Hastening slowly: insights about teacher development from an evaluation of courses at the WCED's Cape Teaching and Leadership Institute

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Abstract

In the area of teacher professional development, South African education administrators face the challenge of reconciling two imperatives that have entirely different implications for programme time frames and budgets. On the one hand, there is an urgent need to improve the pedagogic content knowledge of many teachers to improve the overall standard of teaching and learning in the public school system. Considering the scale and urgency of the matter, centralised course-based in-service training seems to be the only affordable alternative. On the other hand, researchers have long warned that once-off course-based training on its own has limited impact on teachers' practice, and has to be accompanied by further professional support in the school and classroom, or be abandoned in favour of more enduring professional learning communities. The Western Cape Education Department (WCED) has grappled with this dilemma in the Department's various professional development initiatives for teachers, a mainstay of which is the training offered by the Cape Teaching and Leadership Institute (CTLI). This paper presents some of the data and findings from an external evaluation that ORT SA CAPE conducted in 2011–2012 of courses offered by the WCED at the CTLI. The hierarchy of INSET outcomes proposed by Harland and Kinder (1997) was applied to record changes in the practice of 18 teachers at eight schools. The progress of five of the teachers is discussed to illustrate the interplay between school-level factors and the experiences of individual teachers which influenced the impact of CTLI training on their teaching.

Introduction

This article presents insights gained from an external evaluation by ORT SA CAPE of teacher training courses at the Cape Teaching and Leadership Institute (CTLI) The evaluation was commissioned by the Western Cape

Education Department (WCED).[1] Here we discuss findings from the evaluation (Meyer and Abel, 2013) which followed a sample of teachers over a two-year period (2011–2012). We present vignettes of five teachers that illustrate some of the personal and contextual factors associated with teachers' successful take-up of training, as well as factors associated with poor take-up. Our research found that CTLI training had a positive impact on the practice of some participants, but made no significant or lasting difference to the practice of most.[2]

Scope of the research

The original brief from WCED required evaluation of CTLI's delivery model which changed in a number of respects in 2011, through specific evaluation of six courses in Language, Mathematics and School Management. To create scope for multi-level analysis, ORT SA CAPE opted to focus on individual teachers within their school context as unit of analysis.

The evaluation covered a number of research strands. The following are relevant for the purposes of this discussion:

1. A pre- and post-test written by one cohort of teachers attending each course in 2011 and in 2012, i.e. ±300 teachers per year.

2. Case studies tracking 18 teachers from 2011 course cohorts in eight schools – one school per district (2011–2012).

3. Analysis of results the schools achieved in the WCED diagnostic tests (2002–2011).

CTLI's delivery model

Alongside various provincial and district-level in-service training initiatives, CTLI's offerings could be considered their mainstay of continuous

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1 The authors gratefully acknowledge the WCED for permission to publish the data which is reported in this article.

2 The views expressed in this article are those of the authors and should not be attributed to the WCED, nor ORT SA CAPE.

professional teacher development (CPTD). Annually, CTLI offers extensive programmes of short courses and conferences for teachers. The courses are 1–3 weeks in duration, and run during school terms. Teachers from underperforming schools are the primary target group, but teachers from all public schools may apply. The target subjects for curriculum courses are Language (Home Language and First Additional Language), Mathematics and Natural Sciences. A range of management courses are offered for principals, deputy principals, HODs, aspiring principals and entire SMTs of select schools. Until 2010, CTLI courses included a follow-up support component which entailed two classroom visits by a trainer to each teacher after the training to provide the teacher with feedback on implementation. In 2012, this follow-up support was replaced by an assignment which participants completed back at school as proof of implementation.

Context of the evaluation

It is worth mentioning two features of the broader policy and institutional context in which the research was conducted:

- At the time (2011–2012) the Curriculum and Assessment Policy Statement (CAPS) was being implemented in the Foundation Phase (FP), but was still due to be introduced into most grades in the Intermediate (IP) and Senior Phases (SP). An important implication for interpreting the data is that the Revised National Curriculum Statement requirements for coverage of the various content areas were far less structured than in the current context of CAPS.

- Standardised assessment of learners had become a prominent feature of the education policy context in the Western Cape. Grade 3 and 6 learners have written the annual WCED systemic tests in Language and Mathematics since 2002 and Grade 9 learners since 2010. These tests are administered and marked by external service providers and each school receives a report early in the following year, which gives a breakdown of the results by grade level, content area etc.

Literature review

To locate our research within recent and current debates about CPTD, we give a brief overview of South African and international studies that have informed our thinking.

Insights from international research

International research on in-service education of teachers (INSET) and – in recent years – continuous professional development of teachers (CPTD) shows that teachers' take-up of new knowledge and skills from training has been a long-standing concern (e.g. Adler, Slonimsky and Reed, 2002; Avalos, 2011). Since the 1980s, CPTD practitioners and researchers have moved away from conventional INSET models of once-off workshops or course-based training towards more multi-faceted professional development models to avoid the deficiencies of 'single-design' training, such as the following:

- INSET has often taken a 'one-size-fits-all' approach and lacked depth.
- Training has been disconnected from teachers' practical experience.
- The 'cascade' model whereby teachers are expected to pass on INSET outcomes to colleagues at school was not effective, mostly because new learning was diluted beyond significance.

The INSET model proposed by Joyce and Showers (first in 1980 and updated in 1995 and 2002) addressed these concerns. It was very influential in South Africa (SA) and internationally. Based on extensive empirical research on different INSET programmes in the USA, the authors suggested five components required for training to effect a positive difference in teachers' practice:

- Presentation of theory and content
- Demonstration (modelling new methods and techniques)
- Repeated opportunities for practice during training
- Structured feedback and reflection
- Coaching during the implementation period.

They documented the impact of these five INSET elements across different studies to substantiate their argument that longer-term, in-depth teacher development is more cost-effective than short, course-based interventions. Their research had shown that 10–15 opportunities to practice a specific skill or teaching strategy, with feedback, are needed to enable teachers to use this strategy effectively. While their INSET model informed the design of many teacher development programmes since the 1990s, it must be remembered that the model was based entirely on research conducted in the USA. Many differences noted between SA and the USA, suggest Joyce and Showers' model cannot be applied indiscriminately in South African contexts.

Worldwide, researchers have grappled further with the challenges of producing models and/or suggesting research methodologies to do justice to the complexity of CPTD. Harland and Kinder (1997, previously cited by Webb, Boltt, Austin, Cloete, England, Feza, Ilsey, Kurup, Peires, and Wessels,1999) mapped three of their nine 'outcome types' onto the INSET components proposed by Joyce and Showers. However, evidence from empirical research in the UK did not support some assumptions that underpinned Joyce and Showers' model. They concluded that a more multi-dimensional model was needed to accommodate the complex range of variables and outcomes involved in teacher development, and added six further 'outcome types' to their proposed hierarchy. To emphasise the non-linearity of their model, they clarified that individual teachers followed unique pathways through the different outcomes, while progressing through the three orders of change. Although they did not claim that teachers must achieve all nine outcomes to demonstrate significant impact on their practice, "it was generally the case that the larger the number of outcomes met the greater the probability of a change in teaching behaviour" (p.80). Harland and Kinder clarified that categories in their typology might need to be expanded or refined, depending on the purpose for which the training is designed. For example, knowledge and skills could be elaborated to reflect the specific types of knowledge such as procedural, situational, propositional and practical knowledge.

In 2002, Joyce and Showers published a revised version of their original INSET model, based on more recent empirical research studies in the USA. They proposed school-based peer coaching as an effective alternative to mentoring and coaching by external specialists, a very costly option. Structured feedback was omitted from their revised model, as research showed that it led peer coaches to slip into a supervisory/monitoring role

rather than a mentoring role. In peer coaching, teachers would alternate the roles of both the subject (the teacher whose lesson is observed) and the coach to develop a collegial CPTD culture in schools. The authors reviewed the effectiveness of the remaining four training components – theory, demonstration, practice and peer coaching – and concluded that complex CPTD designs which include all four of these training components are much more successful than 'single' training designs or even those which include the first three components but exclude peer coaching. A major challenge is that schools with traditional school management structures and cultures need to adopt far-reaching innovations to accommodate co-operative planning and collective learning – hard to achieve in South African conditions.

Anderson (2004) noted that a standards-based curriculum demands complete transformation in teachers' lesson planning. Whereas teachers traditionally focused on classroom activities aimed at teaching select curriculum content as their starting point in planning lessons, a standards-based curriculum requires them to plan 'backwards' from the specified assessment standards and create opportunities for learners to achieve the expected outcomes. A standards-based curriculum demands that teachers have a clear understanding of the prescribed standards in terms of concepts and skills to be taught, as well as knowledge of their learners' current levels of knowledge and skills, so that teaching can start from the familiar and challenge learners to engage with more advanced knowledge and skills. This implies intermittent diagnostic assessment of learners' work to inform teachers' planning, whereas assessment was traditionally used primarily to determine learner achievement to qualify for progression to the next grade or phase.

Opfer and Pedder's (2011) review offers insight into the challenges that affect the development and evaluation of CPTD projects and programme. They explain why and how the process-product logic, that dominated CPTD for 20 years, has had limited explanatory value. This tended to disaggregate information about the teacher, the school and the learning activities. They argue that teacher development should be conceptualised as the "concatenation of practices, learning orientations, and individual and collective learning contexts that must occur for teacher learning to take place" (Opfer and Pedder, p.394). To do this complexity justice, they propose that CPTD programmes should be designed and researched as 'complex adaptive systems', within which the teacher, the school and the learning activities exert reciprocal influence on each other in the course of the developmental process.

From the above review, the following insights and ideas appear to have particular value for CPTD in SA:

- Teacher training and development are complex, contextually situated processes.
- Course-based training has proven ineffective in the absence of follow-up support (coaching and mentoring).
- Peer coaching has become a preferred form of follow-up support, but requires fundamental change in bureaucratic school cultures and the conventional individualistic nature of teachers' work.
- The role of assessment as the driver of teachers' planning is critical and often neglected in favour of serving learner progression or promotion.

Findings from South African research over the last twenty years

On the basis of empirical studies in SA over the last two decades, researchers and CPTD practitioners employed a number of concepts and conceptual frameworks for designing and studying CPTD programmes. Abel (1997) described the structure of teacher development as a spiral and indicated that teachers must master both the skills of deconstruction and reconstruction of knowledge for the process of professional development to make a positive difference to their practice.

In their overview of 35 education research projects undertaken in the 1990s for the President's Education Initiative (PEI), Taylor and Vinjevold (1999) commented on the lack of empirical studies and impact evaluations in many CPTD and school improvement projects. In 2003, these researchers proposed a multi-level intervention model to improve quality through systemic interventions (Taylor, Muller and Vinjevold, 2003). Effective curriculum delivery was placed at the centre of the model, with the emphasis on conceptual learning and a set of 42 indicators was proposed for monitoring and supporting development in four areas: social organisation of the school, language learning and proficiency, curriculum and pedagogy, and assessment.

The Rural Education Project (REP, 2007–2008) targeted teachers in 38 Western Cape schools, combining two years' part-time study towards an

Advanced Certificate in Education (ACE) with classroom support by a specialist coach. Following Lerman (1998), Gamble and Kühne (2010) applied the analytic device of a series of conceptual lenses to examine the project's outcomes. The researchers applied five lenses in their analysis: internal accountability in schools, interpretation of diagnostic test results, "instructional practice as a shared public good", knowledge-based teaching and "systemic synchronicity" (pp.17–18). They the authors adopted the term "proceduralised process", also applied by Taylor *et al.* (2003), to describe superficial or administrative ways in which many teachers interpreted and applied new knowledge. In our subsequent CPTD work, including the study on which we report here, we have found the concept of 'proceduralised process' valuable for distinguishing between teaching and curriculum management practices creating meaningful learning opportunities for learners from those demonstrating compliance with minimum departmental requirements, monitored by district officials and school management.

Adler and Reed's (2002) findings from teachers' take-up of CPTD are informative for CPTD initiatives in SA. Between 1996 and 1999, they conducted a three-year longitudinal study of 25 teachers participating in the University of the Witwatersrand's Further Diploma in Education (FDE) programme. Participants were from 25 schools in Gauteng and the former Northern Province and taught Mathematics, Science or English. It was striking that their main findings pertained to the effects of language on teachers' efforts to incorporate new knowledge, into their practice. They found increased use of code-switching by teachers and learners in most classrooms. More code-switching by Mathematics and Science teachers than English Language teachers, was seen. Adler and Reed attributed this to greater focus on modelling correct English use in primary Language classes. Teachers' use of codeswitching was "intentional but dilemma-filled" (p.50) When Outcomes-Based Education (Curriculum 2005) was introduced there was widespread take-up of cooperative learning techniques such as group work creating more opportunities for "learning from talk" (p.50), i.e. learners talking about the work in their everyday language. However, most teachers did not facilitate the shift to "learning to talk" (p.50) i.e. challenging learners to express their learning in formal, subject-specific language. Although the above-mentioned patterns were common to all teachers, there were significant differences between teachers working in different contexts, at different levels (grades and phases) and subjects.

Concerning methodology, the researchers endorsed the value of "fuzzy generalisations" (p.48) proposed by Bassey (1999), as a cost-effective approach to documenting findings from qualitative studies of CPTD programmes. Bassey was trying to address the context-bound nature of CPTD. He observed that findings from CPTD studies are often too specific to be applied in different contexts and proposed the term "fuzzy generalisations" for qualified statements about findings, which acknowledge uncertainties in the research. By extrapolating series of "fuzzy generalisations" from research about CPTD, it is possible to build an increasingly informed and coherent picture of what works and what doesn't.

The Gauteng Primary Language and Mathematics Strategy (GPLMS) was designed as a large-scale multi-dimensional intervention which would provide extended in-depth CPTD to primary school teachers. Between 2011 and 2014, it supported teachers in about 830 schools in 15 districts in Gauteng. The model focused on three overlapping components: pre-designed daily lesson plans for teachers, high-quality learning and teaching materials and individual instructional coaching of teachers. The National Education Evaluation and Development Unit (NEEDU, 2013a) identified the GPLMS as one of only two large-scale CPTD projects in the country that promised to bring about significant, lasting improvement in schooling. Fleisch and Schöer (2014) reported tentative findings that the project had demonstrated modest impact in learner achievement.[3] Despite these positive findings, the GPLMS was terminated midway in 2014, reportedly because it had proven unaffordable.

The WCED's Literacy and Numeracy Intervention was planned as an eight-year CPTD project, targeting Language and Mathematics teachers in all primary schools in the province. The Intervention, introduced in 2009, provided block training and school-focused follow-up support to teachers in successive cohorts of approximately 250 schools in two-year phases. This project also received a positive review by NEEDU (2013a). The WCED terminated the Intervention in 2015, reportedly because its activities were no longer aligned with the Department's strategic objectives.

Findings from recent large-scale empirical research projects have confirmed the range and scope of challenges facing those aiming to improve the quality of teaching and learning in SA's schools (NEEDU, 2013 a and 2013b; Taylor

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[3] The authors avoided making strong claims about the project's effectiveness due to limitations in the research design.

et al., 2012; Venkat and Spaull, 2015). They underscored the importance and urgency of effective, targeted CPTD programmes. NEEDU (2013b) identified a shortage of subject advisors (SAs) able to bring all teachers' practice up to the necessary standard for effective CAPS implementation. The authors argue that school-based CPTD is the most promising alternative, but acknowledge a problem – that teachers 'don't know what they don't know', which places a question mark over how and by whom teachers' development needs would be identified.

The National School Effectiveness Study followed the academic progress of a cohort of 8 383 learners in 268 schools in eight provinces[4] from 2007 to 2009 (Taylor, Van der Berg and Mabogoane, 2012). The researchers found that teachers' and learners' proficiency in the language of learning and teaching (LoLT) was a determining influence on teaching and learning and they reaffirmed that teachers' subject knowledge remains a key priority for CPTD in SA. They granted that training which focuses on teaching methods could bring about short-term efficiency gains, but predicted a low ceiling on these effects. Investment in in-depth subject-focused professional development was identified as critical. The authors cited CTLI block release courses as some of "the few programmes that have been shown to impact significantly on teacher knowledge and learner performance" (Taylor *et al*., 2012, p.24). Two consecutive external evaluations of CTLI courses had shown substantial improvement in the subject knowledge of teachers who attended training (De Chaisemartin, 2010; Meyer and Abel, 2013).

The National Education Collaboration Trust (NECT, 2013) is a large-scale public-private partnership initiative which has been designed as a multi-year intervention, targeting specific districts in five rural provinces of SA. The programme will consist of various components, including CPTD in target subjects such as Language and Mathematics, school development, district support and parent/community involvement.

Spaull (2015) argues that there is an urgent need for "developing a comprehensive plan for meaningful teacher development". Deciding what should comprise such a plan is the biggest challenge. The very different approaches taken in recent projects such as the GPMLS, the WCED's LitNum

[4] Gauteng was omitted from the study as the research time-frames conflicted with dates allocated for administration of provincial tests.

intervention and the NECT initiative, show there is no consensus on the most effective form of CPTD to improve the quality of education in SA's schools.

The Department of Basic Education's Action plan to 2019 (DBE, 2015) constitutes a comprehensive education development plan within the government's National Development Plan. Alongside related areas such as improving functionality of underperforming schools, the plan identifies CPTD as a high priority for state investment and intervention over the next five years, with a particular focus on four aspects:

- Standardising and strengthening curriculum messages to teachers
- Creating a stronger enabling framework for teacher-initiated professional development activities, particularly professional learning communities.
- Promoting more opportunities for teachers to attend external in-service training of good quality, focusing on subject knowledge and teaching methodology
- Increasing teachers' access and educational use of digital resources.

The following insights from the above-mentioned SA literature are valuable for further work in the CPTD field:

- "Fuzzy generalisations" (Adler and Reed, 2002) are a useful methodology to develop our collective understanding of CPTD through qualitative research such as case studies.
- "Proceduralised process" (Gamble and Kühne, 2010) is a helpful concept for understanding superficial take-up of CPTD by teachers and schools.
- Teachers' and learners' competence in the LoLT – particularly English - require priority intervention to ensure teacher take-up of CPTD.
- School-focused CPTD interventions seem to hold most promise in the SA context.
- Coaching by specialists is not an affordable teacher development strategy for the public school system.

- There are insufficient SAs in the system to provide CPTD on the scale and at the depth required in SA schools. Peer coaching is the most viable option, but identifying teachers' development needs would be a challenge, as teachers and principals "don't know what they don't know" (NEEDU, 2013b).

- To address the CPTD challenges that research has identified in the SA school system, investment in in-depth subject-focused professional development will be critical.

It is evident that the DBE action plan has been informed by several of these research insights, e.g. the emphases on teachers' subject knowledge, the quality of external training and promotion of school-based teacher development. However, the plan specifies only priorities and indicators for monitoring implementation by provinces. By implication, the various provinces will have the freedom to design their own CPTD interventions within these broad guidelines. At this stage, it is not clear whether the DBE will prescribe or recommend that specific approaches adopted in teacher development programmes should take research findings such as those listed above into account to improve prospects for sustained impact.

Research design

The data that is presented here was obtained through case study research which drew upon multiple data sources. The analysis was framed by the hierarchy of INSET outcomes proposed by Harland and Kinder (1997).

Sample and methodology

We report on the take-up of CTLI training by five of 18 teachers working in four of the eight schools. The case studies (2011–2012), were designed to document teachers' take-up of new knowledge and skills from CTLI courses. The research covered teachers' immediate knowledge gains assessed by pre- and post-tests, implementation following teachers' return to school after training, as well as evidence of sustained take-up after one year. We also wanted to explore the relationship between dynamics in schools and the impact of CTLI training in more depth. Although the CTLI data presented

here was collected three years ago, the findings we report here are still relevant, as we grapple with the same issues today.

Apart from selecting one school from each district, the eight schools were broadly representative of different types of schools in terms of their size, the communities they serve (e.g. location, socio-economic status), the language profile of the learners and how frequently their teachers had attended CTLI courses over the years. Additional data was collected about the overall functioning of the school, curriculum management, teachers' professional development and district support. In both 2011 and 2012, the researchers observed a lesson taught by each of the 18 teachers and analysed all written work completed by two learners in each teacher's class during the first two terms of each year. Each teacher completed a questionnaire. A structured interview was conducted with the principals in both years. During the two research visits, the researchers conducted school observations, using structured observation schedules and analysed the School Improvement Plan (SIP), LTSM inventories, teacher registers and timetables. In 2011, semi-structured interviews were conducted with one or two members of the circuit team responsible for each school.

Theoretical framework

The hierarchy of INSET outcomes, put forward by Harland and Kinder (1997), was applied to analyse the data from 18 teachers who worked in eight case study schools. This hierarchy is represented in Figure 1, with one adaptation: the impact of INSET programmes is considered at the level of observable classroom practice and as measured learner achievement. The Harland and Kinder framework proved useful in previous research projects, because it provided unambiguous criteria for assessing impact of training and other professional development on teachers' work. Its key strength is its hierarchical nature that allows for impact of teacher training to be assessed incrementally. It makes specific reference to the institutional context of the teacher, whereas other frameworks focus mainly on the individual teacher. Nearly all items in the diagram (Figure 1) are self-explanatory, but 'value congruence' and 'individuated code of practice' require some clarification. These refer to teachers' personalised versions of the curriculum and teaching methods that correspond to the INSET providers' messages about 'good practice'. Harland and Kinder (1997) differentiated between three orders of

impact of teacher development programmes which teachers go through during their professional development. They noted that the more outcomes teachers attain, the greater the likelihood of impact on teaching and learning quality.

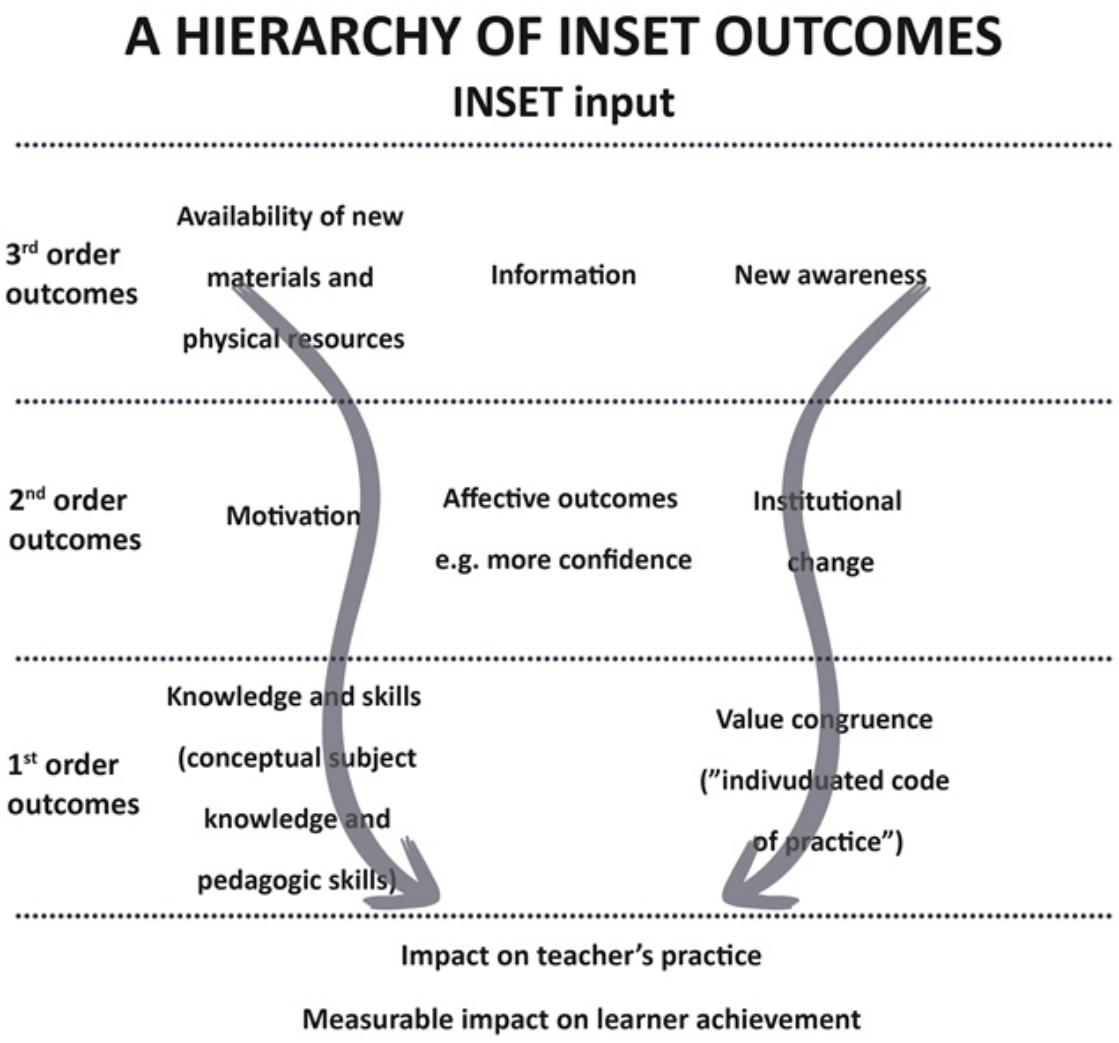

Figure 1: A hierarchy of INSET outcomes, adapted from Harland and Kinder (1997)

The following criteria were used to rate the professional development of 18 teachers in eight case study schools according to Harland and Kinder's hierarchy of INSET outcomes (the criteria are marked with asterisks to indicate their weighting in rating teachers' progress):

- Immediate knowledge gains, indicated by post-test score compared to group average*
- Volume of work in learners'books in 2012, compared to 2011*

- Increased coverage of curriculum content areas that were not covered/inadequately covered in 2011***
- Evidence of improved teaching of concepts and skills, and/or implementation of teaching methods****
- Quality of teachers'marking, and written feedback to learners***
- Evidence of differentiation in feedback to strong and weak learners, and its frequency**
- New knowledge or teaching methods shared with colleagues in the grade/phase/school**
- Evidence of mentoring and/or coaching of colleagues at school or in the district***

Analysis of the data about teachers' progress

Table 1 below gives a summary of the outcome levels the 18 teachers attained according to our analysis, having applied the above-mentioned criteria and weightings.

Table 1: Levels of professional development attained by teachers in case study schools, following Harland and Kinder (1997)

LEVELS OF PROFESSIONAL DEVELOPMENT ATTAINED BY TEACHERS IN CASE STUDY SCHOOLS Following Harland and Kinder (1997)			
	1st order outcomes	2nd order outcomes	3rd order outcomes
Placement of teachers	G16	A38 A39 C40 E13 F37 F41 G42	A4 B15 B28 B46 D10 D17 E21 E31 H22 H45
Total number of teachers	1	7	10

Vignettes of five teachers

For the purposes of this paper, vignettes of five teachers are presented: the teacher who was judged to have achieved first order outcomes, two teachers who achieved second order outcomes and two teachers who achieved third order outcomes. These teachers were selected because they represented particular types in terms of diverse training needs, different responses to training and the influence of different school contexts

The teacher who achieved first order outcomes

Teacher G16 was the only teacher of the 18 rated as having achieved first order outcomes in terms of implementing knowledge she had learnt at CTLI. The data indicated that she was a dedicated and fairly competent teacher, and

the CTLI IP English Home Language course helped her to improve her practice further. In 2012, she made adjustments to ensure more balanced coverage of the curriculum, emphasising comprehension and writing exercises. She applied methods and techniques learnt on the course and used a range of LTSM and scaffolding techniques to support learning. Some choral answers were observed in her lesson in 2012, but her questioning techniques were sophisticated. She challenged learners to explain answers and allowed time to absorb new concepts before moving on. Her most persistent weakness was inconsistency in the quality of marking. Less than half of weak learners' written work was marked with little or no comment, whereas most of the strong learners' books were marked with regular, positive comments.

Although relatively isolated in a rural district, School G was a relatively well-functioning school where curriculum management was prioritised by SMT. Apart from regular monitoring, which was the order of the day in all case study schools, the school had taken some significant steps to implement its literacy and numeracy strategy. In 2012 the time-table was adjusted to effect a shift from class teaching to subject teaching[5] in Languages and Mathematics from Grade 4, and in the same year the school library was established. The school was also experiencing some of the challenges observed in other schools, but these difficulties did not did appear to affect the work of Teacher G16 negatively. In particular, there was a mismatch between the mother tongue of Xhosa-speaking learners and the LoLT of the school (Afrikaans); however the 6% of affected learners were mostly in the FP, so the problem did not (yet) affect the classes of this teacher, who was teaching in the IP.

The principal indicated that Teacher G16 returned from the training full of enthusiasm for teaching and for sharing benefits from the CTLI course with her colleagues. Having done a presentation – in English - during the course, she presented a demonstration lesson at the school, based on CAPS. Some of her achievements attracted recognition from the subject head and in general, strong collegial and managerial support was evident in the school. Two teachers in other districts had kept in touch since the CTLI training and shared methods and ideas. In 2011, the school received six visits from the FP and IP SAs, who met teachers, supported them in class and checked files and

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5 'Class teaching' involves a teacher taking one class for all subjects – general practice in the FP, 'subject teaching' refers to teachers teaching certain subjects to several classes in a grade or phase, typically in the IP and SP.

documents. However, Teacher G16 did not mention having received classroom support from a subject advisor (SA). The principal reported that SA's visits mostly focused on monitoring – checking teachers' files and other documents. In an interview, the relevant SA also mentioned long distances and a lack of staff as challenges facing this rural circuit.

Two teachers who achieved second order outcomes

Teacher C40 attended the IP Mathematics course in 2011. Her post-test score showed a marked increase, almost doubling from 27.3% in the pre-test (the class average was 40.2%) to 63.6% (the class average increased to 55.8%) – evidence of substantial knowledge gains on the course. She reported that the practical approach to measurement and the division/multiplication methods helped her build a strong knowledge base. She noted some content areas were less well covered than others; and that her peers had contributed significantly to her learning. When she returned to school, she shared worksheets she had received with IP colleagues. She had regular contact with a fellow participant at another school, with whom she shared ideas on lessons and assessment tasks.

In her Grade 5 lesson (2011), this teacher did not use any planned resources. Learners were not allowed any discussion and the researcher reported that little teaching and learning took place. Choral answers were prevalent. However, in 2012 the teacher modelled correct answers, and used textbooks which were systematically referenced in lesson plans. Assessment activities in lesson plans met the expected outcomes of lessons. In 2011 DBE workbooks were only for homework, which was given fairly regularly, but unmarked; in 2012 minimal, controlled homework was given and DBE workbooks were used more effectively. The volume of work in learners' books more than doubled in 2012. There was a shift from numerous half-page exercises to more full pages of written work. Curriculum coverage was more balanced with more than twice as many numbers, operations and relationships exercises compared to 2011. However, fractions and some of the basic operations, particularly division, were still poorly covered.

There was a marked improvement in teacher-learner interaction with more learners answering questions and giving explanations. Although learners still often answered in unison, there were many more instances of learners asking

questions about the lesson and actively participating. The teacher encouraged learners to respond and modeled correct responses. Her method of teaching mental mathematics had improved and covered a more extensive range. In 2011, the teacher asked learners to illustrate quick operations on the chalkboard using only her methods. In 2012, she allowed learners more creativity in the lesson. The teacher marked all work and gave questions for follow-up. Informal corrective feedback was given to learners as well as comments to encourage struggling learners.

Teacher E13, the FP HOD, rated the Roles and Responsibilities of HODs course as excellent and said it had specifically benefitted her curriculum planning and time management. The teacher's school management portfolios had changed very little over the two years of the study. In 2011, it was IQMS, LitNum, netball and music. In 2012, it included IQMS, head of FP, non-teaching staff, netball and the HIV programme. This relative continuity in her work allocation allowed her to develop her knowledge and skills in certain areas of school and curriculum management over time. As IQMS coordinator, she was also potentially in an influential position and had the opportunity to direct teacher development at the school.

On her return to school, she shared her learnings with the other FP teachers, focusing on lesson plans, class diversity, class visits, lesson observations and control of work. However, one year after the training, she had not yet conducted any lesson observations. In her own teaching, she referred to the CTLI training materials and found them very useful. Initially, she kept in contact and shared ideas with others from the course, but this was not sustained. She reported that the focus at quarterly FP department meetings was on improving learner results. The school's part-time LSEN teacher provided input and extra lessons were offered on weekends and school holidays. Although recent documentary evidence showed improvements in meeting structure and minute-taking, agenda items were of a general nature with little reference to curriculum. The teacher reported on a new curriculum management system such as a year plan for the phase and checklists. However teachers who were interviewed were not familiar with these documents, e.g. they had seen no year planner by September 2012. As phase head, the HOD moderated exam papers and gave feedback. Files were checked at the start of each term and demonstration lessons given. This was done in a helpful and supportive manner. Control of teachers' work was still a concern. Teachers' late submission of work remained a problem and a culture of non-compliance persisted, despite reports that she was an excellent manager and easy to get

along with. Although there had been no support or encouragement from the district, she reported a strong interest in attending further workshops and courses.

Several second order changes were evident in this teacher's work, one year after she attended the CTLI HOD course: her enduring motivation and confidence, as well as her efforts to bring about institutional changes in administration and management of the FP department.

Two teachers who achieved third order outcomes

Teacher B28 attended the FP English Home Language course. She taught Grade 1 for the first time in 2011 and she appeared to be lacking in confidence. Class size (39), language barriers and disparity in the ability levels of learners were noted as difficulties. She found the course valuable, but only achieved small immediate gains in subject knowledge (her pre-test score was below average, and only slightly above the score she achieved in the post-test).

The teacher used course notes regularly to guide her teaching of reading. Lesson planning and structure had improved, but learner interaction and involvement remained poor. There was little mediation or explanation during the observations and weaker learners were not supported. Discipline was poor and the lesson that was observed in 2012 was unstructured. Learner engagement in the content had decreased since 2011 and monosyllabic and choral answers increased. Quality and variety of LTSM declined with worksheets, readers and story books dominating. The observations suggested that the teacher's post-CTLI enthusiasm had declined by 2012 and teaching was becoming increasingly procedural. In the 2012 interview she stated that she felt powerless and lacking in support despite having mentioned that she had received support from teachers and parents, as well as management.

The volume of written work completed by this teacher's class was well above the group average in both 2011 and 2012. In Language, curriculum coverage leaned more towards phonics and words (71% of learners' written work), with coverage of writing still inadequate at 29%. The teacher marked work regularly, with minimal comment and input, and no differentiation in the feedback provided to strong and weak learners. DBE workbooks were used

for homework and checked by parents, but were not marked or signed by the teacher.

Third order outcomes evident in this teacher's work were regular reference to the CTLI course materials and better lesson plans. However, she had lost the renewed enthusiasm she had gained from the training and she had failed to implement new methods to manage her class more effectively and to create opportunities for learners to participate actively in lessons.

IP Mathematics **Teacher E31** was impressed with the knowledge and competence of the CTLI presenters and rated the course highly. She achieved 13.6% in the pre-test (the group average was 32.1%) and her post-test score of 22.7% showed some knowledge gain, but lower than the class average of 49.1%. She reported that the course enabled her to improve her content knowledge, but that she needed further support with fractions. After the course she gave feedback to colleagues in her phase, specifically on 2D shapes and 3D figures. She kept in contact with others who completed the course to share ideas and methods. She had not received district support since attending the course.

She tried to involve the parents in the supervision of homework, using the DBE workbook about once a month. This was not very successful as most parents were uncooperative. Learners' books showed that less work was done in 2012 than 2011, although the percentage of written exercises covering different content areas remained constant. Numbers, operations and relationships made up 80% of the work covered in the first half of the year, as in 2011. The other content areas received little attention. In 2012, learners used textbooks more than half of the time, but not effectively. Assessment appeared unplanned, and the lesson was inconclusive and not recorded in any form. There was evidence of control marking and there were some remarks in the stronger learner's book, but none for weaker learner's. In 2011 both the stronger and weaker learners' books contained teacher's comments.

Discussion of findings

Analysis of the five vignettes cast some light on individual and institutional factors that hindered or promoted the teachers' professional development.

Different levels of outcomes achieved by teachers

It is striking that Teacher G16 achieved the distinction of having been rated most successful out of the sample of 18 teachers, despite having performed very poorly on both the pre-and post-tests. There is no straightforward explanation for this paradox. She demonstrated poor subject knowledge prior to the course and no immediate knowledge gains by the end of it, but aspects of her teaching practice improved markedly over the subsequent year. One possibility is that she needed time to assimilate the new knowledge she had learnt on the course; her limited proficiency in English could be another. Although she wrote both the pre- and post-tests in Afrikaans, the course was aimed at English Home Language teachers and was presented entirely in English, and she teaches Afrikaans Home Language.

All teachers rated as achieving second order outcomes, demonstrated 'affective outcomes', such as renewed motivation and improved confidence. These self-reported outcomes were largely confirmed in the empirical data collected from other sources such as perusal of learners' written work and lesson observations. Teachers in this group were implementing new knowledge and teaching methods they had learnt on the courses and most had made adjustments ensuring more balanced coverage of the curriculum. These improvements were sustained for at least a year after training, suggesting they would maintain these good practices in future. However, after the two-year study, it was still too early to have certainty about their future performance.

Teachers who attained third order outcomes also returned to school with renewed enthusiasm and increased confidence in teaching their subjects. However, these claims of increased professional competence and confidence could not be substantiated. Lesson observations and perusal of learners' books in 2012 showed serious shortcomings in teaching and/or their learners' written work. In some cases no improvement was seen since 2011 and in others, teachers' practice had deteriorated. A limited curriculum, geared to the lowest common denominator rather than the grade level required, and a lack of cohesion or progression in lessons pointed towards poor planning which was not identified through the school-level or district-level monitoring processes.

Teacher E31 attended the IP Mathematics course, which the evaluation team rated as outstanding, and the best of the five CTLI curriculum courses that

were evaluated, she achieved only third order outcomes. One possible contributing factor seems to have been her own limited prior subject knowledge. Although she reported increased confidence, she avoided teaching most content areas (apart from Number, operations and relationships), as she had done before.

The relationship between teacher development and school management

The research identified several links between school functioning and teachers' practice that appeared to support or undermine CPTD. For example, school-level factors may have contributed to Teacher G16's progress. Despite some problems, School G appeared to be a well-managed school: curriculum management was efficient with a strong culture of collegial and managerial support. On the other hand, the efforts of some of teachers rated as having attained second and third order outcomes, appeared to be hamstrung by conditions in the schools in which they work. The evidence showed that the efforts of some, such as HOD E13, were hindered by sub-standard performance by others at school.

Links between teachers' knowledge and their work allocation

School managers differed in the extent to which they allowed or encouraged teachers to develop specialised knowledge in the subjects they teach. School G was one of two schools in the study that changed from class teaching to subject teaching in the IP and SP in 2011–2012, acting on the advice of district officials. The intention was to make better use of teachers' specialist knowledge (and enthusiasm) – especially in challenging subjects like Mathematics and Natural Science.

The disjuncture between the LoLT and learners' mother tongue

At several of the schools, many learners do not speak the LoLT as their mother tongue. This presents formidable barriers to reading and learning. School B was the most striking example, but this problem was also present in School G. At School B there had been a gradual demographic shift in the learner population, so 30% of learners – 50% of Grade 1s, the grade taught by Teacher B28 – were Xhosa speakers learning through the medium of English

Home Language. Despite this growing problem, the school had not developed any useful measures to help learners address this barrier. Halfway through 2012, the SMT started to discuss possible solutions, such as introducing a Xhosa stream in the FP.

Schools' approaches to professional development of teachers

In most case study schools, CTLI courses constituted the main or only teacher development strategy. Some principals, like at School G, recognised that teachers returned with new enthusiasm and ideas for improvement, but they were not sure that CTLI training was making a real difference. On the other hand, the principals of Schools B and E seemed to assume that increased motivation on the part of teachers after CTLI was evidence that their teaching practice would improve. The evidence did not support this assumption. In three of the four schools, the data collected indicated that CTLI training had little or no impact on most teachers' practice.

Of the five teachers in this study, only Teacher G16 participated in substantive school-based INSET activities. In addition to reporting back at meetings and sharing new knowledge with colleagues, she presented a demonstration lesson, based on CAPS to other teachers in the phase at school. The other teachers reported back at subject meetings and Teachers C40 and E31 passed on some specific ideas and worksheets to colleagues. In Schools B, C and E, it was unlikely that new knowledge would be embedded systematically in the practice of teachers across subjects and phases. The knowledge base in the institution would not grow, even if individual teachers benefited from training.

Links between resource management and teaching

Availability of appropriate and sufficient resources for teaching and learning might contribute to teachers' ability to implement new knowledge learnt in their classrooms. The teachers in the study, rated as achieving second order outcomes, all had access to LTSM and made effective use of these in their lessons. It is noteworthy that the leadership of School G, where the two teachers in the study attained second and first order outcomes respectively, demonstrated significant commitment to provision of resources to support strategies to improve literacy and numeracy. In 2011, the establishment of a school library was prioritised in the SIP and teachers undertook the

preparatory work to qualify for WCED allocations of infrastructure and reading materials.

Conversely, several teachers who attained third order outcomes reported that their teaching was hampered by a lack of sufficient LTSM. For example, there was evidence of mismanagement of resources at School E: unopened boxes of textbooks were seen in a classroom in the third quarter of the year, in spite of obvious textbook shortages.

Effective management of classroom resources is a related but separate aspect and can impact significantly on the quality of teaching and learning. Instances were noted where sufficient and appropriate LTSM were available, but teachers lacked the knowledge and/or experience to utilise these effectively. For example, Teacher E31 had sufficient Mathematics textbooks available for use in class, but they were not used effectively to explain the concept being taught nor were learners given an opportunity to engage meaningfully with the concept in order to attain the outcomes set for the lesson.

District support

Apart from the complaint about declining district support for the FP at School B, the principals and teachers at all the schools reported adequate support from district officials. However, the main purpose of SA's visits was monitoring (checking teachers' files and documentation) rather than training, supporting or mentoring. None of the 18 teachers received follow-up support from district officials after they had completed their CTLI courses. A partial exception was Teacher C40, who reported the valuable support from the Mathematics SA in 2012. He gave her and her colleagues some guidance in the design of formal assessment tasks and provided standardised Mathematics question papers for all IP and SP teachers in the circuit for the June examinations. The same teacher also reported having attended a Mathematics course in the district earlier in 2012.

The systemic test results and external accountability pressures on teachers and schools

None of the five teachers indicated that they had personally engaged with the results their schools' learners had achieved in WCED systemic tests. However, Schools C, E and G were implementing stricter monitoring of teachers' work in response to pressures associated with these tests. At Schools B and E, teachers offered extra lessons for Grade 3 and Grade 6 learners after school or on Saturdays in 2012 to prepare for the tests, written every November.

Concluding remarks

The analysis of data from the five teacher vignettes led to some sobering insights, which resonate with findings from other South African studies cited earlier (Adler and Reed, 2002; NEEDU, 2013a and 2013b; Taylor *et al.*, 2012). The five teachers, all from underprivileged schools, clearly benefitted from the CTLI training, although to varying degrees. Two of the five teachers (Teachers G16 and C40) left training energised by new and deeper understanding of concepts and skills in their subjects. By 2012, these teachers had succeeded in many of their efforts to move away proceduralised practice, e.g. eradicating choral responses in their classes and restricting learners to prescribed methods for solving problems in Mathematics. Both were able to implement a range of new scaffolding methods and techniques to create opportunities for learners to 'learn to talk' about the concepts taught. There was also a significant improvement in Teacher C40's design of assessment tasks and the quality and frequency of corrective feedback given to learners.

By contrast, Teachers B28 and E31 whose prior knowledge in the subject/phase was poor, benefitted little from training. These teachers achieved third order outcomes only, and training made little difference to their practice. They could not translate what they had learned on the courses into well-structured lessons, they continued to demand limited written work from their learners and they gave little corrective feedback, especially to struggling learners. Teacher E31 was one of several teachers in the full sample whose post-test scores in Mathematics remained low, suggesting their prior subject knowledge did not provide an adequate basis for engaging with new concepts on the course. Particularly in Mathematics, there appears to be a need for

differentiated courses, for example, a foundational course in each of the phases to cater for teachers without any formal training or inadequate pre-service training, in teaching the subject.

In different ways, the teacher vignettes highlighted the importance of follow-up support after training to help teachers embed new knowledge and practice in their practice. Notably, the three teachers who had been rated as having achieved first or second order outcomes found or sought out further sources of professional support to help them consolidate and extend their knowledge. They kept contact with teachers who attended the CTLI course with them (even teachers in other districts) or worked with colleagues in their own schools and/or neighbouring schools. Only one of the five teachers (Teacher C40) specifically mentioned that she had received support from a SA after the training, which she found valuable. The SA responsible for School G, acknowledged that she visits schools in the circuit infrequently, mainly due to the distances she has to travel. One teacher who achieved third order outcomes (Teacher B28) complained that she felt unsupported, despite support from the school management and parents and the other (Teacher E31) mentioned that she had received no support from the district. These findings appear consistent with NEEDU's observation (NEEDU, 2013b) that the numbers of SAs in the system are insufficient to provide the support at the levels and frequency needed by teachers.

The experiences of teachers from three of the four schools in the study suggest school-based INSET is not practiced at most underperforming schools. Arguably, a policy initiative to promote school-based INSET and peer coaching as the mainstay of CPTD in South Africa, as NEEDU has proposed (NEEDU, 2013a), would have to include school development interventions of sufficient depth to shift schools from 'minimalist', compliance-based curriculum management to more developmental and professional cultures.

As in other SA studies, we found the mismatch between the LoLT and learners' mother tongue to be a major impediment to effective teaching. In this set of vignettes, the matter stood out as a challenge not only for individual teachers, but for schools. If schools do not address demographic shifts in the intake of learners speaking a home language other than the LoLT, the problem can escalate over a few years, as was evident in School B where teacher B28, expressed a sense of exasperation and hopelessness despite the support she received from management and parents.

Teacher E13 tried to apply new knowledge she had learned on the HOD course in her FP department, but with little success. This teacher's experience suggested that training in management skills, dissociated from subject-focused CPTD (or strong subject content knowledge prior to training) might achieve no more than minimal efficiency gains in curriculum management. The resistance she faced from colleagues - despite their declared respect and personal regard for her – also indicated that a culture of compliance and minimalist attitudes are deeply ingrained in the culture of the school. Unless uneven standards of professional commitment are addressed by managers of schools such as School E, the persistent malaise would undermine the enthusiasm and renewed professional commitment of returning teachers after training.

Although our findings were drawn from a limited sample, they underscore the importance of taking the complexities of CPTD into account when designing teacher development programmes. The experiences of the five teachers discussed here suggest that block-release training without ongoing follow-up support and targeted school development interventions, is inadequate to bring about real and lasting improvements in teaching and learning. The least costly option might not be the most cost-effective.

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