data included:

Cohort 1 Evaluation

The cohort 1 evaluation exercise was conducted as a mixed method study. Eight independent enumerators collected data in eight of the 17 cohort 1 schools (randomly selected, but representing each of the three zones), from 15 teachers, over a period of five days. 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. Three tools were used:

- **Continuing Professional Development (CPD) interview**: 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 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.
- **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.
- **Teacher lesson observation**: one or two teachers in each school were observed teaching a lesson. This was arranged on the day and with teacher's consent. There were a few questions to be completed before the lesson about the classroom environment; a tick sheet to complete every two minutes during the lesson, and some questions for enumerators to answer after the observed lesson.

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 lesson observations were undertaken using a 'time sampling' method in which the enumerator employed an 'instantaneous time sampling' technique to record what the teacher and the learners were doing every two minutes (i.e., at minutes 1, 3, 5, 7, and so forth). Table 3 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.

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. Only the enumerators were involved in collecting data. Teams spent on average four hours in each school and, where practical, interviews (with two teachers) and observations (one teacher) were carried out simultaneously.

Table 3: 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

The data collected were anonymised, so that the reported responses could not be identified. Data collection was completed using the KOBO Toolbox system (https://www.kobotoolbox.org/) and input on tablets.

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 coordinators, and on day 3 these were joined by school in-service coordinators. 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 emphasising that the programme is about sustainable new ways of working. The data collected includes the outputs of group activities, field notes, and contributions from participants.

September 2018 School Presentations

In September 2018, workshops took place in the three zonal schools. All the teachers in the 17 participating schools were invited and each school made a short presentation about how ZEST is working in their school. The workshop leaders took detailed notes during the presentations and subsequent discussions.

December 2018 Head Teachers

In December (the end of the second term of ZEST), there was a workshop for district officials, head teachers and school in-service coordinators. 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. At the end of the workshop, head teachers were asked two or three reflective questions about their experiences over the two terms of ZEST.

December 2018 School In-Service Coordinators

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

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 above.

Teachers' Classroom Practice and Professional Skills

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 was encouraging. However, learners were mainly involved in listening passively to the teacher.

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 (September 2018, school presentations, School1),

- 'teachers are starting to target their questions according to attainment levels more effectively' (September 2018, School presentations, School 2), and

- 'teachers become innovative in the phrasing and sequencing of questions' (September 2018, school presentations; School 3).

When teachers were interviewed, most of them indicated they used pair and group work more than two or three times per week. Likewise, in the September and December 2018 workshops, teachers talked about doing more pair and group work. However, the data collected in the observations suggested that the use of this was limited. The observation schedule focused on how much opportunity students have to talk to each other and their teacher about their learning. No significant improvement was noted.

Workshop data suggested that many teachers see the approaches as discrete and exclusive rather than understanding that an effective lesson consists of several linked activities. 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. The evaluation took place the following school year in March 2019, by which time the approaches they were working on were all related to formative assessment.

In the teacher interview, teachers were asked about how often they use collaborative classroom practices. The reported frequency was more than suggested by the lesson observations, casting doubt on the reliability of the responses. Even so, the reported use of collaborative practices in the evaluation of cohort 1 was 11% greater than that reported in the baseline study.

Despite the classroom observation data there is evidence that the teaching approaches set out in the ZEST training handbook are useful to teachers. There is some evidence 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 is not yet reflected convincingly in the observation data. When they were asked about the use of TESSA resources teachers and school in-service coordinators reported challenges in navigating the TESSA library.

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. Over 80% of the 15 teachers declared themselves to be 'confident' or 'very confident' in 'asking open questions' and 'pair work or discussions'. Over 70% are 'confident' or 'very confident' in using 'group work and discussions', with 54% being 'confident' or 'very confident' in using 'roleplay'.

Compared to the baseline, confidence in using pair work has increased. However, confidence in using group work has declined. This lower level of confidence reflects the experience of The Open University in other international projects that confidence levels are likely to drop as teachers come to understand what is meant by active learning in practice. As they take a more critical stance, they become aware of how difficult it is to organise effective group work.

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 (SIC), 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" (September 2018, school presentations; School 4)

- "it encourages lesson reflection and evaluation by teachers" (September 2018; school presentations; School 5)

- [pair work] "allowed teachers to identify different abilities in pupils" (September 2018, school presentations, School 3)

- "I have learned how to handle large classes using approaches that I previously thought could not be applied" (December 2018, SIC School 2)

- "I feel more prepared to teach because I have learned more approaches and better ways of employing them to m learners when delivering lessons" (December 2018; SIC School 2)

- "I have learned that using different approaches helps the learner. Different learners learn from different approaches eg some do better when they learn with peers, others when they explain it themselves" (December 2018; SIC school 2)

- "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." (December 2018; SIC School 2)

- "I have learned to have an unbiased perspective; to be sensitive to the feelings of learners and to have an ability to listen" (December 2018, ZIC).

In the cohort 1 evaluation exercise, CPD coordinators were also asked about any improvements they had perceived among teachers since the implementation of ZEST. Responses are given in Table 4.

Table 4: Perceived Improvements in Teaching

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 testimony indicate that teachers are becoming more confident and supporting 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 fact that this sort of change takes time. They understand the issues more clearly but need time to practice and develop their skills.

Impact on Learners' Behaviours and Outcomes

If teachers improve their professional skills, learners' outcomes and behaviour 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, shows a number of changes in learners' behaviours and outcomes.

The 15 CPD coordinators interviewed as part of the cohort 1 evaluation exercise identified the following aspects as improvements, which also reflect statements shared by teachers and head teachers in the September and December 2018 workshops. These are presented in Table 5.

Table 5: Perceived Improvements for Learners

Improvements affecting learners*
Relationships in the school
• Improved relationship between teachers and learners through use of approaches
Pupil attendance, participation and motivation
• Reduced absenteeism because pupils are excited about learning as a result of use of approaches
• Learner participation has improved
• Pupils are free to express themselves
• Learner response has improved greatly.
• The learners are able to participate in class due to the approaches used.
Learner performance
• Learner performance has improved
• Children are able to write on their own
• Learners who could not read are now able to do so
• Learners are now able to read in English and other Zambian languages
• Results are better than before

These are direct quotes from teachers and head teachers concerned, hence the reference to both 'pupils' and 'learners'.

Two recurrent themes arise from the workshops: 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:

- "encourages active participation and motivation including among slow learners" (September 2018, school presentations, School 1)

- [referring to pair work] "some pupils feel scared to ask the teacher but find it easier to ask friends, hence more learning takes place" (September 2018, school presentations, School 1)

- "teachers have changed their tone of voice when talking to the slow learners" (September 2018; school presentations; School 6).

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

- "students are more actively involved" (September 2018, school presentations, School 2)

- "students talked more and were able to give their opinions freely" (September 2018, school presentations, School 2)

- "there was a 'spirit of co-operation' amongst learners" (September 2018, school presentations, School 2)

- "learners interest and learning stimulated, motivated" (September 2018, school presentations, School 7).

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

We currently do not have data directly linked to learners' outcomes, however it is expected that with improvements in relationships in schools, pupil attendance, participation, motivation and performance, will eventually lead to improved learning outcomes. This provides tentative evidence in support of the third programme theory:

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

Teachers' Participation and Collaboration in SBCPD

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

The number of TGMs held in the sample schools varied between 0 and 12 per term over the three terms ZEST was implemented. These variations could be due to school size and the different TGM models used by schools. 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 year groups to allow teachers to work more closely together in developing activities suited to their learners' grades and the curriculum they cover.

Overall, 57% of schools had three or more TGMs per term (Term 2 2018; Term 3 2018; Term 1 2019). Based on anecdotal evidence and conversations at workshops, in some schools, although they have regular meetings, they are relatively short — sometimes less than an hour. It would be difficult to have the sort of in-depth discussions and collaborative planning envisaged in ZEST in such short meetings. This needs further investigation with cohort 2.

The TGM programme for the year is organised by SICs working with Head Teachers. They record attendance in the School In-service Record. During the cohort 1 evaluation study, 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.

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 SICs 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 suggest that the TGM activities described 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.

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 collaborative planning of activities using the different teaching approaches, peer observation (when possible), and reflection on classroom experiences. In the cohort 1 evaluation, head teachers or SICs were asked about changes they had perceived in teachers since the introduction of ZEST. Table 6 shows some of their comments:

Table 6: Improvements in Teacher Collaboration

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

- "I feel happy and proud because the ZEST approaches brought in unity, peace and all togetherness among teachers" (December 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" (December 2018, SIC).

The testimony recorded from cohort 1 participants suggests that:

> 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 has been 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 has been implemented in the cohort 2 workshops where district officials from cohort 1 have supported the OU/WV team in facilitating workshops and sharing their experiences and models of implementation of ZEST. This has been a useful capacity building exercise for the district and a number of teachers from ZEST schools have been promoted since the start of the project.

Achieving 'buy in' from the MOGE, provincial and district officials will create the circumstances in which the activities of ZEST can take place.

This theory was not explicitly addressed through the evaluation study, but evidence has emerged from the workshops of the nature of the roles at the provincial and district level and the impact of their work. At workshops in May, September and December, district officials took the lead in introducing ZEST and explaining the similarities and differences between ZEST and the current system. This was well-received and important in securing engagement from head teachers and school in-service coordinators. In September 2018 we adopted a model in which district officers experienced participatory activities and then led those activities for head teachers and SICs. The observation was that younger (and often female) officers enjoyed the experience; many, however, found it difficult and tended to resort to lecturing.

In the initial workshops, district, provincial and government officials frequently sat at a separate table and had to be encouraged to join in. Teachers would often defer to them, even though they had the practical experience relevant to the activity. Traditionally, they are seen as the monitors or inspectors, rather than as a source of support. Just as LCE requires a different relationship between teachers and learners, its implementation requires a more democratic relationship between teachers and those tasked with training them in the expectations of the revised school curriculum.

A lack of resources has prevented district officials from monitoring ZEST (they do not have access to a vehicle), but they have taken part in monitoring visits with World Vision. They have bought into the idea and process of ZEST but more attention needs to be paid to supporting them in changing their practice as well.

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.

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 requires 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/shy' 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.

Drawing on the data from this study, in order to better support teachers in making sense of the active teaching approaches being proposed, for cohort 2, we have included classroom examples in the training manual and provided more guidance on how to navigate TESSA OER. We have also planned workshop activities to strengthen the message that the different teaching approaches are to be built on and used concurrently as opposed to being used in isolation. This message will also be strengthened in the resources being finalised for future cohorts and has been shared with cohort 1 and 2 district officials and World Vision monitoring team to follow up throughout their visits.

One of the aims of ZEST is to promote a greater sense of community amongst teachers, and many comments suggest that more collaborative relationships are forming. 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. The evidence suggests that the TGMs are providing the opportunity for collaborative learning, but we need to know more about how these are conducted and what teachers take from them.

Also, evidence from field notes and post-workshop discussions is that the relationship between district officials and teachers remains hierarchical, with teachers being less forthcoming in the presence of Ministry officials, in particular. The challenge is to ensure that MOGE and district officers begin to see themselves as learners and contributors in SBCPD, and teachers feel confident that their contributions in SBCPD discussions are as valid as those coming from Ministry and district officials. 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.

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 evaluation of cohort 2.

A new programme theory 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 have reconceptualised 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.

Conclusion

ZEST is predicated on the belief that promoting open learning and open practices through a structured programme of activities will empower teachers to make decisions about their own teaching. This analysis has provided tentative evidence to support the programme theories set out at the beginning of this paper but has also revealed that although 'buy in' from MOGE officials is

necessary, it is not sufficient. The 'buy in' needs to extend to embracing attitudes and values towards teachers that are consistent with LCE so that they can provide support.

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.

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.

It needs to be acknowledged that the scope of this study is limited. It is strengthened by the inclusion of data gathered by independent enumerators, but there is a tension between focusing on the project activities and making space to collect data to support the sort of in-depth monitoring required for a realist 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 district officials after each workshop.

The programme theories were based on evidence gathered in the planning phase. What has emerged in this attempt to examine 'what works, for whom, in what circumstances, and why' is tentative evidence that the programme will be able to deliver the improvements suggested. It has also highlighted the sort of evidence required in future evaluations and provided a basis for the planning of cohort 2. In the context of promoting open practices, where measuring changes in practice is challenging, this approach to evaluation has the potential to deliver helpful insights.

References

Barrett, A. (2007). Beyond the polarisation of pedagogy: Models of classroom practice in Tanzanian primary schools. *Comparative Education*, *43*(2), 273–294.

Borko, H., Davinroy, K., Carribeth, B., & Cumb, B. (2000). Exploring and supporting teacher change: Two third grade teachers' experiences in a mathematics and literacy staff development project. *The Elementary School Journal*, *100*(4), 273–306.

Cochran-Smith, M., & Lytle, S. (1999). Relationships of knowledge and practice: Teacher learning in communities. *Review of Research in Education, 24*(1), 249-305.

Dembele, M., & Miaro-II, B.-R. (2013). Pedagogical renewal and teacher development in sub-Saharan Africa: Challenges and promising paths. In B. Moon (Ed.), *Teacher education and the challenge of development: A global analysis* (pp. 183–196). London: Routledge.

GPE. (2016). *Global Partnership for Education Education Sector Program Implementation Grant (ESPIG)*. Retrieved from https://www.globalpartnership.org/sites/default/files/2016-11-gpe-isr-zambia.pdf

Hattie, J. (2012). *Visible learning for teachers: Maximising impact on learning*. Abingdon: Routledge.

Korthagen, F. (2017). Inconvenient truths about teacher learning: Towards Professional Development 3.0. *Teachers and Teaching: Theory and Practice*, *23*(4), 387–405.

Malderez, A., Hobson, A., Tracey, L., & Kerr, K. (2007). Becoming a student teacher: Core features of the experience. *European Journal of Teacher Education*, *30*(3), 225–248.

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.

O'Sullivan, M. (2004). The reconceptualisation of learner-centred approaches: A Namibian case study. *International Journal of Educational Development*, *24*(6), 585–602. https://doi.org/10.1016/S0738-0593(03)00018-X

Pawson, R., Greenhalgh, T., Harvey, G., & Walshe, K. (2005). Realist review – A new method of systematic review designed for complex policy intervention. *Journal of Health Services Research & Policy*, *10*(1), 21–34.

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

Polly, D., & Hannafin, M. (2011). Examining how learner-centred professional developmentinfluences teachers' espoused and enacted practices. *Journal of Educational Research*, *104*, 120–130.

Schweisfurth, M. (2011). Learner-centred education in developing country contexts: From solution to problem? *International Journal of Educational Development*, *31*(5), 419–426. https://doi.org/10.1016/j.ijedudev.2011.03.005

Schweisfurth, M. (2013). *Learner-centred education in international perspective: Whose pedagogy for whose development?* Abingdon: Routledge.

Schweisfurth, M. (2015). Learner-centred pedagogy: Towards a post 2015 agenda for teaching and learning. *International Journal of Educational Development*, *40*, 259–266.

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, *15*, 4–14.

Shulman, L., & Shulman, J. (2007). How and what teachers learn; A shifting perspective. *Journal of Curriculum Studies*, *36*(2), 257–271.

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*. (pp. 163-171). London: Routledge.

USAID. (n.d.). *Meeting EFA: Zambia Community Schools* [Case Study]. Retrieved from https://www.epdc.org/sites/default/files/documents/Zambia%20Community%20Schools.pdf

Vavrus, F. (2009). The cultural politics of constructivist pedagogy: Teacher education reforms in the Republic of Tanzania. *International Journal of Educational Development*, *29*, 303–311.

Vavrus, F. (2011). *Ensuring quality by attending to inquiry: Learner-centred practices in sub-Saharan Africa* (No. 4). Retrieved from http://unesdoc.unesco.org/images/0021/002160/216063e.pdf

Vygotsky, L. (1978). *Mind in society: The development of higher pyschological processes*. Cambridge: Harvard University Press.

Wenger, E. (1998). *Communities of practice: Learning, meaning and identity*. New York: Cambridge University Press.

Authors:

Dr Kris Stutchbury is an OU (UK) Senior Lecturer in Teacher Education and Academic Director of TESSA. She is also co-Director of ZEST. She works on other international projects and is a module team chair on the Open University Masters programme. Her research is in the field of Teacher Education. Email: Kris.stutchbury@open.ac.uk

Dr Lore Gallastegi is an OU (UK) Staff Tutor based in Scotland. She is co-Director of ZEST and has previously worked on an international development project in Malawi, and is a module team chair for one of the modules on the Open University degree in primary educational studies. Email: lore.gallastegi@open.ac.uk

Clare Woodward is a lecturer in international teacher education at the OU (UK) and specialises in English language teaching. She worked on English in Action — a project to support English teaching in Bangladesh — and has led projects in Peru and Columbia. Her particular interest is in the use of video to support teacher learning. Email: clare.woodward@open.a.cuk

---

[i] TESSA OER provide examples of classroom activities designed to actively engage learners. The activities have been contextualised for Africa. As OER they are freely available at www.tessafrica.net.