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Editorial - The investigation of pedagogy

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Wally Morrow is still with us, remembered this time through Ursula Hoadley's excellent article "Learning to fly". Hoadley uses his thinking to guide us into a deeper understanding of why the current reform process in South African education is struggling to make headway. Here is one of Morrow's favourite analogies, as described by Shalem and Slonimsky:

> Let's take an example of a teacher of someone who wants to become a pilot. A good teacher of piloting has in the back of his mind an understanding of what is involved in flying an aeroplane. In the practice of teaching [the teacher] says, 'Ok, the first thing we need is to teach how to do this and how to do that' . . . or something like that. You can contrast such a teacher of piloting from a teacher of piloting who in a sense does not understand what the bigger thing is, but is following a book which says in lesson one you need to do this and in lesson two you need to do that and it is never properly tied together (Shalem and Slonimsky, 2010b, p.21).

If you are going to learn to fly, be taught by someone who both knows what flying is and how to teach it, someone who can structure the lessons over time to get you to that point; rather than by someone who can teach you each part without actually knowing what the whole is. Simple and wise.[1]

Hoadley uses this nugget as her key insight into why our current curriculum reform process (CAPS) is not making the hoped for gains. Her article has all the makings of a detective story, and tells a tale of missed leads, broken hypotheses, and lost hope, until, with the help of other intrepid investigators, she stumbles on a key issue that illuminates the failure. As with all good detective stories, she sets the scene with a gritty account of research that seems to go nowhere, and it all revolves around the interrogation of Pedagogy.

It starts with the SPADE investigation into 14 schools in poor communities that are somehow doing a little better than their peers. Ursula Hoadley and her

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[1] Joe Muller makes a telling observation on the flying a plane analogy to learning specialised school subjects – why is it that philosophers always pick a manual skill, even if it is a pretty complex one? At least it makes a change from the old 'riding a bike' trope, but I don't know how appropriate this is as an analogy for schoolwork (personal communication).

intrepid assistant, Jaamia Galant, suspect that the reason for the difference could be the way Pedagogy happens in the classroom. It's a reasonable hunch – after all – that's the inner sanctum where learning goes down. To confirm their hunch they spend time in the classrooms collecting evidence and interview the teachers, working out which lessons are good and bad. Its gritty work – 46 teachers, over 120 lessons – and what do they find? Not much. The lessons are mostly in-between, not brilliant, not awful. In the heart of the school where the actual teaching and learning takes place, a link between Pedagogy and performance cannot be found. The problem is that Pedagogy is a slippery and complex suspect. Earlier investigations of pedagogy had also failed to find a link (Taylor, Muller & Vinjevold, 2003; Carnoy, Chisholm & Chilisa, 2012) but Hoadley and Galant refused to give up. They checked with older experts who knew Pedagogy well (like Spillane, Alexander and Muller) and found out that previous investigations had not really been able to interview Pedagogy properly. Further discussions with key expert witnesses on how pedagogy works from the Wits Branch (Hamsa Venkat, Yael Shalem, and Lynne Slonimsky AKA Slo) revealed that Pedagogy only discloses itself in the longer term – the secret lies in how the lessons link together, not in the lessons themselves. And with that insight the case broke open. Going back to the best lessons from the 14 schools, it became clear that, even though some of the lessons were reasonably good, there was no bigger linking of the lessons to the overriding subject, there was no stitching of the lessons over a longer period, no building upwards to a greater plan – there was no understanding of flying whilst teaching the learners to fly. And that is why learners remained on the ground, flapping their arms in flying sorts of ways. Writing up the case afterwards, Hoadley tried to ensure other detectives don't make the same mistake, so she, along with her long time mentor, Muller, formulated a succinct rule for other experts to follow – evaluative criteria need to be regulated by evaluative rules – understand that and you can separate a pedagogy of form from a pedagogy of substance. But to get what that expert advice means you will need to read the case notes.

Bongani Bantwini, from the North West branch, also investigated Pedagogy in the Eastern Cape, specifically how Science was taught in the intermediate phase. He gathered single lesson observations from 22 classrooms in Grades 4, 5 and 6. He found that Pedagogy was up to similar tricks, with the lessons mostly boring, confusing, unchallenging, and isolated from the learner lives, resulting in learners being disinterested and unmotivated. The UCT and North West branches should share their case notes on pedagogy, as I think North West could learn much from how the SPADE project selected their schools,

gathered data on Pedagogy, analysed the data, theorised Pedagogy, and collaborated with other branches on the characteristics of Pedagogy.

In a town not far away from the UCT branch, another group of detectives were also investigating Pedagogy. Famed for controversial and powerful personalities and positions, they pursued Pedagogy in various ways – using African and Islamic philosophies, post modernism, and a whole smorgasbord of other theorists. One favourite path of pursuit was to enter into dialogue with Pedagogy and see what would emerge from a more cooperative and community oriented approach. One of their Phd students suggested that a nourishing of Pedagogy was needed by getting teachers together into professional learning communities (PLCs) so that they could talk and learn from each other, as well as engage with student needs. This would enrich pedagogy; allow it to flourish once more in a socially just way that would meaningfully engage all students in productive learning. Jennifer wrote up an account of her two-year engagement with a small group of teachers in PLCs, and showed how difficult and complex the process was, especially for teachers already habituated in mind, body, and soul to traditional, teacher centred pedagogic practices. Turns out that Pedagogy, when absorbed in hard and strong forms, is very difficult to shake. The Alcoholics Anonymous rules apply – engage with Pedagogy honestly and cooperatively in a learning community and it will release you from its old grip and open you out to new possibilities. Key to this process, as democratic and engaging as it can be, is to have experts able to feed into the process, otherwise all that happens is mediocrity mixed with old and new ideologies wasting everyone's time.

Overcoming memories hardened into habit is one thing – not having the memories another. What can we do with our young, post Apartheid student teachers who do not have memories of Apartheid, whose founding memory is Mandela, not Verwoerd? Deepening our student teachers' understanding of Apartheid could help ensure our future generations do not make the same mistakes we did, but the problem is that the pedagogy of history in most of our schools is shallow, rote, and boring. One way to strengthen pedagogy is through museum visits that get from telling learners black people were mistreated to actual rich and engaging evidence of how it happened. Well-constructed visits to museums like Liliesleaf Farm, Constitution Hill, Apartheid Museum, Mandela House and Hector Pieterson Museum can result in intensive change to how student teachers view History, Apartheid, and citizenship. Students engage with fascinating but complex life histories and artifacts that bring home both the horror of Apartheid, the compromised way

people survived through it, and the mixed triumph of those who fought it. Rather than a simple victory of good over bad overseen by God, students come out with a more complex and nuanced understanding. They come to realise that 'not all white people were cruel…, some were really against the law of apartheid'; that Hector Pieterson was not the only person to die in the Soweto uprising; that 'blacks were against each other'. Students visiting Liliesleaf Farm initially thought they were going on a farming trip, but came back with a deeper insight into where and how our political struggle heroes were conducting the fight and what happened to them. Sarita Ramsaroop shows us how, correctly constructed and prepared for, Museums can be a real ally for Pedagogy in the social justice fight, so long as students are prepared for the exploration and not simply expected to somehow stare and learn.

Across the Indian Ocean, in Sydney, the investigation of Pedagogy had reached an advanced stage, so much so that an institute had been formed, dedicated to its investigation. Called the Legitimation Code Theory Centre for Knowledge Building, it was putting Pedagogy under the microscope, determined to find out the secrets of how it worked and why it was enriching some and impoverishing many. Under the guidance of a ball throwing investigator – Karl Maton – Pedagogy was broken down, analysed, and put together again in wave after wave of analysis. The tools used and findings made on Pedagogy were replicated across the world, even at the UCT branch (where some disapproved of his methods). One researcher – Elizabeth Walton – used LCT to investigate how pre-service teachers were being taught to teach inclusively. Just like Hoadley and Feldman, there was a deep concern to ensure pedagogy was working in a socially just way – but with Walton the focus was on Inclusive Education. Lets test your detective skills and see if you can find anything problematic with these two assessment tasks on Inclusive Education:

A. Go to two of your home schools . . ., collect information about OVCs [orphans and vulnerable children] and learners experiencing barriers

   to learning and development. Discuss the types of barriers experienced and show how the schools tackle these challenges.

B. Identify a real learner in a real classroom who experiences a barrier to learning. Observe the learner in class and decide on the accommodations necessary for the learner. Discuss with the class teacher how you would implement the accommodations as prescribed in the Screening,

Identification, Assessment and Support (SIAS) process. Then write a report . . .

If you were from the Stellies, NMMU, UJ, Pretoria, or Northwest branches, chances are you would not see much wrong and lots right with the questions. They are practical, engaged, and located. But at the Wits, UCT and PMB branches, alarm bells would be ringing. Where is the theory or a context independent body of knowledge? Can the students simply pitch with empathy, care and a form and pass an 'inclusive education' assessment? The students do have to learn some concepts to understand and do 'inclusive education' in the tasks above. These are *differentiated instruction, learner support, contextual disadvantage,* and *social problems* – contextual and practice based concepts. For Walton this is not enough. It weakens the claim that teaching is a profession by making inclusive education personal and commonsensical. It allows Pedagogy to become lazy and dispersed. It weakens the essence of professional development by stripping it of the need to engage with the deeper disciplines of psychology and sociology of education; or with the career stages approach that differentiates inclusive teaching on a scale from novice to expert. In her case report, Walton, using the techniques of the Sydney branch, recommends that, in order to improve pedagogy in inclusive education, semantic gravity should remain strong but semantic density should move from weak to strong. If you want to understand what this recommendation to shift from SG+SD- to SG+SD+ means, then go to read Walton's case notes.

Isolated and far away from everyone else in the sometimes parched hamlet of Grahamstown, pedagogy was also being investigated, using an exotic mixture of tools taken from social realism, critical realism, critical discourse analysis and LCT. This hybrid approach had generated a heady mixture of fear, excitement, incomprehension, and respect amongst novice detectives joining the branch, but with not much else to do in the hamlet, the novices would slowly and dutifully master the investigative techniques. One novice, Amanda Hlengwa, under the protective wing of master detective Sioux McKenna, decided to track Pedagogy down in the Philosophy and Environmental Science departments. Like all the detectives above, Hlengwa and McKenna were determined to find out what socially just impact Pedagogy was enabling. Their focus was on how the Philosophy and Environmental Science departments were teaching service-learning. Service-learning addresses issues of social justice by enabling students to use their disciplinary knowledge to help address deep social needs within an unequal system. It is a general and

generic imperative across all universities in South Africa. Hlengwa set out to find any evidence of a pedagogy of service-learning in the Philosophy Department. It was a brave but futile search. Applied service-learning within the inward looking, singularly focused ivory tower of philosophy, was not to be found. Here is a snippet from an interrogation of 'Peter' – one of the philosophers – on reasons for the absence:

> *We did a lot of analysis about what practical means because, honestly, I don't know what it means.*

Instead of doing service-learning, philosophers contemplated what service-learning meant and argued between themselves what the best meaning was, ensuring that their logic was impeccable, no matter what the imagined scenario. Mostly they ended their long and imaginary debates with the Socratic conclusion that they knew one thing – that they don't know. It was more important to logically dissect and argue about the issue than to have an impact on the issue. In-service learning in this environment was, surprisingly, not to be found.

Shifting over to Environmental Science, Hlengwa found evidence of service-learning everywhere, suspiciously linked to money. Here are her notes from her interrogation of Mona – one of the Environmental Science lecturers:

> *We bring in masses of money. For us, because our fields apply, because the world is worried about what's happening, there is masses of opportunity for money. You have to work hard to get it, but you can. So that brings us recognition. We're a tiny department, there's four of us but we bring millions of Rands into this university that helps fund our students, and helps build linkages with other organizations around the world and so on.*

Concern that the world is currently on its way to a global warming apocalypse, meant that students not only got lots of funding but also lots of opportunities to link with national and international organisations to solve the practical problem of our self inflicted heat death.

Both Peter and Mona were directly asked what they thought of Pedagogy, and they gave very different answers. Peter said that he did not think much about Pedagogy:

> *I do not think Philosophers on the whole . . . do not really reflect that much on their teaching. Teaching is something that just happens naturally. It is a thing that happens when you go into a lecture – you impart information. But the focus is on research, not everyone, but for the most part.*

Pedagogy comes and goes, in and out, appearing when lectures happen and then disappearing again without much thought.[2] Mona, on the other hand, found pedagogy everywhere, even in Florida.

> *I've just come back from Florida, and I was invited to present at a conference which was held by what's called the Tropical Conservation and Development Programme. . . and there was a whole session on education on the last day, and it was absolutely fascinating. I got up and I said, "This has been amazing." You know, it really reinforced for me that we're doing the right thing back here.*

Hlengwa brings her investigation on pedagogy and service learning within the Philosophy and Environmental Sciences departments to a close with a plea for universities to step away from simplistic generic policies on service learning. Departments like Philosophy will tend to have very different responses to service learning in comparison to departments like Environmental Sciences. Although true, I think she let Peter off the hook. She should have held his feet to the fire and grilled him some more – after all, in the West, all philosophy and education thinkers are but a footnote to that old white man – Plato – who reflected deeply on Pedagogy, and who produced a student (Aristotle) whose main concern was with practical application.

Maybe we should just concede that this investigation of Pedagogy is overblown. Maybe Pedagogy is not key to the social justice project of improving the conditions and opportunities of our most disadvantaged. SPADE certainly felt there was some merit to the above conclusion – maybe Pedagogy was merely a sideline witness and occasional bit player to the ongoing violent and escalating reproduction of inequality. Maybe Pedagogy was over-rated, maybe a well-intended weakling continually getting sand kicked in its face. Maybe pedagogy is the skinny guy in the Charles Atlas comic strip:

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[2]   Notice however, that Peter has a double negative at the beginning (I do not think . . .do not really reflect). Those wily philosophers, turning a positive into a double negative.

Celestin Mayombe decided to investigate this option and went through the evidence on how adult non formal education (NFE) centres were teaching

trainees to become self employed – and he also found that pedagogy, on its own, did not have enough power to address the inequalities in our land. The idea behind NFE centres is to allow private skills training programmes to be run in non-profit centres for adults to learn how to become self employed in micro-enterprises. For an NFE centre to work effectively, it needs to do much more than teach self-employment skills, it needs to set up the conditions and connections and support structures that enable micro-enterprises to flourish. It needs to show and enable access to funding, business premises and enterprise materials, information about the possible markets, access to public and private structures that work in the micro-enterprise field. And even if a NFE centre is able to do all of the things, it still has to operate in an economic environment that could be decimated, stagnant, or thriving. The sad reality is that many NFE centres are not doing all of these things. As one graduate observed:

> *I have come to realise that there are a lot of things to know in order to start a business. But in the classroom, our educators [trainers] were just telling us, "start a business, start business"; and then what? We train them and then leave them!*

Mayombe shows that often this perception of lack of support, networks, and assistance is based on poor information about what is actually out there, but the issue remains that most 'graduates' of 'self employment' do not self employ, they self implode. Pedagogy cannot do the social justice project on its own, it cannot even be a major player, even with all the muscles in the world – the best it can hope for, in the words of Pink Floyd, is to have 'a walk on part in the war' rather than 'a lead role in a cage'.

Those lyrics come from one of their most poignant songs – *wish you were here* – and that brings us full circle back to Wally Morrow teaching us how to fly.

It also brings us back to those who carried our Journal through its earlier histories, who are now passing as the Journal continues. I think of Robert Muir, Former Dean of Education, who died recently. He edited JoE from 1974 to 1985 and did a lot to nudge it in the direction of becoming a respectable academic journal. Most notably, he introduced a system of refereeing which meant that the journal ceased to be a no more than a mouthpiece for the musings of luminaries. At the same time, he was (probably the first) academic to include theorists like Bourdieu, Bernstein and Young in his teaching. I

don't need to say anything about Bernstein's influence in relation to JoE. After the journal lapsed in 1986 (because of the 'sharing' arrangement with the Durban campus) he helped with its resuscitation by providing some funds from a small trust fund that had been left to the faculty.[3] It is good academics like Robert Muir who carried the torch so we can carry it now, and for this we give thanks.
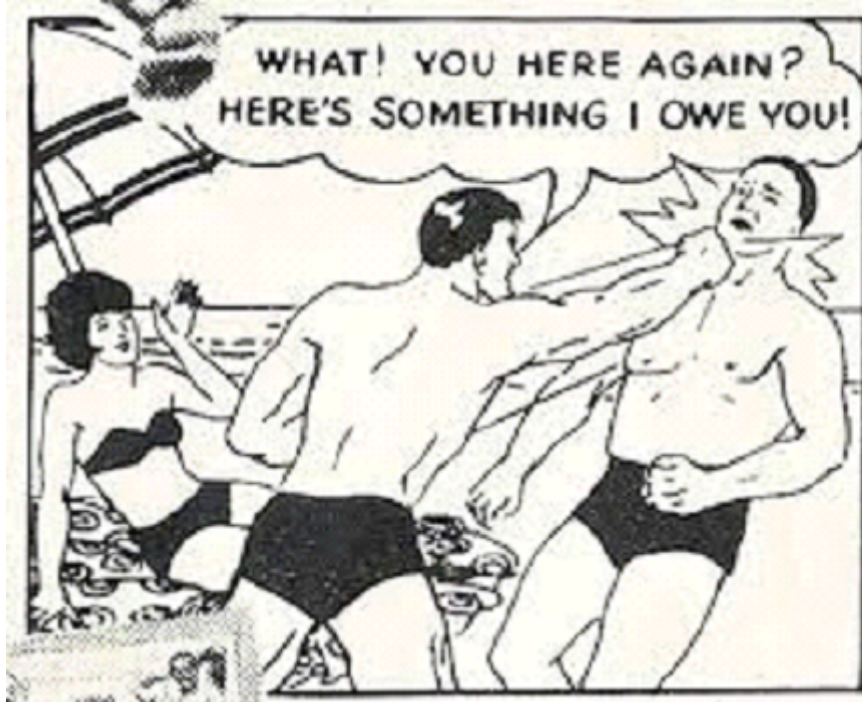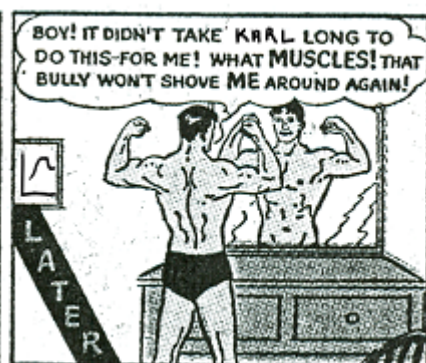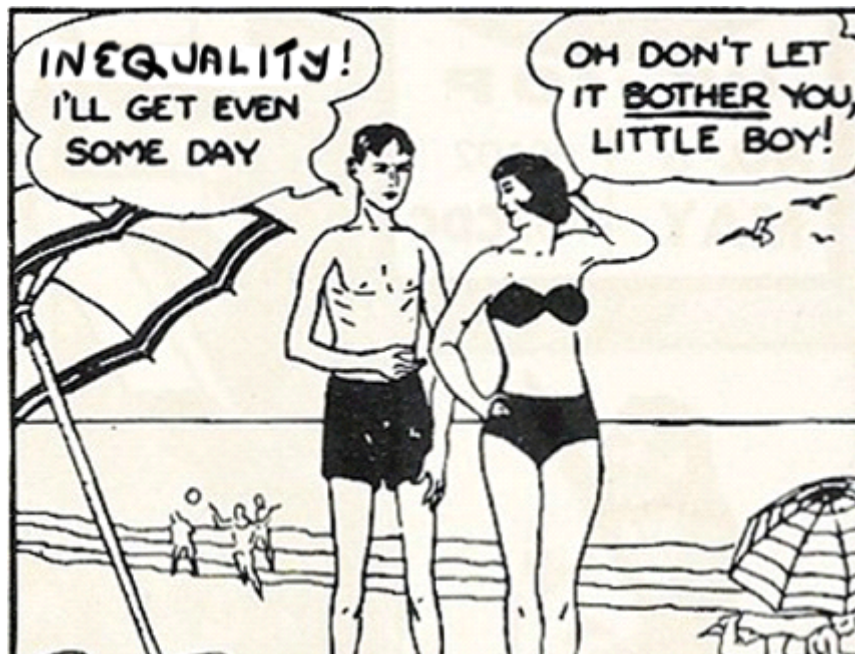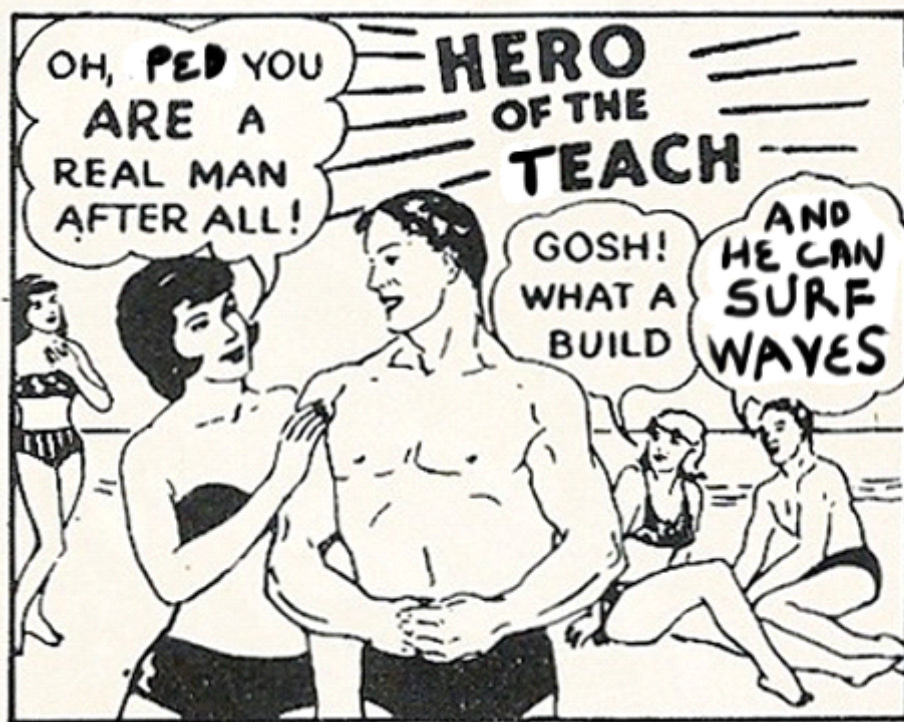
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Learning to fly: pedagogy in the Foundation Phase in the context of the CAPS reform[1]

Ursula Hoadley

Abstract

This paper presents an empirical analysis of pedagogy in relatively well-performing classrooms in poor contexts in the context of the most recent curriculum reform, the Curriculum and Assessment Policy Statement (CAPS). Amongst a set of teachers from a recent research project, shifts in pedagogy from what had been prevalent practices in classrooms (see Hoadley, 2012) were found. These shifts, however, appeared to be largely surface rather than substantive. What the study found was surface compliance to policy dictat; taking on of the form rather than substance of a different pedagogy. A subsequent, closer analysis of the pedagogy of eight of the 'best' performing teachers allowed for the theoretical development of the distinction between surface and substantive change, and to consider more closely questions of curriculum, knowledge and pedagogy at the Foundation Phase level. This was accomplished primarily by drawing on Bernstein's (1996) notion of evaluation and extending it in relation to other studies that have begun to explore the relationship between knowledge and pedagogy, especially Venkat (2013) and Shalem and Slonimsky (2010a; 2010b).

Introduction

In 2012, shortly after the implementation of the Curriculum and Assessment Policy Statement (CAPS), the Schools Performing Against Demographic Expectations (SPADE) project was set up to explore the relationship between particular aspects of schooling and educational attainment in a sample of 14 schools in poor communities, selected on the basis of them achieving consistently better than their socio-economic peers. Part of the SPADE project

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aimed to explore the role of pedagogy in contributing to differential outcomes in schools, attempting to address the fact that classroom practice is "typically treated as an outcome variable with relatively few studies including it as a potentially powerful explanatory or independent variable" (Spillane, 2014, p.722). Initial analyses of the SPADE data suggested shifts in pedagogy from what had been prevalent practices in classrooms (see Hoadley, 2012). These shifts, however, appeared to be largely surface rather than substantive. What the study found was surface compliance to policy dictat; taking on of the form rather than substance of a different pedagogy. A subsequent, closer analysis of the pedagogy of eight of the 'best' performing teachers allowed for the theoretical development of the distinction between surface and substantive change, and to consider more closely questions of curriculum, knowledge and pedagogy. This was accomplished primarily by drawing on Bernstein's notion of evaluation and extending it in relation to other studies that have begun to explore the relationship between knowledge and pedagogy.

The broader project: shifts in the form of pedagogy

The sample for the analysis of the relationship between pedagogy and performance within the SPADE project consisted of 46 Grade 3 teachers in 14 schools located in poor communities. Each teacher was observed for three lessons, in the subjects mathematics, home language and first additional language. Part of the intention of the project was to attempt to conduct classroom observations in a larger sample as opposed to the myriad case studies that have generally characterised research on pedagogy in South African schools. From the international and especially local school effectiveness and general classroom research, we compiled a set of factors that the research suggested influenced student performance. We constructed from the literature a set of teacher attributes that represented an 'ideal pedagogy', in particular for children from poor homes.[2] This drew on both the international and local literature on pedagogy (Westbrook *et al.*, 2015; Coe *et al.*, 2014; Hoadley, 2012) and is shown in Appendix A. On these attributes we generated a 'pedagogic score' for each teacher, hypothesising that the higher

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[2]   This ideal included the following features: Strong and clear explanation and explicit verbal feedback to learners; individualising of learners; coherence in lesson topics/components; variable learner/topic directed pacing; text- (vs oral-) based pedagogy; reading and writing extended text in *language*; conceptual focus and elaboration in *mathematics*.

the teacher 'score' on this ideal pedagogy, the better the student outcomes would be as measured on standardised tests.[3] Appendix A shows the dimension of pedagogy measured, the empirical indicators for these dimensions and the axes of variation on the indicators that were used to derive a pedagogic score.

Although the analysis found variation in pedagogic scores across the sample of teachers, we found no clear relationship between these pedagogic scores and student achievement outcomes at the school level. High and low scoring teachers were found across higher and lower performing schools. There was also no relationship between individual teacher pedagogic scores and achievement outcomes at the teacher level. A number of reasons could have contributed to this. Although streaming was officially not a policy in the schools, there was clear evidence of streaming across a number of classes. Secondly, the scores were not a value added measure that would provide a more reliable indication of a teacher effect on outcomes. Third, achievement outcomes generally fell within a very low achievement range, thus the difference between better and worse outcomes was often marginal. And fourth, the data was cross-sectional, and thus we are not able to pick up cumulative pedagogic effect over time. There was also more variation within schools than originally expected, thus constraining the derivation of a meaningful average pedagogic score for a school (across 3 to 4 teachers). A pedagogic effect at the school level in the way measured according to an ideal pedagogy could not be discerned. Further, 'good' pedagogic scores were relative and did not represent an exemplary form of pedagogic practice that we hoped to identify through the broader project.

We therefore failed where other school effectiveness studies had failed – in showing a relationship between pedagogy and performance (for example, Taylor, Muller & Vinjevold, 2003; Carnoy, Chisholm & Chilisa, 2012). While school effectiveness studies are criticised for studying pedagogy in an atomistic way, we essentially had done the same through a listing of attributes in a segmental way. It also became clearer why in larger sample studies of pedagogy the focus is in general on the use of time and curriculum coverage – variables which are amenable to accurate quantitative measurement precluding the need for high inference judgments on the part of observers.

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[3]   For detail on the analysis of the large sample see Hoadley & Galant (2014).

These kinds of studies however, tell us little about the actual pedagogic process in classrooms (see Alexander, 2014).

An initial scan of the data, especially of teachers with 'good' and 'moderate' pedagogic scores, found pedagogic features that represented a shift from existing descriptions of the majority of South African classrooms (for example Ensor, 2015; Hoadley, 2007; MacDonald, 1990; Chick, 1996; Hoadley, 2012). These characterisations were of a communalised pedagogy that was largely oral, and that worked below grade level. We found in the SPADE 'good' and 'moderate' teachers' classrooms higher levels of individualising. This was seen especially in the use of the mat for ability grouping and a decrease in the collective chanting and chorus mode. In many of the classrooms teachers were observed to listen to individual learners reading. There was more work at grade level, a greater proportion of text-based activity in classrooms and time on task had increased. Most of the time of observation entailed students engaged in instructional activity. We attributed these shifts to both the reform just preceding the CAPS, the Foundations for Learning (FFL), and the CAPS. The shifts in pedagogy that were seen in the classrooms related to pedagogic attributes prescribed in the reforms – especially greater individualising and more text-based activity. There appeared to be a degree of compliance with these reforms across the teachers.

We were particularly interested in the shifts in pedagogy, and whether these held any potential to shift achievement outcomes, even if we had failed to detect these in our study. Although the practice of the 'good' teachers did not represent an exemplary pedagogy we hoped we would identify in the research we were interested in what the nature and implications of the shifts in form might entail. In order to explore this further, I considered it productive to return to Bernstein's conceptualising of evaluation.

Evaluation

The reason for a focus on Bernstein's concept of evaluation is two-fold. Firstly, it derives from a particular definition of pedagogy, where pedagogy is understood as a process of continuous evaluation (Bernstein, 1996, p.161). The purpose of pedagogy is to transmit criteria (or exchange criteria, in some pedagogic relationships). These evaluative criteria are transmitted through

testing, but also questioning, explaining, in fact all student-teacher interactions where criteria (that which is to be learnt) are transmitted and their acquisition checked. Considering the teachers' practice in relation to evaluative criteria would allow for an investigation of how they were engaged in these processes. Secondly the emphasis on evaluative criteria follows a robust research tradition that identifies the importance of explicit evaluative criteria as essential to student success, especially in working class contexts. A number of studies have come up with strong and consistent findings: strong (explicit) control over the evaluative criteria is crucial to success for students who come from less literate or less pedagogically-oriented homes (Morais, Neves & Pires, 2004; Hoadley, 2007; Reeves, 2005; Lubienski, 2004). In the broader literature strong evaluative criteria is akin to notions like 'visible learning' (Hattie, 2009) or direct instruction, feedback and formative evaluation.

Within the Bernstein schema all aspects of pedagogy - pace, selection, sequence, the teacher student relation – are related to or derive from the evaluative criteria (i.e. what is to be transmitted and acquired). Morais *et al.* (2004) usefully explain what is meant by "making the evaluative criteria explicit" which consists of "clearly telling children what is expected of them, of identifying what is missing from their textual production, of clarifying the concepts, of leading them to make synthesis and broaden concepts" (p.8).

In order to deepen the investigation in relation to what was going on in the classrooms where teachers had higher scores, a sub-sample of eight teachers with high pedagogic scores was selected, in other words teachers who best approximated the form of the 'ideal pedagogy' we had constructed in the earlier investigations. Four teachers with high mathematics pedagogic scores and four teachers with high language pedagogic scores were selected, and their pedagogy considered in relation to Bernstein's notion of evaluative criteria. Bear in mind that these pedagogic scores were relative to those of other teachers in the sample. They did not represent what one might describe as 'excellent' or exemplary practice, and at this stage of the research I was not trying to relate them to student outcomes. The interest was, however, in the fact that these teachers appeared to be doing something different (better?) to other teachers in the sample.

Analysing evaluative criteria

In order to focus the analysis a coding scheme was designed to specifically measure evaluative criteria (based on Hoadley, 2005 and Morais *et al.*, 2004). Given preceding research on the importance of explicit evaluative criteria in poorer school contexts, the coding scheme, shown in Table 3 below, considered the framing or extent of control the teacher has over the evaluative criteria in the course of instruction. *Control* can be seen in the clarity and explicitness of the evaluative practice. Framing is expressed in terms of its strength or weakness using standard Bernsteinian notation – F^{++} representing the strongest framing (or teacher control) over the evaluative criteria and F^{--} representing very weak framing or control. The lessons of eight of the top scoring teachers were coded across three empirical indicators:

1.   In the teacher's introduction/explanation/instruction for an activity/task

2.   In the teachers' monitoring of and comments to learners in the course of conducting an activity or task

3.   In the kinds of teacher responses to learners' oral or written responses in an activity or task

The coding scheme with indicators, descriptors and examples from the data are shown below. Some of the examples are drawn from the larger sample of teachers in order to capture the range in the coding.

Table 1: **Coding scheme for the analysis of evaluaive criteria and coding examples**

Empirical indicator 1: In the introduction/explanation/instruction for an activity/task			

F++	F+	F-	F--
Evaluative criteria very clear and explicit	Evaluative criteria quite clear and explicit	Evaluative criteria quite unclear and implicit	Evaluative criteria quite unclear and implicit
The teacher always or almost always makes the evaluative criteria explicit in the introduction, explanation or instruction for an activity or task. She explicitly defines and explains the purpose and meaning of the task or activity and makes it clear exactly how a task should be completed.	Most of the time the teacher makes the evaluative criteria available in an explicit and clear manner through explication or instruction for an activity or task. The requirements for the successful completion of a task are generally clear, although there may be some aspects that remain implicit.	Some attempts are made to make the requirements for the successful completion of a task or activity available to learners, but these are at times unclear or not articulated. There is some ambiguity or lack of clarity as to what is expected of learners in the task or activity.	Generally the teacher does not make the evaluative criteria explicit in the introduction, explanation of instructions of a task. How the task should be completed, its purpose and meaning is not clear. Learners are unclear as to how to proceed, or proceed in any manner they choose.
Example F++	Teacher D tells the learners that the letter of the day is the letter 'p'. She tells learners that she wants them to give her words that start with 'p'. She gives an example, 'pad [road]' and then proceeds to ask almost every child in the class to produce a word.		
Example F-	After reading a short narrative text Teacher N draws lines on the board and writes the instructions for a task. She does not explain what the actual instruction is. One child walks up to her with her books and asks a question, she then tells learners to write in their books. Then she tells learners to identify verbs in the text and write them down. About a third of the way into the activity she defines verbs as 'doing words'.		

Empirical indicator 2: In the teachers' monitoring of and comments to learners in the course of conducting an activity or task

F⁺⁺	F⁺	F⁻	F⁻⁻
Evaluative criteria very clear and explicit	Evaluative criteria quite clear and explicit	Evaluative criteria quite unclear and implicit	Evaluative criteria quite unclear and implicit
The teacher constantly monitors what learners are doing and makes comments. To the whole class and to individuals she repeatedly goes over what is expected and what constitutes an appropriate performance.	The teacher monitors learners' work and makes some points either to the whole class or to individual learners so as to clarify what is expected of them in the task. Statements around what is expected are sometimes partial, or made available to only some members of the class.	The teacher sometimes monitors what learners are doing in an activity or task, and makes a few comments, however, this is not sustained and the criteria for a successful production are not made explicit to all.	The teacher does very little or no monitoring of learners work and rarely or never attends to their productions. She makes no or very few comments to individual learners or the class.
Example F⁺	Teacher M writes an exercise on the board – learners must pick out the verbs and nouns from 8 sentences and write the words in their books. Learners work alone while the teacher walks around and checks some learners' work. Teacher M takes a long time to try and get a learner to understand the difference between verbs and nouns, sitting at the learner's table and using objects around her to demonstrate. She does this again with another learner who is struggling. No additional tasks are given. Most learners draw pictures or try in a game to make static electricity with their rulers		
Example F⁻⁻	Teacher N does a number of three digit column addition examples on the board with learners. She then writes up 3 word problems that learners all read aloud together. Teacher N then sits at her desk sending messages on her phone while about half the class do the problems and the rest sit idle or play.		

Empirical indicator 3: In the kinds of teacher responses to learners' oral or written responses in an activity of task

F^{++}	F^{+}	F^{-}	F^{--}
Evaluative criteria very clear and explicit	Evaluative criteria quite clear and explicit	Evaluative criteria quite unclear and implicit	Evaluative criteria quite unclear and implicit
The teacher always responds to learners' written or oral responses. In incorrect responses the teacher shows why the answer is incorrect. The teacher often elaborates on a correct answer, modifies a response or draws out a general principal.	The teacher mostly responds to learners' oral or written responses. In incorrect responses the teacher sometimes shows/tells the correct answer and sometimes why the answer is incorrect. The teacher sometimes elaborates on a correct answer. She does not modify a response or draw out a general principle.	The teacher sometimes responds to learners' oral or written responses. In incorrect responses the teacher shows/tells the correct answer and but not why the answer is incorrect. The teacher rarely elaborates on a correct answer.	The teacher responds to learners' responses rarely or not at all. In incorrect responses the teacher seldom indicates whether or why the answer is incorrect. The teacher rarely or never elaborates on a correct answer.
Example F^{+}	Teacher F writes a word sum on the board that requires the calculation 43 – 19. A learner goes to the board and writes 43 – 19 = 23. The teacher tells her to repeat her calculation. The learner tries again, failing once again to derive the correct answer. The teacher shows her on the board: 43 – 20 = 40 – 10 = 20 13 – 9 = 4		
Example F^{--}	Teaching 3D shapes the following exchange takes place between Teacher S and a learner: Teacher: What shape are you holding? Learner: [referring to the sphere in her hand] A circle Teacher: How is it? Learner: It's green Teacher: Look at it. How is it? Learner: [no response] Teacher: Is it rough or smooth? Learner: [no response] Teacher: [moving onto next student] What shape are you holding?		

Based on the video data, and taking the lesson as the unit of analysis, each of the teachers' practice was coded using the coding scheme. Once the lesson

was coded on each of the indicators individually, a global framing code was then derived and assigned to each lesson/teacher. In other words values were derived by assigning numerical values to each of the framing values for each indicator, and then by taking an average of the three and converting this back to a framing value. So for example, a teacher's score would be calculated as follows where $F^{++} = 4$; $F^{+}= 3$; $F^{-}= 2$; and $F^{--}= 1$. The final framing value assigned would be based on the cumulative score on the three indicators, where $0–3=F^{--}$; $4–6=F^{-}$; $7–9=F^{+}$; and $10–12=F^{++}$. An example is given below:

Coding procedure

Teacher P	Indicator 1 code and score	Indicator 1 code and score	Indicator 1 code and score	Total score	Cumulative framing code
Language lesson	F^{+} (=3)	F^{+} (=3)	F^{-} (=2)	8	F^{+} (=7–9)

The outcome of this coding exercise is shown in Table 4 below.

Table 2:   Coding of framing over evaluative criteria

Teacher	Indicator 1	Indicator 2	Indicator 3	Numerical value	Global code
Teacher P Language	F^{+}	F^{+}	F^{-}	8	F^{+}
Teacher M Language	F^{+}	F^{-}	F^{--}	6	F^{-}
Teacher S Language	F^{+}	F^{-}	F^{--}	6	F^{-}
Teacher H Language	F^{+}	F^{+}	F^{+}	9	F^{+}
Teacher S Mathematics	F^{-}	F^{+}	F^{--}	6	F^{-}
Teacher SM Mathematics	F^{+}	F^{+}	F^{-}	8	F^{+}
Teacher H Mathematics	F^{+}	F^{+}	F^{-}	8	F^{+}
Teacher Z Mathematics	F^{+}	F^{+}	F^{-}	8	F^{+}

An extended example is given below to illustrate how the coding on the three indicators was conducted and how the findings were derived.

In a mathematics lesson of Teacher Z, with learners on the mat, the teacher explains that learners must count out 10 beans in front of them, then make equal groups with 10 beans. As they make equal groups with the beans, the teacher writes each representation on the board as a number sentence, first as repeated addition, and then as multiplication (e.g $2+2+2+2+2=10$ or $5\times2=10$). She ends up with multiple representations of the same number (10) on the board and makes sure that learners are aware they are making groups with the same number all the time (indicator 1: $F^+/3$). The teacher uses the number 12 as a second example, which learners also have to break up into equal groups.

The teacher again writes multiple representations of 12 on the board, showing different equal groups as repeated addition or multiplication ($6 + 6 = 12$; $2 \times 6 = 12$; $4+4+4 = 12$; and $3+3+3+3 = 12$). Learners are then instructed to use their beans to represent their own number greater than 12 by breaking the number up into equal groups, similar to the examples on the board.

The teacher makes some points either to the whole class or to individual learners so as to clarify what is expected of them in the task (indicator 2: $F^+/3$). In particular, the teacher checks on learners as they are making groups with beans and makes sure the learners check their totals, then writes the number sentence representing their groups on the board (indicator 2: $F^+/3$). Learners are seldom asked to give reasons for their answers. When learners have to verify their totals, they don't actually count in their groups, they count in ones to check. The teacher pauses with errors, but rather than engaging with the error, she often makes learners change the number they are working with to make it easier for them to make equal groups (indicator 3: $F^-/2$). The teacher never writes the number sentences with the total first (e.g. $12 = 3 \times 4$ and $12 = 2 \times 6$ etc) to underscore the point that the same number is represented in different ways and this is not expressed in teacher talk. Rather, the randomness and collection of number sentences on the board, appears to learners as the representation of numbers as equal groups. Teacher Z's practice was characterised as F+ (a score of 8).

Across the teachers, the closer video analysis found that in the introduction to tasks and activities teachers generally presented clear explanations or instructions of what to do (indicator 1). In the course of conducting activities, in most classes there was evidence of the teachers monitoring what learners were doing and clarifying expectations (indicator 2). On indicator 3, however,

there was predominantly weak framing across the teachers. In responding to learners' verbal or written productions teachers often did not make the evaluative criteria explicit. They provided restricted responses to what learners said or did, or gave no response. Across the indicators and teachers, however, in these classrooms the transmission of explicit criteria that are argued in the literature to be optimal in teaching in poor settings are evident. None of the high-scoring teachers' practices was characterised globally as F--.

At the same time none of the teachers scored F++ on the scheme. The 'good' is tending towards the explicit, but teachers' evaluative practices are not extended or elaborated. The higher scoring teachers provide clearer explanations and some correction in exerting greater control over evaluative criteria. However, none of the teachers respond to learner productions in an extended way providing more general principles for the learning or elaborating on the evaluative criteria. Whilst there is no F^{--} in any of the classrooms (or F0 – see Hoadley, 2005), there is also no evidence of very explicit pedagogy, strong control and an elaborated exercise of evaluation (F^{++}).

Looking at the extended example above, it is evident that although evaluative criteria are stronger, the analysis is not capturing *what* is being transmitted. In this regard, two aspects of the pedagogy across the teachers were not captured by the evaluative criteria coding scheme. The first was that although the data showed that there were strong points of evaluation, looking across lessons these points or particular pedagogic instances were not connected to a sense of what content had gone before or what was to come after in the pedagogic trajectory. Second, there appeared no instance where the teaching of isolated fragments of content or skills was connected to a more general principle or subject trajectory. In other words it was difficult to retrieve the 'bigger picture' of the pedagogy. Perhaps it was these factors that accounted for a lack of connection between 'better' or more visible pedagogies (with stronger framing evaluative criteria) and student outcomes.

Evaluative criteria and evaluative rules

The research that has been done within the Bernstein frame with respect to evaluation in pedagogy has focused almost exclusively on framing or relations of control (Muller and Hoadley, 2010). Explicitness of evaluation is treated as strong framing within classroom interaction.

Recent interrogation of the concept of evaluative criteria has suggested that what framing is able to pick up are essentially 'teaching styles' and what it misses is the actual content or the 'what' of the pedagogy, "the operation of instructional discourse or the meeting of knowledge criteria" (Muller & Hoadley, 2010, p.165). The focus is on the social relation between teacher and learner, and whether the teacher is controlling the transmission of criteria. This is evident in the examples above. But what of the criteria themselves and how they are related? What of the 'what of the pedagogy'?

The 'what' refers to the knowledge principle (derived from the distributive rules) that structures learning. It refers to the 'broader map' of 'systematic organised learning' (Shalem and Slonimsky, 2010b), or conceptual, disciplinary base of the subject. Evaluative criteria are criteria that are derived from the level of the production of discourse – both subject-specific and education-theory. When the basis for criteria are made explicit in the classroom, it potentially allows students to read the field more broadly. I suggest that we can refer to these bases that make visible a form of generalisation from the pedagogic particular to the disciplinary general, *evaluative rules*.[4] Evaluative rules regulate evaluative criteria, establishing connection between them in pedagogic practice.

Bernstein (1996) argues that evaluative rules *condense* the process whereby knowledge becomes pedagogic communication in the classroom. This means that they refer to both interaction in the classroom (framing) as well as to the knowledge transacted. Evaluative rules regulate criteria, and this is accomplished in relation to external referents – a key one being the knowledge base of the subject. Thus evaluative rules have conceptual potential to describe both the connection between pedagogic instances as well as the reference of evaluative criteria (instances) to more general knowledge principles.

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[4]   The distinction between evaluative rules and evaluative criteria was first made by Muller & Hoadley (2010) in relation to the operation of regulative discourse (moral order) within pedagogy. In their argument, similar to the present one, evaluative rules are derived from the macro level (moral order) derived from forms of knowledge. The rules distil the Durkheimian moral social-formative dimension of knowledge realised in the evaluative criteria. Criteria are nested in rules.

Temporal range and ordering logic

The 'bigger sense' alluded to earlier can thus be conceptualised in terms of evaluative rules, regulating criteria instantiated in the pedagogy in reference to a 'disciplinary or subject map'. They have a *connecting* and a *generalising* function. In using this relatively abstract concept of evaluation to analyse data I drew on the work of Venkat (2013) and Shalem and Slonimsky (2010a; 2010b).

Venkat (2013) develops the concept of '**temporal range**' to consider teaching of mathematics in the early grades. Venkat identifies two temporal dimensions in mathematics teaching. The first is what she calls 'mathematical temporality' that relates to mathematical ideas, their precursors and horizons i.e. the past, present and future of mathematical topic strands. The second dimension is what she calls 'mathematical learning temporality', that relates to a learning trajectory that connects learners' past understandings with present understandings. She argues that while mathematical temporality might well be primary in teaching, this temporality is necessary, but not sufficient. She asserts that "if mathematical learning temporality (i.e. students' understandings) cannot be linked with a mathematical temporality within teaching and mediated, possibilities for learning in well-connected and solidly founded ways continue to be disrupted" (p36). So mathematical temporality deals with what logically comes before and after the concept or operation at hand; whereas mathematical learning temporality deals with how the concept is connecting with the individual learners' past understanding and present sense making.

Venkat uses these two dimensions of temporality to re-interpret empirical studies of teaching number in the foundation phase. She shows how across studies, teaching often either accepts, or produces the answer to the immediate problem, without attention to the **broader understandings and longer term efficiencies** needed for autonomous student work with similar and related problems. This production allows lessons to progress without any need for learning to progress within them (p.36). In other words, the teacher does not connect with either mathematical temporality or mathematical learner temporality in anything but an immediate and superficial way. The teacher does not connect with the broader demands of a mathematics learning trajectory, or the learners' prior understanding of mathematics.
Venkat's concept of temporality is firmly located within pedagogy, where progression of a topic is considered in relation to what has come before and after (temporal range), as well as considered in relation to what students have

acquired, their 'learning pasts' (mathematical temporal range). In Venkat's empirical investigations she has been concerned with the 'stubborn immediacy of the present' (Venkat, 2013) in many Foundation Phase classrooms.

Shalem and Slonimsky's work concerns itself with the ordering logic in educational practices. In their work focused on feedback at a higher education level, Shalem and Slonimsky (2010a) argue for the necessity of providing students in assessment of their work with "**epistemic means that will help them to order ideas vertically**" or to learn what counts as an epistemic relation between ideas (p.765). Shalem and Slonimsky (2010b) helpfully point to the question of the '**ordering logic**' or the 'epistemic relation between ideas' in a lesson by using an analogy drawn by educational philosopher Wally Morrow:

> Let's take an example of a teacher of someone who wants to become a pilot. A good teacher of piloting has in the back of his mind an understanding of what is involved in flying an aeroplane. In the practice of teaching [the teacher] says, 'Ok, the first thing we need is to teach how to do this and how to do that' . . . or something like that. You can contrast such a teacher of piloting from a teacher of piloting who in a sense does not understand what the bigger thing is, but is following a book which says in lesson one you need to do this and in lesson two you need to do that and it is never properly tied together (Shalem and Slonimsky 2010b, p.21).

What ties 'it' together is an ordering logic, which orders ideas vertically, in other words in relation to a broader map, schema or totality of the knowledge to be acquired. This conceptualisation points to *upward generalisation* in pedagogy when the 'bigger picture' is elucidated. Drawing together the insights of Venkat and Shalem and Slonimsky then. The evaluative rules in pedagogy then can be seen to have a temporal, connecting dimension (temporal range) and a categorical, generalising dimension (ordering logic). This potentially provides a structural understanding of how knowledge relates to pedagogy.

Knowledge and pedagogy

It seems possible then to have strong evaluative criteria with weak evaluative rules, and this describes the practice of the 8 'best' teachers sampled for this study. 'Good' teachers in the sample make the requirements for a tasks and activities explicit and are to some extent are explicit around requirements when they monitor and intervene while students engage with the content of

the lesson. To a much less extent they make evaluative criteria explicit in their responses to learners. Although evaluative criteria are more strongly framed, reference is made to the particular pedagogic instances rather than generalisation across time or across instances or the connectivity both in terms of what has gone before and what will come after, *and* in making connections between bits of knowledge. I provide two examples of this below.

Recall Teacher Z sits with learners on the mat and asks them to count out 10 beans, and then make equal groups with 10 beans. As they make groups with beans, the teacher writes each representation on the board, first as repeated addition, and then as multiplication (e.g. 2+2+2+2+2=10 or 5x2=10). She ends up with multiple representations of the same number (10) on the board. She also goes on to write x2, stating it is the same as doubling, and then says halving is its inverse, and includes the commutative property by saying that 2x5 and 5x2 both equal 10. Although here, the principle of number decomposition and the commutative property are structuring the activity, the displays of the teacher on the board makes it appear as if the representations are just different groupings and different calculations. The overall pattern and principle structuring the activity is never made explicit or visible to learners through discursive elaboration or, for example, by writing 10=5x2 and 10=2x5 and 10=2+2+2+2+2 etc.

In the analysis of framing over evaluative criteria, the lesson of Teacher Z was characterised as having strong framing over the evaluative criteria. But there is an atomisation of knowledge 'bits', without the connections between being made visible and intelligible. The connection between concrete and symbolic representations of groups of ten, and multiplication as repeated addition, and doubling is not made. There is a lack of a coherent thread through these temporally fragmentary topics. There is also no reference to a pedagogic past (prior topics, concepts introduced) nor learners' prior understandings. Further there is no upward generalisation of the activity to more general rules or principles, such as that of number decomposition and the commutative property. Here then we have an example of strong framing over evaluative criteria but weak evaluative rules.

Another example comes from Teacher P, who in a small graded reading group, reads a story with a clear moral message about a boy who was too proud. The teacher begins by showing learners the back of the book, and asks what the book is about. Learners don't respond so she shows them the front cover and asks what the boy on the cover is doing. The teacher asks a series

of cloze questions about the cover picture and title to which the learners provide single word answers in a chant. They chant the name of the author after her. They chant the title after her a number of times. The teacher begins to read. After a sentence she points to the speech bubble on the first page and asks "But class, I am looking here on the first page. What are these? These things?". The intercom interrupts with an announcement. She says "speech bubble" and the learners repeat after her. The teacher writes 'Question mark' on the board, explaining that when you ask a question you use a question mark. She also writes 'full stop' and 'exclamation mark' on the board and briefly explains what these look like. She writes 'comma', but doesn't explain this. She starts to read again.

At the end of the first page the teacher stops reading and shows the learners how to turn the page. She shows incorrect ways of holding the book. She reads a sentence and then says that the learners must have respect for the book because "books make a person clever". Learners repeat after her "Books make a person. . .clever". She reads a few more sentences and then asks learners where they can get "a book for free to learn". Learners reply in chant "library". She shows learners again how to turn the page of the book. The teacher continues reading, stopping at times to explain words and at other times to discipline the rest of the class. The teacher continues reading and some learners join her in chorus. She stops to ask them what comes after the word "sjoe!" in the text, and they answer "exclamation mark". An individual learner reads while the rest of the learners follow in their books. The teacher goes to see what the rest of the class is doing while the learner reads. The teacher returns to the mat and takes up the reading and then the learners join in a chant. The teacher explains a quotation mark. She shows them a sentence in the story that is in quotation marks. The learners repeat the sentence after the teacher. They then continue reading. At the end the teacher gives the learners a comprehension exercise to do when they return to their desks. The exercise is unrelated to the reading that has been completed.

The reading of the text is fragmented by constant interjection (insertion of evaluative criteria) in the pedagogy including aspects related to vocabulary, punctuation, the mechanics of reading (how to turn a page) and the value of reading (it makes you 'clever'; the importance of libraries). By the end of the reading session it is very difficult for the researcher, let alone struggling readers, to retrieve the narrative. Reading as a sustained activity where text communicates meaning does not emerge. The activity ends abruptly and learners are given questions related to a completely separate and unrelated text to the text just read.

In this example, we have the *form* of guided group reading, which as a pedagogic form aims for enhanced focus on reading for meaning and comprehension and more individualised evaluation by the teacher. We find strong framing over the evaluative criteria with constant intervention by the teacher. But the focus of the evaluative practice lacks specific strategies or engagement to decode unfamiliar words and no attention is given to retrieving meaning from the text. A broader sense of what it means to read – i.e. decode *and* retrieve meaning (and pleasure) from text – is absent from the activity. The text is treated as an undifferentiated whole. There is no inferential or evaluative discussion of the narrative structure, genre or meaning of the story (in this case the 'moral'). Thus upward generalisation in relation to knowledge about texts, especially genres and forms (Fountas and Pinnell, 2012) and text meaning (Fisher, 2008) are not made. There is no sense of what has been read before in this group. Nor is their evidence in the development of decoding skills, although vocabulary development is a focus. In short, while there are strong evaluative criteria transmitted, a bigger sense of what it means to read is lost.

Across the data for both language and mathematics there was little evidence of teachers marking certain pedagogical moments to state a rule, to "compare and contrast between ideas, demand precision of meaning and confer what can and cannot be inferred from a proposition" (Shalem, 2015). Both connecting and generalising, temporality and categorical generalisation, are not evident in the data even while the teachers make criteria explicit for what learners do in the classroom or particular elements of the topic. The analysis raises the question as to whether learners are exposed to systematic ordered instruction (Shalem and Slonimsky, 2010b), or what I started out with as the 'substance' of learning mathematics or language, what I am suggesting here constitutes a temporal and categorical aspect or evaluative rule.

Conclusion

The study reported on in this chapter began with an attempt to investigate the relation between pedagogy at the school level and performance in the sample of SPADE schools. The broader analysis was based on an 'ideal pedagogy' constructed from the research literature around optimal pedagogic forms in poor schooling contexts (see Appendix A). We found some features of pedagogy that approximated the ideal form spread across the sample (higher and lower performing schools), but an aggregated pedagogic score in a school that was related to performance was not found in these schools.

Subsequent analysis took a subsample of eight teachers with high pedagogic scores on the metric developed for the whole sample. In this smaller sample of four mathematics and four language teachers, in certain respects the pedagogy represented the *form* of the 'ideal pedagogy'. It also conformed to expectations set out in the Curriculum and Assessment Policy Statement for a more individualised pedagogy, the use of more written text and explication of evaluative criteria. The form adopted in the eight classrooms represented a substantial shift in pedagogic practice from the dominant pedagogic forms reported in research. Again, however, the form at the teacher level did not represent an exemplary pedagogy and was not associated with higher student performance.

Amongst the 'best' teachers in the sample there was stronger control over evaluative criteria. But there was no evidence of teachers connecting the pedagogic instances to a broader subject map. Using the notion of evaluative rules, which were defined as regulating evaluative criteria, both temporally and categorically, the paper shows how weak evaluative rules can render the pedagogy fragmented. 'Organised systematic learning', in relation to a broader sense of the discipline or subject would appear to be absent across all classrooms in this sample, even while teachers consistently transmit criteria.

A highly specified curriculum, with clear content, sequencing and pacing requirements such as those found in the CAPS does not necessarily make visible the conceptual structure of a subject. Generalising and connecting in the pedagogy is dependent on the articulation/underpinning of the referent knowledge field/s, its concepts and their relations.[5] Visibility or understanding of the conceptual structure of the subject allows for the movement between criteria and rules. As Shalem and Slonimsky (2010a, p.761) point out, "pedagogy is concerned both with explicating to students the structure between ideas as well as teaching them to instantiate abstractions". In order to make the moves between one has to be clear on the knowledge object and the ordering principle of the pedagogy. The CAPS clearly articulates the procedures for teaching reading and early mathematics (Hoadley, 2017). It advertises certain desirable pedagogic attributes, and there

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[5]   Muller argues that in relation to pedagogy the most common way of representing this kind of verticality in the literature has been characterised in terms of 'cognitive demand'. How much of different levels, for example, 'memorisation', 'problem solving', apparent in teaching becomes a proxy for 'opportunity to learn verticality'. What this does, he argues, is shift the focus from a knowledge approach to a knower approach. It shifts the focus "from what knowledge is made available, to what levels of complexity teachers make available" (2007, p.82).

is a measure of teacher compliance. But compliance satisfies accountability requirements but is unlikely to accomplish the trick of learning. While teachers can enact the desired *form* of pedagogy and transmit appropriate criteria, a curriculum alone cannot bring about a pedagogy of *substance*, where learners can grasp the ordering logic of the lesson, organise ideas categorically and comprehend the trajectory of concepts/content/knowledge over time.

What emerges from the discussion above is the idea that you can do criteria without rules or generalisations, but to return to Morrow's pilot metaphor, that won't enable the student to fly. Criteria are nested in rules, and regulated by them. Teachers' control over the evaluative criteria in classrooms is stronger and that is potentially good. In the classrooms of teachers with high pedagogic scores there is constant exchange of evaluative criteria in the classroom instructional context. But this occurs atomistically and in the present tense. Categorical referents and knowledge temporality is weak. This is how exclusion in this set of working class classrooms is working. Control is being brought back into classrooms but power in relation to the distribution of knowledge is still restricted. Whether teacher compliance in strengthening control over criteria represents a terminal point or a step towards being able to generate rules will hopefully become clearer in classroom research to come.

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Appendix A: Dimensions of pedagogy and axes of variation

Dimension of pedagogy	Empirical indicators	Axis of variation
1. Classroom discourse type	Do the students engage mostly with written text (in book, on board or other written source) or with oral discourse? Do students produce oral or written responses to teacher questions/directives?	text-based/oral
2. Engagement with text (language only)	Do students predominantly engage with individual sounds, words or single sentences, or with extended pieces of written text, in reading or writing activities.	extended/restricted
3. Evaluation/feedback	The extent to which the teacher makes evaluative criteria explicit through exposition, through monitoring what learners are doing and giving feedback on correct and incorrect responses i.e. does the teacher make clear to learners what the central concept to be learnt is, and what they are required to do to produce correct answers.	elaborated/restricted
4. Pacing	The extent to which the time allocated in the lesson was appropriate to the difficulty or extent of the content/activities introduced. The extent to which students were differentiated in the pacing (fast learners given extra/different work)	Appropriateness of pacing/high/low

5. Lesson coherence	The extent to which the lesson has clear and related starting point, build up and conclusion and presents accurate content	Related parts – accuracy/fragmented - inaccurate
6. Cognitive demand	Is lesson pitched appropriately at grade level?	Too high/low/at grade level
7. Reading practices (language only)	Does the teacher listen to individual students read?	individualised/communalised
8. Time on task	The extent to which learners are on-task when working independently and the extent of disruptions to instructional time.	high/low
9. Orderliness/discipline	The extent to which learners are self-regulating and teacher needs to regulate learners' behavior.	high/low
10. Student individualization	Do all learners do the same tasks or exercises, or do different learners get different tasks? Do learners who complete tasks ahead of time, get additional work to complete independently? Is there evidence that learners are differentiated into ability groups through the use of graded readers or differentiated tasks?	differentiating/uniform

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Analysis of teaching and learning of natural sciences and technology in selected Eastern Cape province primary schools, South Africa

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Abstract

Great consensus exists that high-quality natural science teaching and learning at primary school level is fundamental for learner success and advancement in life. This paper discusses how natural science is taught and learnt in selected primary schools in the Eastern Cape Province, South Africa. Data was collected through 22 classroom observations during a science lesson and 55 responses to a questionnaire. Findings reveal that: teaching in most classrooms used non-stimulating pedagogical approaches that lacked practical activities that promote deeper learning of science content and develop learner's inquiry abilities; the classroom environment was impoverished for science teaching and learning. I argue and conclude that science teaching and learning in these schools requires attention as it hardly aligns with the Curriculum Assessment Policy Statement requirements in South Africa. Moreover, there is a need for stimulating classroom approaches that attract and inspire young learners to pursue science learning at high school and tertiary level.

Introduction

There is great consensus that high-quality science[1] education teaching and learning at primary school level is fundamental for learner success and advancement in life (Halverson, 2007; National Research Council, 2012). The early science learning can help learners develop curiosity, appreciation and understanding of the natural world, which are fundamental for learning progression (Eshach & Fried, 2005; Halverson, 2007; Trundle, 2009). According to the International Council for Science (2011), stimulating of

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[1] In this paper science education and natural science are used interchangeably.

science education is fundamental for both the future of science and the ongoing development of our global knowledge society. However, despite the above consensus, James and Pollard (2006) posit that teaching and learning are what ultimately make a difference in the mind of the learner and thus affect knowledge, skills, attitudes and the capacity of young people to contribute to contemporary societies. Teaching becomes the centre stage of science learning and learner achievement. In developed countries, the issues and complexity of teaching and learning of science education has received considerable attention due to the envisaged returns (Glenn, 2000; Goodrum, Hackling & Rennie, 2001; Osborne & Dillon, 2008; Teaching and Learning Research Programme, 2006). In the US for example, the National Commission on Mathematics and Science Teaching for the 21st Century headed by John Glenn (2000) argued that the future well-being of their nation and people depends not just on how well they educate their children generally, but on how well they educate them in mathematics and science specifically. Also underscoring the significance of teaching and learning of science education, Diamond (Teaching and Learning Research Programme [TLRP] 2006) in the United Kingdom report on science education in schools asserted that the ability to generate new knowledge and use it innovatively depends upon having a scientifically literate population and therefore good science education in schools is a vital preparation for scientific literacy in later life. Undoubtedly, effective science teaching assist in developing learner motivation and self-confidence necessary and crucial to increase their academic performance (Chalufour, 2010).

Despite the various countries' attention to science education, in South Africa such attention has not been much, especially in the natural sciences and technology at the Intermediate phase level (Grades 4–6). Research on the teaching and learning of natural sciences and technology is still fledgling (Set, Hadman & Ashipala, 2017), leaving us with knowledge gaps regarding the various issues that may be impeding or enhancing successful results in the learning area at that particular level. Nevertheless, snippets of research do indicate that: natural science teaching hardly support the conceptual development of primary school learners (Set, Hadman & Ashipala, 2017); there is lack of requisite infrastructure which renders teaching and learning in rural schools nearly impossible (Mtsi, Maphosa & Moyo, 2016); some educators lack proper foundation in natural sciences teaching methods and content knowledge (Mtsi, Maphosa & Moyo, 2016; Mpanza, 2013; Ngubane, 2014); and there is neglect and insufficient support of primary school natural sciences and technology teachers by their school districts (Bantwini, 2012;

Ngubane, 2014). The less attention on natural sciences and technology is also visible from the omission of the learning area in the Annual National Assessment, a key instrument currently used to measure learner performance at General Education and Training Band (primary school level). This is despite the concerning results from the Trends in International Mathematics and Science Study (1995, 1999, 2002, & 2011), the only standardised international test that includes natural sciences and technology in which South Africa participates.

In this paper I intend to add to the existing scholarly knowledge on teaching and learning by focusing on the intermediate phase (Grade 46) natural sciences (NS) in selected public primary schools in the Eastern Cape. The following questions guided the inquiry: (1) how is natural science taught in some public primary schools? (2) what are teachers' perception regarding how learners learn natural science in their classrooms? Hoadley (2012) asserts that gaining deeper and more robust understandings of instructional practice is critical to understanding why and in what ways schooling in South African primary schools continues to fail the vast majority of learners. This is also aligned with the Minister of Basic Education's (2010) concern that the levels and quality of educational outcomes achieved by learners are far below the national targets. Moreover, the National Development Plan Vision 2030 views foundational skills in science as an essential component of a good education system (The Presidency, 2011). A sound foundation in science education can arguably increase learner interest and continuity in studying science, thereby increase the pool of learners who can pursue science at tertiary level, which may ultimately reduce the country's skills shortage. Thus, by improving teaching and learning (natural science in this case), as the Department of Basic Education [DBE] (2011) asserts, learners will benefit from a higher quality of education and the nation as a whole will also benefit as school graduates with better skills and knowledge levels enter further and higher education and the workplace. However, as DBE (2011) argues, without substantial improvements in the learning outcomes, the future development of the country will be seriously compromised. In this paper attention is drawn to some of the teaching and learning issues that potentially contribute to learner understanding of and achievement in natural sciences and technology.

Teaching and learning of natural science

This paper is premised on the Curriculum and Assessment Policy Statement (CAPS) Grades 4–6 Natural Sciences and Technology (DBE, 2011) aims that, effective teaching and learning of natural sciences and technology should develop learner's ability to: (1) complete investigations, analyse problems and use practical processes and skills in designing and evaluating solutions; (2) grasp scientific, technological and environmental knowledge and apply it in new contexts; (3) understand the practical uses of natural sciences and technology in society and the environment and have values that make them caring and creative citizens. The paper further draws on James and Pollard's (2006) principles of teaching and learning (in general), which advocate that teaching and learning should: equip learners for life in its broadest sense; engage with valued forms of knowledge; recognise the importance of prior experience and learning; require the teacher to scaffold learning and ensure that needs assessment is congruent with learning and promote the active engagement of the learner. Additionally, the paper subscribes with the notion that effective science teachers should also know and understand how learners learn science as well as the theories related to effective learning, how the content is represented, the scope and sequence of the subject matter as well as the level and appropriateness of the language of instruction (Luneta, 2012).

The significance of teaching and learning of natural sciences and technology is crucial and forms a critical part of the discussion for several reasons. Naude (2015) argues that when children in the South African schools enter the intermediate phase, they engage with a demanding science curriculum, which requires a higher level of depth and detail different from the foundation phase curriculum. As a result of this gap between the phases, children are largely left to the development of their spontaneous development, based on some *ad hoc* instruction. Complicating the matter, Magano (2009) highlights that some teachers have an attitude towards the teaching of certain knowledge areas, which has a negative impact on the teaching of natural sciences as these concepts are also critical in establishing learner's basic scientific skills. From the international perspective, Fraser-Abder (2011) argues that existing evidence indicate that only a small amount of the students[2] who go through the school system develop any useful scientific literacy. She further contends

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2   The term 'student' is used interchangeably with learners, as the international literature mainly uses 'student' while in South Africa we use 'learners'.

that schools keep on producing graduates who lack even a basic understanding of science and technology, with negative attitude towards science and with no fully developed critical thinking skills capability. Thus, effective teaching and learning of natural sciences and technology becomes vital to develop a stronger foundation required in the next levels.

The goal of science education, Osborne and Dillon (2008) argue, is to develop students' understanding both of the canon of scientific knowledge and of how science functions. Thus, effective and quality science teaching can help to develop the necessary inquiry abilities and a sound learning foundation for science concepts, leading to the desired learner performance and outcomes. Chalufour (2010) asserts that cognitive stimulation in the early years is critical for brain development and that young children have cognitive capacities far beyond what was previously believed. Learning, according to James and Pollard (2006) should aim to help individuals and groups to develop the intellectual, personal and social resources that will enable them to participate as active citizens, contribute to economic development and flourish as individuals in a diverse and changing society. The National Center on Time and Learning (2011) argues that science education should build on children's innate curiosity, expanding their scientific knowledge and engagement over time as they examine objects, design and analyse investigations, collect data and discuss and defend their ideas. Chalufour (2010) believes that effective science teaching needs to embrace knowledge and science processes and practices, as well as provide multiple opportunities for students to use these processes and apply them across many experiences. However, she argues that many early childhood teachers are unprepared to promote science inquiry and learning in their classrooms due to the way science was presented to them as students, a static collection of facts to be transmitted by their teachers and memorised by students. The American Association for the Advancement of Science (AAAS, 1990) state that science teaching that attempts solely to impart to students the accumulated knowledge of a field leads to very little understanding and certainly not to the development of intellectual independence and facility. With the critical and scarce skills shortage in SA, quality natural sciences and technology teaching and learning at primary school level can be a good investment.

Research design and methodology

The reported study used a mixed methods approach with the aim of obtaining breadth and depth of understanding and corroboration of findings while offsetting the weaknesses inherent in using either a quantitative or qualitative method alone. In Hoadley's (2012) view, mixed methods are increasingly regarded as crucial in obtaining valid and reliable understandings of classroom knowledge and processes of its transmission. A mixed method design allows for triangulation, which requires careful analysis of the type of information provided by each method, including its strengths and weaknesses. The participants for both the quantitative and the qualitative stages were natural sciences teachers in the Intermediate Phase (Grades 4–6) from public rural, township, urban and farm schools spread across eight school districts in the Eastern Cape Province, a large and predominantly rural province in South Africa. Permission to conduct the study was requested and granted by the Provincial Department of Education Superintendent, as per their research policy requirement. Data was collected using classroom observation during the teaching of a science lesson and a questionnaire.

Classroom observations

According to Cohen, Manion and Morrison (2011), observation as a research process affords the researcher an opportunity to collect live data from natural occurring social situation. An observation tool informed by literature review and questions from other previously used observation instruments was used (*see appendix 1*). The tool comprised the following foci: classroom management; instructional learning; teacher pedagogical content knowledge and planning; and general comments. The classroom management section focused on classroom description, seating arrangements (gender, language, race and special needs), learner interaction and access to materials and strengths and weaknesses of the classroom environment. Instructional learning was divided into three sections: lesson delivery, conceptual focus of the lesson and assessment during the lesson. For each of these sections several observational guiding questions were posed. The last section on teacher pedagogical content knowledge and planning also comprised many guiding questions. These areas of focus were developed based on key attributes for successful science teaching.

A purposive sampling technique focusing on natural sciences and technology teachers in Grades 4–6 and willingness to be observed teaching was applied. Twenty two primary school science teachers, 20 females and two males, were observed teaching a science lesson. Table 1 below summarises the characteristics of the observed classrooms. Of the 22 classroom observations, six 4th grade classes were observed, seven 5th grade and nine 6th grade classrooms. In 4th grade the number of learners varied from 27 to 57 in one classroom, in 5th grade from 26 to 99 learners in a classroom and 6th grade from 4 learners to 82 learners in one classroom. The coding and analysis of the classroom observation data followed the iterative process as suggested by Miles and Huberman (1984). The observation forms were reviewed to determine common trends and emerging issues. This led to the identification of common themes and issues presented and discussed in the findings section.

Table 1: Characteristics of 22 observed classrooms

Grade	# of observed teachers	Male	Female	School Types			
				Rural	Township	Farm	Urban
4	6	0	6 (100%)	2 (33%)	1 (17%)	1 (17%)	2 (33%)
5	7	1 (14%)	6 (86%)	1 (14%)	4 (57%)	1 (14%)	1 (14%)
6	9	1 (11%)	8 (89%)	5 (56%)	1 (11%)	1 (11%)	2 (22%)
Total	**22**	**2**	**20**	**8**	**6**	**3**	**4**

Questionnaire

A questionnaire comprising Likert scale and open-ended questions was used to elicit teachers' opinions regarding: teaching of science in their respective grades; how learners learn science in their classrooms; and their general beliefs and philosophy about science teaching (*see appendix 2*). One hundred and eight natural sciences and technology teachers were asked to complete a questionnaire. The use of a questionnaire also intended to afford teachers who were not observed teaching an opportunity to participate in the study. Of the 108 questionnaires distributed, 55 (51%) responded. The completed

questionnaires were imported into the Statistical Package for the Social Sciences (SPSS) for frequency distribution analysis.

The respondents were from 32 schools spread across eight districts (4 from each district), purposively sampled. The sampling focused on science teachers in Grades 4–6, ensured that each grade level was represented, and that each teacher was willing to participate in the research. They were from rural (54%), township (29%), and urban public (15%) and farm schools (2%) spread out across the districts. The 55 teachers who completed the questionnaire were 26% males and 74% females. They were all South Africans and the racial distribution was as follows: blacks (89%), whites (6%) and coloureds (6%). About 17% of the participants' age range between 25–34yrs, 47% were between 35–44yrs, 24% were between 45–54yrs, 13% were between 55–59 and above. The majority of the respondents had taught for more than 10 years. Also, all the teachers taught more than two learning areas at different grade levels.

Findings

A brief description of the infrastructure of classrooms is presented, followed by findings from the questionnaire. Thereafter, the themes emerging from the classroom observation are presented and finally, a discussion of the qualitative and the quantitative findings.

Brief description of the observed classrooms (n=22)

Findings from classroom observations show that the lack of proper school buildings, classroom environments conducive to learning, teaching and learning resources, and proper sanitation facilities were common in many of the visited schools. In rural schools (65%) the infrastructure was dilapidated, whereas most township and urban schools had recognisable physical infrastructure. Over 50% of the classrooms were overcrowded with learners seated on a very few old desks and broken chairs arranged one behind another while in some classrooms learners were seated in groups. There was a clear lack of space for both learners and the teacher to freely move around. In 83% of the classrooms teachers stood in front of the classroom with limited movement and learners walked on top of the desks to reach the other end of

the classroom. Nevertheless, a few of the observed classrooms (17%) did have enough space for both the teacher and learners to move around. These classes were usually located in a big hall or church building where there was a multi-grade classroom teaching. The cement floor in some classrooms had cracks and dust, not healthy for breathing, whereas others had old dirty wooden floors or mud floors. Despite these conditions, tidiness was noted as one of the positive things in the observed classrooms.

The classrooms were also characterised by walls bare of posters or illustrations. Eby, Herrell and Jordan (2009) assert that drab, undecorated spaces lead to expectations of dullness and boredom. These authors argue the necessity for creating a therapeutic environment that will allow all the students to succeed. The physical environment hardly supported science learning; a conclusion based on the lack of space for learners to move around and resources to engage in the inquiry-based science activities. In some classroom (though not many) learners were seated in groups of seven. However, the arrangement of groups raises questions regarding their formulation, as some learners had their backs towards the blackboard, the main teaching aid.

The teaching and learning environment, especially of science, plays a fundamental role in the learners' success. The Organisation for Economic Cooperation and Development (OECD, 2009) highlights that the quality of the learning environment is the factor affecting student learning and outcomes that is most readily modified. The findings reported in this study indicate that the observed classroom environment did not support effective teaching and learning. This is despite the research that indicates that young learners develop science understanding best when given multiple opportunities to engage in science exploration and experiences through inquiry (Bosse, Jacobs, & Anderson, 2009; Gelman, Brenneman, Macdonald & Roman, 2010). The physical structure of a classroom is a critical variable that affects student morale and learning (Phillips, 2014) and therefore should be inviting to make students enthusiastic about learning. A science classroom should inspire learners and not depress them and make the subject seem difficult, especially learners from disadvantaged backgrounds. According to Marcinek (2011), the physical space and environment, the lighting, the colour of the walls and the arrangement of tables and chairs affect our overall mood, our ability to learn and productivity. Teachers should therefore ensure that the classroom environment is conducive for learners to progress well.

Classroom teaching and assessment approaches

In the questionnaire, teachers were asked about their classroom teaching and assessment approaches. Their response rate to the questions is shown in Table 2 below.

Table 2: Teachers' responses to questions on the questionnaire (n= 55 responses)

Statement	Never	Sometimes	Mostly	Always
Begin a session by determining prior knowledge on the topic and their expectations for the training session	10%	8%	45%	37%
Do you set appropriately challenging expectation for learners		17%	51%	32%
Learners listen to lecture style presentations	28%	30%	32%	11%
Use teaching strategies that promote learner enquiry		10%	54%	37%
Choose different teaching strategies for different instructional purposes		20%	33%	46%
Maintain an orderly, purposeful learning environment for science learning	4%	17%	35%	44%
Use variety of assessment methods		4%	28%	69%

Evident from the data is that the majority of teachers (82%) begin a session by determining prior knowledge on the topic; set appropriately challenging expectation for learners (83%); use teaching strategies that promote learner enquiry (91%); employ different instructional approaches and maintain conducive learning environment for science learning (79%); and employ a variety of assessment methods (97%).

Teachers were also asked to reflect their beliefs in regard to their teaching philosophy, their responses are shown below:

Table 3: Teaching and learning of natural science

Statement	Frequencies	Percentage
When teaching I usually • Deal with facts and real life situations • Deal with ideas and theories	467	8713
It is more imortant to me to • Lay out the material in clear sequential steps • Give an overall picture and relate the material to other	3021	5941

Though 87% of the teachers indicated that they deal with facts and real life situations as shown above, findings from the 22 observed classrooms show that 88% of the teachers facilitated connections between prior knowledge and new learning while 12% did not. In several classrooms teachers began their lesson by asking a few questions related to the previous lesson. In some classrooms teachers introduced the new lesson by writing the topic on the board and then asked questions about it. The paraphrased interchange below illustrates this point.

Teacher: *Today we are going to talk about electricity. Does anyone of you know what electricity is?*

Learner: *Electricity is what we use at homes to light or cook*

Teacher: *Yes, electricity is what we use at home.*

Teacher: *Yes, what else can you say about electricity?*

During classroom observations about 59% of the teachers did not express their expectations of the learners and the learning goals. While, the other 41% of teachers only communicated the learning goals, with some teachers even writing the goals on the chalkboard.

In all the classrooms teachers used a lecture style, telling method and textbook reading approach. The teaching mainly focused on the imparting of science facts that were not integrated in the learners' real world. For example, in one classroom the topic was about plants. However, instead of taking the learners outside to observe and explore the surrounding vegetation, learners

were kept in the classroom to observe two dead plants. The entire lesson was based on transmission of facts with the assumption that learners knew about plants from their community. Based on observations, in 45% of the classrooms there were opportunities to make learning meaningful by making deeper connections that will facilitate knowledge construction. For example, the teacher could have drawn examples from the learners context to clarify the topic under discussion. However, in 55% of the observed classrooms teachers did not provide opportunities to make learning meaningful. Additional to the employment of the above instructional approaches was that very little visual material was used to provide clarity or emphasise the point under discussion. Ironically, in almost all the classrooms, opportunities were available to employ materials that could easily be found around the community.

Based on the classroom observations 80% of the teachers did not provide challenging learning tasks to the learners. This means that the activities did not require learners to make any analysis, prediction, synthesis or drawing of conclusions. The remaining 20% of teachers only required learners to analyse and draw conclusions on the assigned learning activities. Also of interest from the data was that the questionnaire finding indicating that most teachers use teaching strategies that promote learner inquiry did not resonate with the classroom observations as the inquiry learning process was not used in the classrooms. Furthermore, in about 68% of the classrooms the differentiated instruction and assignments were lacking and the content and resources seemed not matched to the expected learner's level. Additionally, during lesson instruction 75% of the teachers hardly gave clear instructions or modelling before students began an assigned activity.

In about 94% of the classrooms learner engagement during instruction was through question and answer method intended to check their level of understanding. The observation data analysis shows that in 67% of the classrooms teachers did not pose a range of questions/tasks that required different levels of learner response. However, most teachers appeared to be impatient when learners were silent or gave responses that were considered incorrect. In most classes (72%) learners were not encouraged to explain what and why they were learning and to reflect on their thoughts, processing and strategies. Rather, the learners who gave incorrect responses were not challenged or probed as to how they reached their conclusions. Commonly, teachers would tell the learner, "*Let's hear from other people*" or "*What do others think*?". Control was seldom delegated to the learners to self-initiate and reflect on their learning.

Encouraging from the observed classrooms was that 95% of the teachers did not struggle with natural science content knowledge. However, the remaining 5% of teachers demonstrated some science misconceptions, lack of clarity and incomplete teaching of the topic or concept. For example, in a lesson on electricity a teacher referred to a dry cell as a battery. The learners were not taught the components of a dry cell nor did the teacher explain the difference between a dry cell, wet cell and battery. Further, the teacher did not bring the dry cell to class so that learners could explore it. Throughout the lesson the teacher read from the textbook. Based on observation, it was in only a third of the classrooms where the teaching approach/method matched the lesson topic.

Common in most of the observed classrooms was that at the end of the lesson teachers would give learners some questions (three at most) or a problem to work on in groups. These groups were usually gender mixed. Evident during the group work was that not much attention was given by the teacher to ensure that all learners benefitted from the group work. In 67% of the classrooms the teachers dominated the instruction and in only 33% there was equal involvement of teacher and learners. In 55% of classrooms, the teacher did not appear to have rapport with the learners. The relationship was professional but not warm and a power relationship was visible between the teachers and learners. Research indicates that the best teachers are able to inspire a love of learning in their students, to build a positive relationship with their students, to get to know them and to show interest in their overall development and progress (O'Neill, 2007).

Table 4: Summary data from classroom observation instrument

STATEMENT	YES	%	NO	%
Learning tasks that are challenging to learners, requiring them to analyse, predict, synthesise and draw conclusion.	N=20 4	20%	16	80%
Opportunities to make learning meaningful or available.	N=20 9	45%	11	55%
Evidence is differentiated instruction and assignment is apparent. Content and resources are matched to learner level.	N=19 6	32%	13	68%
Providing clear instructions and modeling before learners begin an activity.	N=16 4	25%	12	75%
Posing range of questions/task during instruction that require different levels of learner response	N=18 6	33%	12	67%
Learners are encouraged to explain what they are learning and why, and to think about their thoughts, processing, and strategies.	N=18 5	28%	13	72%
Assessment criteria are clear, explicit, and aligned to task and curriculum.	N=15 10	67%	5	33%
Control is delegated to the learners to self-initiate and reflect on their learning.	N=18 6	33%	12	67%
Is there any evidence during the lesson observed that the teacher struggles with Natural science content knowledge?	N=19 1	5%	18	95%
Is the teaching approach/method used appropriate for teaching the topic of the lesson? Does it allow effective transmission of knowledge?	N=18 6	33%	12	67%

Teachers' perceptions regarding how learners learn natural science in the observed classrooms

In the questionnaire, teachers were also asked about how learners learn natural sciences and technology in their classrooms. The used questions and responses are represented in the table below:

Table 5: Summary data on how learners learn natural science in the questionnaire

Statement	Never	Sometimes	Mostly	Always
Encourage learners to share their science ideas with the class		6%	44%	50%
Learners solve science problems on their own	6%	38%	38%	19%
Learners show active participation during the lesson	2%	13%	35%	50%
You ask learners to explain reasoning behind an idea		15%	59%	26%
Learners work on science investigation		22%	42%	36%
Use group work as a teaching approach		24%	34%	42%
You link the importance of science to career choices	2%	13%	38%	47%

From the above table, the questionnaire results show that 94% of the teachers claim to encourage learners to share their science ideas with the class, a finding that did not resonate with classroom observations. In almost all the observed classrooms learners learnt through verbal instruction, with hardly any visual and practical activities. Learners were only given time to discuss questions developed by the teacher in groups and were never given an opportunity to develop their own questions or conduct an investigation. However, observation of the group dynamics indicated that learners do not share ideas; groups were dominated by the more talented learners. The TLRP (2006) states that teaching and learning should engage learners with the big ideas, key processes, modes of discourse and narratives of subjects so that they understand what constitutes quality and standards in particular domains. This engagement was missing in 72% of visited and observed classrooms. About 80% of the observed teachers did not seem to grasp their learners' preferred learning styles, which should inform the selection of their pedagogical approaches. Also, it was evident that teaching was routine and without critical reflection.

Discussion

The teaching and learning of science in the observed classrooms hardly aligns with the DBE (2011) CAPS teaching aims for natural sciences and technology, the cognitive and practical process and design skills that learners should develop. According to the CAPS (DBE, 2011), the teaching and learning should promote understanding of science as activities that sustain enjoyment and curiosity about the world and natural phenomena. Learners should be able to raise questions, identify problems and issues, predict, plan and conduct investigations, communicate results, to mention a few. However, teaching in the observed classes hardly promoted these goals and objectives. Some incongruence emerged between the findings from the completed questionnaire and classroom observations. For example, the questionnaire revealed that 81% of teachers claim to begin a session by determining a learner's prior knowledge; a finding not borne out by observation. In most cases preliminary questions were raised to remind learners about previous lessons and not to diagnose their comprehension level. In most classrooms, the teacher's questioning skills focused on comprehension and never moved to application, analysis or synthesis as suggested by Blooms Taxonomy. Considering the learner performance in South Africa (DBE, 2013 & 2014), questioning can be used as an effective tool whereby one determines learners' thinking, experiences and shortfalls regarding the topic under discussion. Hence, a teacher should plan and reflect on the type of questions to be asked, something that was missing in most classrooms. Sound teaching, according to the AAAS (1990), usually begins with questions and phenomena that are interesting and familiar to students, not with abstractions or phenomena outside their range of perception, understanding, or knowledge. Moreover, effective questioning is essential to developing scientific habits of mind (National Research Council, 2012). Based on data from the questionnaire and classroom observation, there was an evident mismatch or conflict of ideas. This mismatch indicates a possible flaw in self-reporting, which finds that teachers respond in a manner that will please the researcher, rather than an honest reflection on their own practice. This indicates a potential methodological flaw when collecting data by questionnaires alone and hence the need for the use of various data collection instruments.

The questionnaire data shows that most natural science teachers (62%) used a lecture style to teach their learners. These findings concur with the classroom observation data. In all the classrooms, the dominant teaching approach was

the lecture style and telling method. There was a lack of differentiated instructional approach to accommodate learners with various abilities and learning styles. This raises questions as to whether teachers have access to a reservoir of pedagogical approaches that they can use in their classrooms for a diverse group of learners. To accommodate every learner, teachers should explore various teaching approaches that can benefit the different learners. Schleicher (2012) argues that the kind of teaching needed today requires teachers to be high-level knowledge workers who constantly advance their own professional knowledge as well as that of their profession. In most classrooms, teachers appeared to hardly understand or know their learner's preferred learning style. This knowledge can help in choosing the appropriate teaching method that will accommodate diverse learners in their classrooms. Davidoff and Berg (1990) suggest that learning is more effective if the teaching methods used match students' preferred learning styles. In addition, effective learning occurs when the conditions for learning are maximised through the deliberate use of instructional design principles that consider learning differences and increase the possibilities of success for all learners; which is also the foundation of the DBE (2011) CAPS. Thus, effective teachers personalise (supposed to) learning for their learners, as they recognise that they develop at different rates and have different abilities. That being said, the challenges associated with the implementation or use of learner centred education approach are widely noted (Vavrus, Thomas & Barlett, 2011: Schweisfurth, 2011). Schweisfurth (2011) identifies the challenges as having been labelled a 'paradigm shift' and the failure metaphorically described as 'tissue rejection'. However, Schweisfurth (2011) argues that some successful implementation seems most likely in contexts where teachers are supported in a multi-stranded, sustained, joined-up manner, and are 'scaffolded'. Hence, I argue that for teachers to succeed in using learner centred approaches in their classroom they require some support from their colleagues, districts and the department of education. Obviously, the nature of support will vary as it will include coaching and mentoring, material resources, infrastructure and more.

To vary teaching strategies, science teachers should constantly reflect on their practice to determine if learners are still benefiting from their lessons. Evidently, most teachers were not familiar with reflective teaching practice. Reflective teaching practice is viewed as a means by which practitioners can develop a greater level of self-awareness about the nature and impact of their performance, an awareness that creates opportunities for professional growth and development (Osterman & Kottkamp, 1993). I argue that an effective and

a caring teacher comprehends the significance of making sure that every learner is involved in the learning process, and that they benefit from every lesson taught in the classroom. Thus, it is critical that teachers are reflective in their teaching, as this alerts them to struggling learners as well as their weaknesses or strengths in a particular lesson or topic. Teaching and learning, as James & Pollard (2006) contend, should equip learners for life and engage them with valued forms of knowledge.

Findings also indicate that the natural science teaching hardly promoted inquiry abilities in learners, as they learnt through transmission of established knowledge. The majority of classes lacked practical exercises which promote deeper learning of science content knowledge and critical thinking. In her study, Ngubane (2014) found that educators did not grant learners an opportunity to assimilate and make sense of new knowledge as they were expected to respond to many close-ended questions. Young learners, as Halverson (2007) argues, are naturally curious and constantly explore the world around them. Therefore, science teaching should provide the opportunity for learners to expand their natural curiosity and building of theories. This is particularly important in South Africa given the low numbers of learners who pursue science at FET level and eventually at tertiary level. The use of an inquiry teaching approach at the primary level can cultivate learner inquisitiveness and interest in science. The OECD (2009) argues that even excellent pre-service training for teachers cannot be expected to prepare them for all the challenges they will face throughout their careers. Thus, use of inquiry based teaching and learning has implications for teacher continuous professional development provided by school districts in South Africa. Furthermore, it has implications for school facilities such as laboratory, libraries as well as the number of learners in each classroom.

Learner assessment and their learning, as DBE (2011) states, is integral to the teaching and learning process. However, the assessment approach, mostly the question and answer approach, common in many classrooms was less effective for science learning. Effective assessment should be carefully, thoughtfully and intentionally planned to achieve its goal. This does not mean, I argue, that teachers should not pose spontaneous questions to learners, but the lesson assessment process should not be entirely based on unplanned questions. Learners should be provided with projects that require them to develop a question, predict, formulate a hypothesis, conduct an investigation, collect and analyse data, draw conclusions, develop reports and make presentations to their peers. This approach will help to address learner

diversity in classrooms and ensure cognitive domain gains suggested by Bloom's taxonomy. Furthermore, it will help the teacher with more insight regarding his/her teaching practice or facilitation of a particular science lesson.

Conclusion

This paper reveals how natural sciences and technology is taught in some schools in the EC province. It is concluded that the teaching approaches used are not likely to attract and inspire young learners to continue studying science at higher school and tertiary level. The teaching approaches are intellectually non-stimulating, making science boring and confusing, as they treat the subject as isolated from learner's daily lives. South Africa needs active and stimulating classrooms that will inspire the young ones to continue studying sciences despite the existing myths about it. It is therefore critical that we pay close attention to how we train and support both new and experienced teachers. To change the status quo of the classroom results, Intermediate phase science teachers should be imbued with knowledge of various pedagogical approaches that will cater for their diverse learners. The teaching of science should promote deeper learning that sets a foundation for the next grade level and later learner success and advancement in life.

It is also concluded that the poor quality of science teaching that some learners receive, especially those from previously disadvantaged backgrounds, can be one of the contributing factors towards poor learner performance, if not attended to soon. Also, many teachers lack the ability to reflect on their own practice. Effective teachers are reflective in their practice. They are constantly aware of what is going on, continuously make changes and adapt their teaching practice to ensure learner success. They are creative and do not fear to take risks and make decisions to improve their performance and that of their learners. These teachers can creatively adapt and teach any group of learners with any learning styles. Based on the findings, Intermediate phase natural sciences teaching in the Eastern Cape requires urgent attention as it hardly aligns with most of the CAPS principles of teaching and learning.

Also critical is the physical environment where the teaching and learning process takes place. The environment hardly corresponds with the classroom objectives in terms of learner interaction and teaching approach. It is

concluded that teachers can improve the state of their classrooms by ensuring that furniture, walls and floors are well maintained. This will increase their learners' sense of well-being and motivation. Every teacher should ensure that the learning environment is conducive for teaching and learning. Similarly, the Department of Education has a responsibility to ensure that all the classrooms are provided with useable furniture and that broken chairs and tables are fixed or replaced with new ones. Finally, more research focusing on teaching and learning of science at public primary schools should be undertaken in order to gain views and more knowledge regarding challenges in various contexts.

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The role of professional learning communities in facilitating teachers' pedagogical adaptation and change

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Abstract

This article draws on a two-year PLC process to explore the role of professional learning communities (PLCs) in facilitating teachers' pedagogical adaptation and change. Situated within the context of the current South African Curriculum and Assessment Policy Statement (CAPS), which is described as tightly scripted and regulated, this article argues, drawing on Nancy Fraser's conceptualisation of justice, that there is a need for teachers to dialogue about ways in which the pedagogical process can include ethical concerns of recognition of student cultural knowledge and a representation of diverse social-cultural groups in the process of knowledge redistribution, and suggests that PLCs hold the potential to mediate this process. Drawing on Bourdieu's thinking tools, this article conceptualises teachers' pedagogical adaptation and change via the PLC process, as a form of 'habitus engagement' that engages with the teachers' firmly held pedagogical dispositions, their 'pedagogical habitus' which over time has acquired a depth of complexity that is difficult to shift.

Introduction

Situated in South Africa, this article discusses the role of professional learning communities (PLCs) in changing or adapting teachers' pedagogy in consonance with a socially just teaching orientation. The discussion for this article draws from a two-year PLC process where teachers from different school contexts collaborated together to find ways to conceptually and pragmatically shift and change their pedagogy towards a more socially just teaching orientation (Fataar & Feldman, 2016). The teachers, who were mostly serving students from low-income areas, were invited to participate in an on-going dialogical process of a PLC to interrogate their current teaching practices to find ways to shift, adapt or change their pedagogies to include

Fraser's notion of justice in their teaching orientation. Fraser emphasises the need to consider a recognition of students' social-cultural constructions of identity and student participation within the redistribution of school knowledge. This entails teachers finding ways in which they can create opportunities for students to engage in activities and dialogue that draw the students' social-cultural knowledge into the school curriculum knowledge, i.e. CAPS, as well as involving the students in an engagement with wider social worlds.

In the first year, five teachers from different school contexts committed to the PLC process. During the second year one teacher from the first year remained in the PLC and was joined by six teachers from three different school contexts. The focus of the PLC discussions over the two-year period was not aimed at working outside of, or undermining the CAPS framing, but rather finding ways within the current CAPS system to generate an enriched, socially just teaching environment (Feldman & Fataar, 2014). The PLC was based on a pedagogical perspective aimed at working against the deterministic orientation associated with a scripted curriculum towards providing a platform for the teachers to explore the spaces of intervention and possibilities of adapted pedagogy in order to promote more productive student educational engagement.

The current South African Curriculum and Assessment Policy Statement (CAPS), which is described as regulated, prescriptive and externally controlled in its implementation approach, has tended to reduce teaching to a scripted pedagogy that expects teachers to teach to the test in a climate of standardised systemic testing intended to improve the quality of education in schools (Ramatlapana & Makonye, 2012). Fataar (2015) argues that this policy discourse, that has dominated current educational developments, has eroded teacher autonomy and leaves little space to stimulate and meaningfully engage students in their learning. This article suggests, therefore, that given the current curriculum framing and positioning of teachers, there is a need to instantiate a different, more socially just pedagogical orientation in teachers' classroom practices and suggests that the dialogical PLC process holds the potential to mediate a change towards a more engaging form of pedagogy that includes all students in the learning process.

The article draws on Bourdieu's thinking tools to consider teachers' pedagogical adaptation and change, which is conceptualised as a form of 'habitus engagement' (described below) that engages with the teachers' firmly

held pedagogical identities (Feldman & Fataar, 2014). Habitus engagement suggests that any adaptation or change in the teachers' pedagogy must contend with teachers' embodied pedagogical dispositions from their initial teacher training and subsequent educational fields they have inhabited. I describe these embodied pedagogical dispositions which have formed over time as the teachers' pedagogical habitus, and which have acquired a depth of complexity that is difficult to shift. I suggest, therefore, that given the current South African school context and the CAPS scripted pedagogical framing, PLCs can provide a platform to support on-going deliberate conversations that engage with the durability of the teachers' embodied pedagogical habitus to include new pedagogical possibilities that involve a more enriched and socially just teaching orientation.

South African schooling context

The current South African curriculum policy reform, the Curriculum and Assessment Policy Statement (CAPS) that was implemented in March 2011 is based on a mode of teaching that includes strong classification and framing that makes curricula knowledge visible and explicit to all students (Bernstein, 1975). The CAPS was implemented in response to an educational system that was described as exacerbating, rather than ameliorating, inequality in student educational outcomes, particularly in working class communities (Jansen & Christie, 1999; Christie, 2008; Fataar, 2010). In other words, it was based on the plausible argument that education in South Africa's democratic post-apartheid school system was failing the students who needed it the most, i.e. students from working-class homes and communities. Maringe and Moletsane (2015, p.348 citing Weeks, 2012) argue that not only is the educational system failing our students, three quarters of South Africa's schools can officially be described as dysfunctional, and are not serving the purposes for which they are meant. Thus, South African schooling remains precariously unsatisfactory for the majority of learners and the education system can be described as resembling a "two nation or two economies state" (Fleisch, 2008, p.1). On the one hand, schooling takes place in former white schools that are well-resourced and provide a decent quality of education to white, coloured and black children of the middle classes, while a second system, which is for the most part poorly resourced with a poor infrastructure, caters for children (mostly black African and coloured learners) from poor working class townships, rural areas and informal settlements (Maringe & Moletsane, 2015).

In response therefore to the immense diversity and on-going inequality found in the South African schooling system, the CAPS was implemented with the aim of shifting the curriculum policy focus to a controlled transfer of knowledge and learning with the aim of attempting to meet the basic educational needs of all learners and, in particular, those in impoverished circumstances.

Ramatlapana and Makonye (2012) and Msibi and Mchunu (2013) criticise CAPS for being a pre-packaged curriculum that restricts teacher autonomy and professionalism. The emphasis on the use of workbooks, text books and a tightly scripted curriculum designed ostensibly to improve the educational quality of teaching in schools (Spreen & Vally, 2010), has produced an educational regime that demands uniformity in curriculum implementation across South African schools which is strictly monitored by governmental officials (Ramatlapana & Makonye, 2012). CAPS is further accompanied by a results-driven assessment regime that requires Annual National Assessments (ANAs) to be written by all schools in Grades 3, 6, 9 as well as a National Senior Certificate (NSC) examination at the end of students' twelve years of formal schooling (Department of Basic Education, 2016). The CAPS, as a policy orientation, has therefore resulted in a "preponderance of policy discursivity that has had pernicious consequences for teachers' relative autonomy" and arguably leaves little pedagogical space for an enriched and critical perspective in education or an opportunity for socially engaging pedagogy to be established (Fataar, 2012, p.57).

It is within this predominantly narrow focus to teaching and learning in schools, as is currently packaged in South Africa's curriculum policy approach that I argue for the role of PLCs to support teachers dialoguing about ways in which they can adapt and change their teaching practices to include a recognition and representation of students' diverse social-cultural groups in the process of knowledge selection and knowledge redistribution. This approach, within the South African schooling context, builds on Fataar's (2015) argument that the current narrow scripting of the school curriculum fails to leverage a rich curriculum and pedagogical platform that accords schools and teachers the necessary conceptual space to engage students in productive learning. A pedagogically just orientation, therefore, requires that we find ways to bridge the gap between student learning and the school's functional and pedagogical orientations by placing student subjectivities and their lifeworld knowledges and literacies at the centre of teachers'

pedagogical repertoires and their curriculum engagement with their students (Fataar, 2015). Christie notes:

> the challenge is not to view what exists as inevitable and unchanging – and not to underestimate the task of changing what exists. The task is to keep envisaging alternatives, to keep challenging with new ideas, and to keep pressing against the boundaries of common sense towards something better. The task is always to hold an ethical position on education, which entails a commitment to continuously thinking about how we may best live with others in the world we share. As educators our task is to enrich debates from within educational discourses (2008, p.216).

This article, therefore, suggests that the dialogical and on-going conversations of PLCs, as a form of habitus engagement that engages with and challenges the teachers' embodied pedagogical dispositions, plays a crucial role in challenging teachers to find ways to enrich the teaching and learning environment by adapting and changing the manner in which they develop and implement lesson units. This combines Fataar's (2015) challenge to create classroom practices that leverage the pedagogies necessary for productive school engagement for all students and Christie's (2008) invitation to continually press against the boundaries of the status quo towards something different, something better.

The role of professional learning communities in adapting and changing practice

Professional learning communities (PLCs) can be described as a learning space in which "teachers work together and engage in continual dialogue to examine practice and student performance and to develop and implement more effective instruction practice . . . teachers learn about, try out and reflect on new practices in their specific context, sharing their individual knowledge and expertise" (Darling-Hammond & Richardson, 2009, p.3). PLCs are fundamentally about professional and collective teacher learning with a specific focus on problematising the learning needs and outcomes of the students (Stoll & Louis, 2007; Katz & Earl, 2010; Brodie, 2013). Central to the learning process in a PLC is the on-going dialogue that focuses on teacher development and improved student learning. Senge (1994) makes a distinction between discussion and dialogue, stating that, while discussion is intended to provide a space for the voicing of viewpoints, dialogue goes beyond individual understanding and allows the participants to gain insights

that they would not have been able to achieve individually. PLC work is thus enhanced by the collaboration of the PLC members dialoguing together around the PLC's focus of inquiry.

A crucial element within all PLCs includes having a clear organisational purpose or focus that the community collectively enquires into (Brodie, 2013). A challenging focus is one that requires teachers to reconceptualise and rethink their existing practices, challenge taken-for-granted assumptions and make adaptations or changes in their practice based specifically on the needs of their particular students within the context of their school. The intention of PLC work is to build collaborative learning communities where relationships and supportive conditions can be used to assist teachers to shift from the traditional isolation which is often found in schools, to that of a more community-based culture of learning. The value of the PLC lies in its focus both on process (how we teach and students learn) and product (or the outcomes) of the learning process. Research indicates that there is a measurable difference in student achievement in schools where teachers form PLCs and place student learning at the centre of their focus and inquiry with an unrelenting attention to successful student learning (Stoll & Louis, 2007).

By way of providing practical examples of how the dialogical engagement of the PLC holds the potential to shift and change the way in which teachers engage students in the learning process, I offer two examples that emanated from our PLC dialogue and related classroom activity; one is from a Grade 6 English class and the second is from a Grade 6 Geography class. The focus of the PLC's conversations centred on problematising ways in which the PLC teachers could enrich school learning opportunities by inviting students into meaningful participatory educational experiences that both recognised student subjectivities and enabled a representation of the diverse social-cultural student groups in the process of knowledge selection. In order to facilitate this approach to learning in a Grade 6 English class, one teacher chose to negotiate, based on the CAPS requirements for the term, a 'theme' that would guide the manner in which the students' learning and written tasks would take place. The decision to find alternative ways to present the school knowledge was made by the teacher following his reflections on the previous term's work. During the PLC, the teachers discussed their concerns regarding the disinterest the students often displayed in the tasks presented in the textbook. Collaboratively the teachers discussed different ways of engaging the students. The decision was made to experiment with moving away from the scripted textbook tasks to engaging the students in negotiating both the 'what'

and 'how' of the written tasks and assessments. Subsequently, the Grade 6 English class chose the theme of 'music and drama' for the term's lessons. Based on the CAPS requirements and using the theme of 'music and drama', the teacher and students then negotiated the written tasks and assessment opportunities for the term. In this manner, the teacher was able to both recognise the students' diverse cultural knowledge and enable a representation of this knowledge through the redistribution of the school knowledge code.

A second example from a diverse Grade 6 Geography class was a lesson unit on: "Why people live where they do (South Africa)" (CAPS Social Sciences p.32). This unit included reasons for people settling in different areas with a focus on why people move from rural to urban areas. For this lesson the teacher tasked the students with interviewing family and/or community members to investigate why they were currently living where they were. This lesson unit, which by the teachers' own admission, would normally have been presented narrowly as a redistribution of knowledge, i.e. a list of reasons that people move from rural to urban environments, was able to become recontextualised within the learning process as a more socially just learning experience that provided for an opportunity for cultural recognition of the students, their families and community and a representation of the diverse social-cultural groups in the process of school learning. My point of departure, therefore, in arguing for PLCs within the South African schooling context, is based on the view that what is required to enhance the professional agency of teachers, within the current regulative teaching environment which is framed by the CAPS, is a far richer notion of pedagogical practice aimed at leveraging an engaging pedagogical orientation that actively involves all students in the learning process. I suggest that this type of approach is required in a context, such as South Africa, where the space for professional dialogue about ways to enrich the teaching and learning at schools has been eroded by the scripted pedagogical approach of the CAPS, which requires very little dialogue among teachers in schools about their actual pedagogies.

In order to provide a theoretical consideration of how pedagogical change can be mediated through the on-going collaborative PLC dialogue, I now turn to a discussion on the methodo-logic of the two-year professional learning community process.

Facilitating pedagogical justice: the methodo-logic of a professional learning community

In arguing for the logic on which a pedagogically just PLC process can be founded, I draw on Hattam, Brennan, Zipin and Comber's (2009) framing approach which they call the methodo-logic of a research process. This method does not refer to research methods or methodology but rather provides the logic of an approach that includes the guiding principles that underpin the decisions and activities of the project. For a pedagogically just PLC process, this methodo-logic is founded on an ethical commitment to finding ways in which teachers can adapt or change their current pedagogies in consonance with a more pedagogically just teaching orientation. This approach draws on Fraser's (2009) conceptualisation of social justice that considers the dialectic between the redistribution of the school knowledge code, recognition of student social-cultural constructions of identity and a representation within school knowledge of the lifeworld knowledges that the students bring with them to school, combined with Fataar's (2015) argument for the terms on which a pedagogical justice orientation can be leveraged within our current school curriculum framing.

My argument for finding ways to provide a more pedagogically just learning platform for students is evidenced on a Bourdieusian insight. This premise states that students enter schooling from different structural positions due to early-life immersion in the family and communities that embody distinctive qualities of dispositions or 'habitus'. Bourdieu (1984) describes the 'primary habitus' as repetitive patterns of practice and interaction from early childhood that have been internalised within our family. These social habits are based on ways of knowing from our family positions, economic class, and other structural power relations that emerge in different contexts. In schools, students begin acquiring overlays of a 'secondary habitus' as they assimilate the new conditions and new information and scaffold it onto the existing primary habitus. The degree of this secondary assimilation will depend on whether the codes of pedagogic interaction as well as other features in the school site are familiar to the primary habitus. The dispositions of the students' lifeworld-based habitus, therefore, acquire greater or lesser 'capital' value depending whether these cultural codes align with the dominant mainstream curriculum. Bourdieu states that educational systems, and especially schools, reproduce social stratification by maintaining

> the pre-existing order, that is, the gap between pupils endowed with unequal amounts of cultural capital … by a series of selection operations, the system separates the holders of inherited cultural capital from those who lack it. Differences in aptitude being inseparable from social differences according to inherited capital, the system thus tends to maintain pre-existing social differences (1998, p.20).

Students whose embodied cultural capital or habitus aligns with the school system allow those children access to the codes of schooling while denying others the opportunity to achieve success at school or feel that school is in their best interests. These students find that the curriculum makes no connection to the learning from their community contexts or lifeworld knowledges and therefore they see no intrinsic value in engaging with the educational experience.

The conceptual underpinning of pedagogically just PLC work as suggested in this article, is an attempt to bring all three dimensions of a social justice approach into a productive relationship with each other so as to inform the teaching practices of teachers. The aim is to provide teachers with a productive set of conceptual resources that inform their teaching in terms of which they are able to intellectually engage all their students in the learning process. Hattam and Prosser (2008) challenge us to move beyond mere compensatory programmes which are mostly based on a view that the problem lies in student and community deficits. This view challenges a deficit theorising approach that blames the underachievement of minority and low-income students as "a plethora of inadequacies, such as inadequate home literacy practices, inadequate English language, inadequate motivation, inadequate parental support and inadequate self-concept." (Hogg, 2011, p.666) This deficit theorising leads to acceptance of students' low academic achievement and expectations by teachers. While many teachers would dispute holding such views, these views may lurk below consciousness as attitudes or beliefs and provide an obstacle in teachers realising the potential of all their students.

In contrast, a pedagogically just approach to teaching and learning allows teachers to engage with students as individuals, rather than based on assumptions and stereotypes. This allows teachers to move away from "the intense brutality of a system that does not really seem to 'see' children" (Spindler & Spindler, 1983, p.75) to one that engages educators in a deep understanding of the students that they teach. This approach values the recognition and representation aspects of a socially just orientation and challenges meritocracy that privileges conformity and standardisation. Conceptualising a more pedagogically just stance allows teachers to confront

the hegemonic forces that continue to shape curriculum and schooling on a middle-class value system, and find ways to work effectively with the diversity of students to support and value their cultural identities and lifeworld knowledge in order to afford them success within mainstream school learning.

Working with Bourdieu: a conceptualisation of pedagogical change

In this section I offer a conceptualisation of pedagogical change by drawing on the theoretical resources offered by Pierre Bourdieu. By arguing for the role of PLCs as a form of 'habitus engagement', I offer an understanding of how pedagogical adaptation and change can be mediated between the dialogical PLC process and the teachers' practical implementation of their adapted or changed pedagogy at the school site.

Habitus operates as a system of durable, transposable patterns of socio-cultural practices or dispositions gained from our cultural history which stay with us across various contexts. Conditioned primarily during early childhood, habitus operates largely below the level of consciousness and gives one a sense of what actions are possible (or impossible) and provides one with a sense of how to act and respond "without consciously obeying rules explicitly posed as such" (Bourdieu, 1990a, p.76). Habitus includes our ways of acting, feeling, thinking and being and captures how we carry our history within us and how that history plays out in our present circumstances (Grenfell, 2008, p.52).

A crucial feature of habitus is that it is embodied and is not composed solely of mental attitudes and perceptions; it is a whole body experience (Reay, 2004). Bourdieu describes this as 'bodily hexis'. Bodily hexis incorporates a relationship between social structures (or social fields) and one's habitus and refers not only to our motor functions in the form of patterns and postures but includes a thinking or feeling that is inscribed in our physical beings and that determines our corporeality. Bourdieu describes bodily hexis as,

> a whole system of techniques involving the body and tools, and charged with a host of social meanings and values . . . a way of walking, tilt of the head, facial expressions, ways of sitting and using implements, always associated with a tone of voice, a style of speech, and . . . a certain subjective experience . . . Bodily *hexis* is political mythology realized, *embodied*, turned into a permanent disposition, a durable manner of standing, speaking, and thereby of *feeling* and *thinking* (1977, p.87, p.93; italics in original).

While we may think of the body as subjective, something individual or belonging to the self (Webb, Schirato & Danahar, 2002, p.37), our body is an incorporation of our history, a repository of ingrained and durable dispositions that structure at a corporeal level the way we generate meaningful social activity.

For Bourdieu it is through the habitus that social reproduction in schools takes place. Education as a field or social context comprises of complex relations and structures that operate between teachers, students, and the curriculum. These structures and relations are constantly shifting and changing while at the same time being embodied and absorbed by both teachers and students as the values and relations of schooling (Webb *et al*., 2002, pp.115–6). One's responses, although they seem natural and unconscious, are always largely determined or regulated by contexts or cultures which have informed the structuring of one's habitus. Bourdieu refers to this as the partly unconscious 'taking in' of rules, values and dispositions, which he defines as "the durably installed generative principle of regulated improvisations, [which] produces practices" (Bourdieu, 1977, p.78).

A teachers' pedagogical habitus thus incorporates the values and imperatives and embodied mental and corporeal pedagogical practices that have formed over time given the educational fields they have encountered. These educational fields include their own schooling experiences, their training as teachers and their teaching experience in schools. A teachers' pedagogical habitus, as "a system of cognitive and motivating structures" or "dispositions" that function "as principles that generate and organise practices" (Bourdieu, 1990b, p.53) therefore organises and positions them as certain types of teachers, which in turn structures their teaching practices in certain ways. Consequently, any substantial or effective change in the teachers' practices has to contend with the durability of the teachers' pedagogical habitus formation over time and the teachers' relationship with the various social and/or educational 'fields' in which they are engaged.

It is, therefore, the embodied pedagogical beliefs of the teachers, "that escapes questioning" (Bourdieu & Wacquant, 1992, p.98) that can be seen in the 'hardness' of change in their classroom teaching practices. Adapting or shifting teachers' pedagogy thus requires an on-going engagement with the conscious and unconscious educational values and beliefs that teachers have imbibed over time and which has structured the manner in which they enact their classroom pedagogy. It is this engagement, that I refer to as pedagogical

'habitus engagement', which I argue must challenge the teachers' embodied pedagogical habitus which has formed over time, in order to move beyond dialoguing about the possibility of pedagogic change, to the pragmatic implementation of a more socially just teaching orientation.

The role of professional learning communities in adapting and changing teachers' pedagogy: pedagogical habitus engagement

Changing the way in which teachers enact their pedagogy is highly complex. Professional development programmes are usually designed to initiate change due to a new curriculum or instructional innovation or to initiate change in teachers' attitudes and beliefs (Guskey, 2002, p.382). Fullan states that "[e]ducational change depends on what teachers do and think – it is as simple and complex as that" (2007, p.129). In order for sustained education change to occur, teachers need to be involved in processes of challenging and rethinking assumptions and theories on which their practice is based (Fullan, 2007). Unless this happens, any form of new innovation advocated will simply be filtered through the lens of teachers' already established beliefs and practices and will be colonised by the existing practice (Reid & Lucas, 2010). In order to engage with the teachers' pedagogical habitus to elicit sustained adaptation and change in their pedagogy, Bourdieu's concepts of habitus and bodily hexis provide us with an understanding that one's beliefs, that are embedded in one's habitus and enacted in and through practice, are both a 'state of mind' and 'state of the body' (Bourdieu, 1990b, p.68). Thus, for teachers, their pedagogical dispositions, how they are thinking and feeling about teaching and learning, is embodied and inscribed within the unconscious formation of their pedagogical habitus and enacted, on an almost pre-conscious corporeal level, within their classroom pedagogy. What this means, therefore, is that in order for the dialogical PLC process to effect pragmatic adaptation and change in teachers' pedagogical practices, it is necessary to engage with the corporeality of the teachers' embodied pedagogical dispositions.

Conclusion

My argument as discussed in this article has argued for the role of PLCs as a form of habitus engagement, in adapting and changing teachers' pedagogy in consonance with a more pedagogically just teaching orientation. Situated within the current South African schooling context and the CAPS, I have argued that the paucity of a meaningful and engaging pedagogy, particularly in schools that service working class students, has not resulted in the necessary amelioration of inequality within the South African schooling system. The current scripted, regulated and performative-driven CAPS, implemented in an attempt to alleviate the disparity found between the schools in wealthier leafy green suburbs and those situated in impoverished circumstances, has tended to erode teacher autonomy and resulted in an achromatic pedagogical approach to teaching which doesn't meaningfully engage all students in their learning. For this reason, I argue for PLCs that place teacher professionalism, collaborative learning and a more enriched pedagogical approach to student learning, as central to the on-going dialogical PLC process. This approach, as a form of habitus engagement, I suggest, holds the potential to challenge teachers to find ways to instantiate a more pedagogically just approach that meaningfully engages all students in productive learning.

Drawing on Bourdieu's concept of habitus and bodily hexis, I have argued that shifting or changing teachers' pedagogical practices must engage with the teachers embodied pedagogical habitus, as it is here that their deepest pedagogical dispositions reside, 'tattooed' in their physical being over time given the educational fields they have inhabited. Thus, to effect change in the teachers' pedagogical practices that over time have become embedded in their pedagogical habitus, these practices must be brought to consciousness, challenged and engaged, in order for the teachers to embody new or adapted pedagogical practices. Bourdieu warns of the durability of one's habitus, but offers a window of hope stating that the structures of habitus are not set, but can evolve, "they are durable and transposable but not immutable" (Maton, 2008, p.53).

My argument for PLCs, as a form of pedagogical habitus engagement, thus invites teachers to heed the call of an ethical responsibility to negotiate the "mad breach of social-educational justice" (Zipin, 2005, p.7) by dialoguing collaboratively towards finding ways to change or shift their pedagogical habitus, and consequently their teaching practices, in consonance with a more

pedagogically just teaching orientation. Zipin (2005), drawing on philosophers Immanuel Levinas and Jacques Derrida, calls the tension between the redistribution and recognition logic an aporia, which involves a "transaction between two contradictory and equally justified imperatives", each of which is impossible, but yet must be pursued (p.7). Zipin (2005) describes this impulse as a "disturbed peace" for teachers who realise that for their students and for themselves, the rewards of chasing a socially just aporia, which may be far from just or fair, will make schooling for all students, particularly those most marginalised, "better than otherwise" (Zipin, 2005, p.7). In understanding the limits that school contexts and curriculum structures impose on teachers, I take cognisance of the tension that a socially just orientation effects and suggest that the on-going dialogical PLC process holds the potential to support and direct ways to pragmatically implement a more pedagogically just approach.

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The role of museums in learning to teach with a critical lens

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Abstract

This study set out to explore the potential of student teachers learning to teach apartheid era history to learners in the primary school when learning in apartheid museums is blended with coursework. Using qualitative methods of inquiry, the findings show that student teachers learning in museums that dovetail with coursework at the university strengthens their ability to 'know, think, feel and act like a teacher'. The multiple narratives contributed towards addressing misconceptions, strengthened citizenship and pedagogic content knowledge, fundamentals that can equip student teachers to teach apartheid era history with an informed lens. The study highlights the importance of developing in student teachers investigative skills before and after museum visits so as to ensure that they are not merely consumers but are able to interrogate multiple narratives, resulting in them being active producers of knowledge.

Background to the research

This study sets out to explore the effects of blending learning in apartheid museums with coursework on student teachers learning to teach apartheid era history to learners in the primary school. Second year Social Science Intermediate Phase student teachers from a university in Johannesburg study the apartheid era in their coursework. Dovetailing with coursework, student teachers are taken to museums in Gauteng that depict the apartheid struggle to gain a hands-on learning experience from different sources of knowledge. The museums visited are the Liliesleaf Farm, Constitution Hill, Apartheid Museum, Mandela House and Hector Pieterson Museum.

In designing the museum visits, I draw on Rohlf (2015), who indicated that advanced, critical learning can be achieved in field trips through designing a field trip in three phases: the pre-trip, the trip itself, and the post-trip. In

coursework, prior to the visits to the different museums, students were given an assignment whereby they had to design and present their own interactive museums depicting any South African leader of their choice from the past. This activity involved researching, designing and presenting their interactive museum to second year intermediate phase history students. The intention of student teachers designing their own interactive museums prior to visiting the different museums was twofold. I firstly wanted student teachers to learn how to interpret and evaluate the artefacts that they select for their interactive museums. It also serves as a means to think critically and reflectively on why they select specific artefacts. The aim was for student teachers to recognise that they are personally responsible for selecting materials that they think will influence the audience most and are thus subjective. Here, I draw on Gardner (2004, p.13) who argues that museums too "have perspectives, make choices, present arguments, just like our colleagues elsewhere in the profession." The trip itself involved analysis of knowledge and skills and the post-trip involved synthesising and evaluating what was learned.

There is an abundance of research that supports the value of learning in museums from a visitor's perspective or from the experiences of children on a school field trip (Baines, 2007; Griffin, 2004; Paris, Yambor & Packard, 1998; Stronck, 1983; Taub, 2016). However, research on the learning potential of museums from a student teacher's perspective is limited. Moreover, research on how student teachers engage with their learning in apartheid museums, dovetailed with their learning in coursework, to teach apartheid era history to learners in the primary school is also limited. This research therefore sets out to explore the following questions:

1.   How do student teachers experience learning about apartheid era history in South Africa when coursework dovetails with learning in museums?

2.   To what extent does the experience strengthen student teachers learning to teach apartheid era history to learners in the primary school?

Learning potential of museums depicting the apartheid era in South Africa

The educational value of field trips to museums have been noted to show improvements in students cognitive skills (Stronck, 1983), increased

motivation and aesthetic appreciation, and strengthened personal identity (Schauble, Beane, Coates, Martin, & Sterling, 1996). The reasons for museums being able to foster learning is that the environment created is such that it enables individuals to construct their own meaning (Griffin, 2004; Paris, Yambor & Packard, 1998) as visitors are free to make their own choices in activities (Andre, Durksen & Volman, 2016; Griffin, 2004). In addition, museums present a multi-faceted narrative, with the visitor presented with choices to interpret in one of many ways (Taub, 2016). Thus, museums can be viewed as active producers of knowledge (Baines, 2007).

South African museums are viewed as providing "material form to authorised versions of the past, which in time become institutionalised as public memory" (Baines, 2007, p.9). Visitors construct meaning by assuming that what they see in museums is authentic and accurate (Gardner, 2004). But, Gardner (2004) raises concerns about this level of trust placed by visitors on the authenticity and accuracy of what they see in museums. I agree with Gardner (2004, p.15) that the public needs to understand the social and political contexts that influence the formation of museums, "that the selection of artefacts. . .is itself a subjective act, a way of shaping perspective, establishing (a) point of view" and thus cannot be regarded as objective historical authorities. Exhibits and artefacts in museums generally reflect the dominant discourse of society (Baines, 2007) depicted through the selection of artefacts that shape the way visitors perceive the past (Gardner, 2004).

Soudien (2008) draws attention to the discourses of post-apartheid museums, namely that of nostalgia and of reconstruction. Witz (2010, p.4) suggests that one of the reasons put forth for the "apparent historiographical crisis" in South Africa is a tendency in museums to present narratives that are "consistent with the dominant frameworks of a new national history." Examples provided of this new national history include "assertions of an indigenous precolonial nationhood, a paradigm that continually couples apartheid and resistance, centrality given to the 'emergence' and 'triumph' of the African National Congress in the anti-apartheid struggle, . . . 'victory' by iconic figures, primarily Nelson Mandela, culminating in the emergence of a multicultural South Africa" (Witz, 2010, p.4). Soudien (2012, p.183), in discussing the Apartheid Museum, draws attention to that which is omitted such as "the complex social structures, relations and habits that surround, precede and follow the horror." The emphasis on the narratives of a country's history, also referred to as national master narratives, results in students

having limited access to what is controversial about their country's history, thus hindering the development of a critical perspective (Carretero & van Alphen, 2014).

The role of museums in influencing how student teachers learn and teach about South Africa's 'difficult past'

I use Feiman-Nemser's (2008) themes, namely, "learning to *think* like a teacher, learning to *know* like a teacher, learning to *feel* like a teacher and learning to *act* like a teacher" (p.698) to argue that student teachers learning in museums dovetailed with coursework at the university could strengthen the way they will eventually teach apartheid era history in the classroom.

In *knowing like a teacher,* Feiman-Nemser (2008) refers to the knowledge that student teachers need to develop for the teaching profession. I draw on a framework for Understanding Teaching and Learning (in Darling-Hammond, 2008) to discuss the knowledge that is needed for teaching. Although the framework identifies three "key concepts within several domains of knowledge that are critical for teachers" (Darling-Hammond, 2008, p.1320–1321), I focus specifically on one of the key concepts, namely, curriculum content and goals, which highlights the importance of knowing the content to be taught. I am also reminded that historical narratives constructed by students about their own countries generally resemble historical master narratives (Carretero & Van Alphen, 2014).

According to Feiman-Nemser (2008), learning to *think like a teacher* involves student teachers critically examining their existing beliefs about teaching, against a backdrop of new ideas and understandings of good teaching. Student teachers have already internalised a range of teaching and learning experiences, acquired from the 'apprentice of observation' (Lortie, 1975) through the number of years spent at schools. I argue that museum visits dovetailed with coursework can provide the backdrop of new understandings about the teaching of apartheid era history.

Feiman-Nemser, in describing learning *to feel like a teacher*, recognises that "teaching and learning to teach are deeply personal work" as it connects

emotions, identity, and intellect (2008, p.699). In discussing learning to feel like a teacher, I focus mainly on identity development as integral to learning to feel like a teacher as the development of a professional identity emerges as a key element in the literature influencing the way student teachers question who 'I' am as a teacher (Beauchamp & Thomas, 2006; Beijaard, Meijer, Verloop, 2004; Nieto, 2003). Student teachers' conceptualisation of who 'I' am is influenced by history. Cultural background and upbringing influences learning in museums (Falk & Dierking, 2000) and inevitably influences the growth of personal identity (Schauble *et al.*, 1996). I draw on Fienberg and Leinhardt (2002) to reflect on the role of identity in museums. These scholars (Fienberg and Leinhardt, 2000) describe identity as part of a social context that takes into consideration the different kinds of knowledge and patterns of experience that individuals have pertaining to a given activity.

In the fourth theme, learning *to act like a teacher*, Feiman-Nemser makes the case that teachers need to integrate a range of "skills, strategies, and routines and the judgement to figure out what to do when" (2008, p.699). Using the multi-sensory exploration of museum objects can expose student teachers to its uses as a teaching tool and strategy in their own classrooms (Guy & Kelley-Lowe, 2001). I argue that student teachers can draw on a museum setting to strengthen their skills and strategies to teach this content area effectively.

Research methods

A qualitative research paradigm was suited to this study as it allowed for an in-depth enquiry into understanding the meaning as constructed by research participants (Merriam & Tisdell, 2016) on the potential of blending learning in apartheid museums with coursework in enabling their learning to teach apartheid era history. This study can be further described as a qualitative case study as it involves the description and analysis of a bounded system (Merriam & Tisdell, 2016). The bounded system that defines this case study is second year student teachers taking the module that integrates coursework with museum visits. These are student teachers who have selected Social Science as one of their subject specialisations to teach in the Intermediate Phase in the primary school. Sampling is therefore purposeful as it involves all student teachers taking the module (n=25).

As this research aims to instil in student teachers the ability to reflect on their learning in coursework, museums and their prior learning experiences, a critical theoretical framework is used. Patton (2015 cited by Merriam & Tisdell, 2016) describes critical research as that which critiques prevailing circumstances and through such critique, change is brought about. Critical theory involves asking questions about power relations and structures in society that reinforce how power is distributed (Merriam & Tisdell, 2016). Museums do advance their own perspectives (Gardner, 2004), with exhibits and artefacts in museums generally reflecting the dominant discourse of society (Baines, 2007). In this research, it is envisaged that by student teachers analysing, questioning and reflecting on their learning of apartheid history from different sources and through different pedagogies, they will be able to think critically about what and how they will teach apartheid era history to learners in the primary school. It also offers an important approach towards improving "citizenship education by emphasising the political nature of history curriculum" and provides opportunities for students to not only understand, but to "disrupt and challenge the official curriculum" (Salinas & Blevins, 2014, p.38).

The methods of data collection included open-ended questionnaires with all student teachers (n=25) and individual interviews with five student teachers selected randomly from the group. As suggested by Merriam and Tisdell (2016), the theoretical framework informs how data will be collected. From a critical theory perspective, asking questions in interviews or other forms of data collection about their experiences can bring about a change in consciousness and encourage change (Merriam & Tisdell, 2016).

Data analysis was inductive as the study set out to combine information from interviews and open-ended questionnaires, which were then ordered into larger themes, "as the researcher works from the particular to the general" (Merriam & Tisdell, 2016). I used content analysis, as described by Patton (2002) to reveal the patterns that emerged from the large volume of data collected which then led to the formulation of major themes. Patton describes content analysis as reducing a large amount of qualitative data in order to make sense of the data by identifying "core consistencies and meanings" (2002, p.453).

The validity and dependability in terms of data analysis were ensured through the triangulation of sources (Patton, 1999) from interviews and open-ended questionnaires.

Findings

Multiple narratives on apartheid era history strengthens knowledge for teaching

Student teachers have acknowledged that their prior knowledge about apartheid era history was acquired from parents, grandparents, the media and from teachers at school. There was however one student teacher who recalled personal encounters of the apartheid era when she was in primary school, of how "the students will protest and the police would come, we used to call them hippos and they would fire teargas. We would quickly run to the taps to wash our eyes." Student teachers therefore have personal narratives about apartheid era history.

A few students recognised that narratives acquired as a learner at school on apartheid era history lacked depth (n=5). For example, at schools, "we were just told that black people were mistreated" and "they will not go into depth to explain how." One of the students also explained that their learning at schools was limited to "Mandela and Walter Sisulu." Student teachers acknowledged that if they did not have the knowledge and experience from coursework and the museums, they "would have taught it (apartheid era history) the way I was taught growing up, I would just tell them what happened," and "it wouldn't really be all the information they will need, I will lack the content knowledge."

On visiting the different museums sites and engaging with the narratives presented by each, student teachers' misconceptions about apartheid from their prior learning experiences emerged. For example, at Liliesleaf Farm, the majority of student teachers (n=17) did not know that "white people actually fought against apartheid" as "I thought that only black people are the ones that were fighting for freedom." After the museum visit, student teachers' perspectives changed as "I know that not all white people were cruel but some of them were really against the law of apartheid." Another misconception that was addressed was at the Hector Pieterson Museum were student teachers

(n=7) realised that Hector Pieterson "was actually not the first person to die." Responses from students that confirmed that misconceptions were being corrected are: "I noticed that there were lots of learners who died;" and "it was not only Hector killed on that day." At the Apartheid museum, one student was "really hurt to see that blacks were against each other. They did not support one another in some aspects." An intersection of the narratives from prior experiences with the multiple narratives presented in museums revealed and clarified some misconceptions that student teachers had. The data supports the view that student teachers' prior knowledge and understandings on apartheid era history were expanded after the museum visits. After the museum visits, student teachers' views expanded from "it was more than a court" to "it is also a prison where black prisoners were treated unfairly" and learning about "how the black people were treated in jail, the brutality they were faced with, having to eat next to a dirty toilet, eating from a dirty plate, and being tortured" (Constitution Hill). They also acquired "more knowledge of the brutality, pain and struggles" through "a somewhat personal experience of what it was like for both black and white person (people) during apartheid" (the Apartheid Museum). Student teachers' views of Liliesleaf Farm changed from expecting "the information we were going to get there was going to be related to farming" towards discovering "where the political struggle heroes were meeting and what led to the raid" and "gained knowledge about people involved in fighting against apartheid" (Liliesleaf Farm). Other student teachers reported that they gained "primary knowledge from recordings of what truly happened" and "how other whites worked with blacks to fight for freedom." Student teachers stated that they "gained a lot of information about other young anti-apartheid activists" and "learnt how the youth changed the political history of the country." "I think being in Soweto and being in the same place where the events had taken place was very powerful" (Hector Pieterson Museum and the Mandela House). Thus, the field trips "added to my knowledge of what I learnt at school and in coursework. It made the implicit, explicit" and "it showed exactly what happened."

From the above narratives, student teachers continuously reiterate that they are gaining "more knowledge" at each of the museum sites, and misconceptions are brought to the fore, which should translate into teaching the content with a more informed lens. However, it would seem that gaining 'more knowledge' did not prompt a critical engagement of different or similar perspectives from each of the museum sites. In addition, they take for granted

the 'grand narratives' presented in museums by stating that "it showed exactly what happened."

Harnessing sentiments in museums to stimulate reflection

The museum visits were very emotional for all students and "made me very sad; I cried on this day," an indication that some student teachers were not prepared on how to deal with these emotions. One student teacher indicated that she was "very emotional seeing the ropes, how black and white had different entrances, often I found myself wiping tears from watching the videos." Another scene that evoked similar emotions was seeing "photographs of primary school children being shot. That hurt me quite a lot. Kids being burnt. The poems."

Some of these emotions translated into feelings of national pride and patriotism as some student teachers (n=12) indicated that "I have a sense of pride to be South African," and "it gave me a sense of belonging. We should be proud of where we are right now because we are very privileged." These feelings were stimulated by a sense of realisation about "how fortunate we are to have the freedom we have. It made me more passionate" and "it made me appreciate my rights, appreciate being a South African more." However, some of these emotions (n=6) elicited "feelings of hatred for white people," "anger" and "I felt I want revenge." Such feelings were elicited when "I saw photographs of primary school children being shot. I understand that is important" but "that hurt me quite a lot" that "when you leave, little to heal you." These examples suggest that student teachers' national identity was being influenced both positively and negatively.

Student teachers expressed the importance of "calm(ing) people down when they leave" by "maybe a quote from him (Mandela)" who "pushed for reconciliation." Another example provided was at the Apartheid museum "on our way out they played the South African national anthem. That inspired me. I started singing along as I felt proud to be South African." The importance of 'healing' before you leave a museum can be viewed as an example of student teachers not just analysing the knowledge gained but they are now evaluating and synthesising what they learnt. It would seem that emotions spurred student teachers to analyse, reflect and provide solutions on how to manage emotional narratives.

The museums stimulated student teachers curiosity and reflection which encouraged further independent research. It made student teachers aware that "there is a lot that I need to learn about history" and that "there is a lot that I need to know about my country" which "delivered me to a point of wanting to know more and conduct more research." Most student teachers were also critically reflecting on their different experiences at each of the museums (n=20). Some student teachers "felt that the place [Liliesleaf Farm] was not as celebrated/publicised as it should be because it is rich in history." At the Mandela House in Soweto, student teachers described their experience as "not gain(ing) much because the house was changed," "looks fake and renovated to suit some guests" and looking at "only pictures and pictures were not enough for me." These experiences resulted in students feeling a "lack of attachment to the place" as "I did not feel the presence of him in the house" and "the Mandela family struggles."

Student teachers' emotions seemed to have stimulated analysis and reflection on the 'what' and 'how' of their learning during the field experiences. Curiosity and reflection that stimulates further research in student teachers suggests that the skills of lifelong learning needed for good teaching are being developed.

Learning in multiple contexts stimulated creativity on how to teach

Student teachers expressed the view that their learning in multiple contexts stimulated their creativity and vision of the type of teacher they would one day want to be. From coursework, learning creative teaching pedagogies was prompted when "we designed our own interactive museums. We knew what we were going to expect. It gave us prior knowledge that when you get there, this is what you are going to see. We came back and we studied some of the leaders. When I was studying, it brought to life what I was studying."

All student teachers (n=25), from their learning in coursework and the museum field trips, indicated that they will employ different strategies to teach learners. For example, "you need to be practical, sometimes you need to act like you were there" and "I would teach learners by bringing my own learning aids such as my homemade museum, I still have it so I am still going to use it in the future." Other student teachers indicated that "I would make use of pictures that depicts what really happened, not the ones that we usually see" and "I want them to know and feel what was happening at that time, not

just that it was here-say" by "play(ing) them songs to evoke those feelings, bring pictures, play them a video." These views emanate from student teachers personal experiences at the museums being "very informative and technological;" "the letters. . .the technology that made the stories so real" and "the songs and sounds that they played made you feel that you were part of that struggle." As such, many student teachers responded that they too will "bring my learners there (museums) one day to get a first-hand experience about the emotions and experience that people went through."

In addition, student teachers' views about History as a subject was changed as some (n=6) indicated that "I thought History was a boring subject. I did not do History in school" and "I have learnt that there are strategies that you can use to make it interesting." For example, in coursework, student teachers were asked to design their own museums choosing one South African leader of their choice. For student teachers, the experience "got me to use my imagination and then to go and actually experience that first hand; be at the places, see and hear what people have gone through, made my understanding easier." These experiences "helped me to set a standard as a teacher one day. I would also like to get my children to experience like touch, senses and use their own imagination about how museums are and what they should represent and the experience it brings to an individual."

Discussion of findings and recommendations

The majority of the student teachers in this research had not directly experienced apartheid. The knowledge that they acquired is the stories that are told from parents, grandparents, community, school, texts and the media. Student teachers learning about South Africa's difficult past through museum visits, dovetailed by their learning in coursework before and after their field trips did strengthen their ability to think, know, feel and act like a teacher. Feiman-Nemser (2008) emphasises the importance of an in-depth knowledge of the subject matter as one of the components to 'know' like a teacher. The data suggests that student teachers subject matter knowledge required to teach apartheid era history is strengthened, a finding that is also consistent with research conducted by Rohlf (2015) that field trips reinforce what has been already learned and provides new knowledge. A good grasp of the subject matter would in turn enable teachers to organise and teach the school curriculum to suit the needs of the learners in the classroom (Ball & Bass, 2000; Darling-Hammond & Baratz-Snowden, 2005). However, the data also

suggests that student teachers were taking for granted what they see in museums, even though the aim of the pre-trip museum activity, constructing their own interactive museum, was to enable them to recognise the subjectivity that surrounds the selection of materials. Gardner (2004), in earlier research also made similar assertions, that visitors construct meaning by assuming that what they see in museums is authentic and accurate. What is needed is for student teachers to learn to become reflective, pedagogical thinkers by ensuring that they are equipped with the skills and the knowledge to operate "autonomously as an academic professional and developer of their field" (Krzywacki, Lavonen, & Juuti, 2015, p.92). Thus, the post-museum trip needs to extend student teachers further by introducing them to skills that will enable them to interrogate grand narratives. Students need to be taught skills and knowledge to become both consumers and producers of educational research (Krzywacki *et al*., 2015: p.95), which I argue are necessary to assist them to interrogate the prescribed curriculum at schools and not accept taken for granted 'grand narratives.'

The data also supports the notion that student teachers are beginning to feel like a teacher. Feiman-Nemser, in describing learning to feel like a teacher, recognises that "teaching and learning to teach are deeply personal work" as it connects emotions, identity and intellect (2008, p.699). Student teachers, by describing how they will use the experience to teach their own learners one day shows that they are already visualising the type of teacher they want to be. As such, their professional identity as a teacher is being developed. One of the elements that also influence teacher professional identity is the perception of being an expert in terms of subject matter and pedagogy (Beijaard, Verloop and Vermunt, 2000). The module designed to link coursework to museum visits was an attempt to develop student-teachers towards becoming experts in subject matter and pedagogy. The data did suggest that student teachers content knowledge was strengthened. However, what is needed is for student teachers to engage with the subject matter more critically and analytically. Discussions after the museum visits must move students from being mere consumers of what they see to becoming active producers of knowledge.

This study has also found that museum visits were able to address misconceptions acquired from student teachers prior learning experiences, an important finding that is suggestive of student teachers beginning to think like a teacher. They are able to engage in self-critique and self-awareness by admitting that there is still "a lot that they need to learn." Student teachers do need powerful and convincing alternatives that will enable new images of

good teaching to be developed (Feiman-Nemser, 2001) if they are to begin thinking like a teacher. Museums do present a multi-faceted narrative, with the visitor presented with choices to interpret in one of many ways (Taub, 2016).

In acting like a teacher (Feiman-Nemser, 2008), student teachers did acknowledge that their own interactive museums in the pre-visit to museums, followed by learning in museums could strengthen their teaching strategies to teach learners. It was clear that they intended to teach with passion and use strategies that will invoke feelings in learners as if they were really 'living the experiences of that era'. The multi-sensory exploration of museum objects (Guy & Kelley-Lowe, 2001) has exposed student teachers to its uses as a teaching tool and strategy in their own classrooms.

Student teachers described their museum visits as very 'emotional'. Interpretive displays that provoke emotion, described as a 'hot interpretation', are aimed at engaging visitors emotionally so as to challenge them to examine their attitudes with respect to the specific and contentious issues displayed (Ballantyne & Uzell, 1993). The emotions elicited from the museum visits did challenge student teachers to examine their attitudes and actions. The result was that some student teachers experienced a sense of national pride and unity while other student teachers experienced emotions such as hatred and revenge. These very diverse attitudes point to the difficulties experienced by some student teaches in dealing with their emotions. What is needed are critical discussions to be held after field trips or as described by Ragland (2015, p.617), "discomforting dialogues" which provide opportunities for reflection on one's experiences, thoughts and feelings. While student teachers did acknowledge that post field trip discussions in lectures were helpful, they raised concerns about how learners from schools will deal with similar emotions. I interpret this response as indicative of student teachers beginning to think, feel, know and act like a teacher. While they are able to talk about their feelings and why they feel this way, they are simultaneously thinking about their learners and its effects on teaching and learning. Student teachers did indicate that museums will need to do more to ensure that visitors leave with feelings of appreciation, national pride and unity and not hurt and hatred. Ballantyne (2003), from a study of the District Six Museum in Cape Town, also raised the question of whether the museum could do more to enable visitors to channel their emotions towards promoting justice, peace and understanding in their own communities. Drawing on the responses from student teachers, I agree that museums need to do more to 'heal' visitors.

Conclusion

Student teachers learning in museums dovetailed with coursework did point to a number of immediate benefits for student teachers learning about the apartheid era and about how to teach this content area to learners in the classroom. Their ability to 'know, think, feel and act' like a teacher was strengthened. Integrating museum visits into one's pedagogy recognises the importance of merging prior knowledge and experiences with new knowledge and understandings. It is a valuable method that can engage student teachers to think critically and reflectively about what and how they teach history. However, it would seem that student teachers developed more substantive knowledge (key facts) but perhaps still did not engage with the syntactic knowledge of the discipline (rules of evidence). Thus, teaching investigative skills is essential if student teachers are to begin interrogating 'grand narratives' to become both consumers and producers of knowledge. In so doing, student teachers will not only understand, but be able to challenge and transform how they teach the official school curriculum.

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Inclusive education in initial teacher education in South Africa: practical or professional knowledge?

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Abstract

Inclusive education is embedded in South African policy with the expectation that teacher education will equip pre-service teachers to teach inclusively. As a result, courses in inclusive education are offered in most Initial Teacher Education (ITE) programmes and research interest in teacher education for inclusion has grown. This paper contributes to this body of knowledge by using Legitimation Code Theory to engage critically with concepts and assessment tasks from three inclusive education courses. This meant identifying where theoretical, context independent knowledge is privileged (semantic density), and where the knowledge is derived from practice or experience and designed to be implemented within specific contexts (semantic gravity). Using examples as reference points, I discuss how inclusive education comes to emphasise practical knowledge, to be enacted in particular contexts, or with particular groups of learners. An alternative is to position inclusive education as professional knowledge where theoretically informed judgments are made in response to the complexity of learner diversity. This will require strengthening the disciplinary foundation of concepts presented in ITE courses in inclusive education.

Introduction

Inclusive education is now a compulsory component in Initial Teacher Education (ITE) programmes in South Africa (Republic of South Africa, (RSA) 2015). The origins of inclusive education can be found in human and disability rights initiatives championed by the United Nations (Unesco, 1994) and the field has had various influences, including special needs education, medicine and psychology, critical sociology and curriculum, pedagogy and assessment (Slee, 2011). While the meaning of 'inclusive education' has been a matter for debate (Walton, 2016), in South Africa it has come to be understood as a system-wide response to "those groups of learners who have been, or continue to be disadvantaged in terms of educational provision"

(Department of Basic Education (DBE), 2010, p.1). These groups of learners are deemed to have 'additional support needs' which are said to, "arise from any factor which causes a barrier to learning, whether that factor relates to social, emotional, cognitive, linguistic, disability, or family and care circumstances" (DBE, 2014, p.7). This approach to inclusive education is a broad approach (Ainscow, Booth, Dyson *et al.*, 2006) which acknowledges that there are a number of reasons why some learners do not access, participate and succeed in school, and that these reasons need to be addressed by the education system. In response to the legislative expectation that newly qualified teachers will be able to "understand diversity in the South African context in order to teach in a manner that includes all learners" (RSA 2015, p.62) ITE programmes across the country offer courses in inclusive education.

Not all pre-service teachers are satisfied with their ITE courses in inclusive education, with indications that they want courses to have a *practical*, rather than a theoretical orientation. Pre-service teachers in one research project[1] reflected on their course in inclusive education saying, "[I would prefer] not just learning the theories but the more practical . . . what are the methodologies you could perhaps employ?" and "I think what we've learnt is very theory based and theoretical and the perfect situation. And I don't think we've learnt like practically what to do". Beginner teachers concur, saying, "I think the inclusion course needed to be more practical, (showing) you how to implement it in the classroom" and "It is all well and good saying here is the theory and apply it, but sometimes you are not sure how to apply it, or what applies in different situations" (Harrup, 2015, p.34). Despite these assertions, I argue in this article that inclusive education *is* generally presented to pre-service teachers as practical knowledge in a number of ITE programmes in South Africa. And, contrary to what the pre-service teachers say, there is very little theory in what they are taught. I wish to problematise this orientation and suggest that inclusive education would be better served by being positioned as a professional, rather than a practical knowledge in ITE. To achieve this, I argue for strengthening the disciplinary and theoretical foundations in the presentation of concepts commonly taught in inclusive education courses.

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[1]   Data collected for the study reported in Walton, E. and Rusznyak, L. (2013). Pre-service teachers' pedagogical learning during practicum placements in special schools. *Teaching and Teacher Education*, 36, 112–120.

Setting the scene: teacher education for inclusive education

Teacher education is identified as one of the key components for the successful realisation of an inclusive education system. Research from countries who pioneered inclusive education in the 1980s and 1990s points to the importance of teacher professional development for the achievement of more inclusive and equitable education systems (Ainscow, 1999). The Salamanca Statement and Framework for Action (UNESCO, 1994, p.27) confirms this, saying "Appropriate preparation of all educational personnel stands out as a key factor in promoting progress towards inclusive schools". Just before the introduction of inclusive education to South Africa in 2001, scholars here also alerted us to the need for teacher training[2] in knowledge, skills and attitudes for the implementation of inclusive education (Bothma, Gravett and Swart, 2000; Hall and Engelbrecht, 1999). White Paper Six: Special Needs Education (Department of Education, 2001) in outlining the framework for building an inclusive education and training system in South Africa, identified classroom teachers as the ". . . primary resource for achieving our goal of an inclusive education and training system", noting that these teachers will ". . . need to improve their skills and knowledge, and develop new ones" (p.18).

Despite these policy directives and research findings, a lack of teacher training in inclusive education is often identified as one of the impediments to the achievement of inclusive education, both internationally and in South Africa. Inclusive education has been critiqued in the international literature on the grounds that teachers are insufficiently trained (Kavale and Forness, 2000; Lloyd, Wilton and Townsend, 2000). Echoing this, various South African scholars attribute the non-implementation of inclusive education to insufficient professional development opportunities (Eloff and Kgwete, 2007; Engelbrecht, Nel, Smit and Van Deventer, 2015). This is despite evidence that many universities offer modules, courses and programmes in inclusive education at undergraduate and post-graduate level, and some offer

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   I note my dis-ease with the term 'training' as it is used in connection with inclusive education. As I show in this article, inclusive education is not well served by being presented as a series of technical interventions implemented in response to a bounded problem, for which teachers can be 'trained'. Many sources to which I refer do use the word training and I use it when referring to this work. My preference is for the terms teacher education or professional development.

workshops or short courses (Pooe, 2012). National and provincial departments of education have provided workshops and other in-service learning opportunities for teachers, as have various NGOs in the field (Walton, 2011). It is clear that much more research is needed to understand what it is that teacher education should offer to enable more inclusive education, and why it is that current offerings are not translating into the realisation of greater inclusivity in schools.

My focus in this article is on pre-service teacher education. This is not to deny the importance of in-service teacher education. In fact, the *Integrated Strategic Planning Framework for Teacher Education and Development in South Africa* (DBE, 2011a) prioritises inclusive teaching as it has been identified as a "key lever for improving quality across the system" (p.10). It seems important that teacher education for inclusive education must clearly distinguish what it is that pre-service teachers should be learning, and what is relevant and appropriate for in-service teachers with different years of classroom experience, and with different roles and responsibilities within the education system. Pre-service teacher education for inclusive education has attracted relatively less attention from South African scholars, whose work has tended to focus on the content and effects of various in-service professional development opportunities (see, for example, Lessing and De Witt (2007); Swart and Oswald (2008); Dalton, Mckenzie and Kahonde (2012)).

Internationally, there has been considerable interest in pre-service teacher education for inclusive education. The focus of this body of literature has been on decisions about whether inclusive education should be taught as stand-alone courses or infused into the general teacher education programme (Loreman, 2010a); what the content of inclusive education courses needs to be (Loreman, 2010b); the impact of courses (Lancaster and Bain, 2007; Sharma, Forlin and Loreman, 2008); and the role of different types of field experiences (Lambe and Bones, 2008; Waitoller and Kozleski, 2010). This article focuses on the content of ITE inclusive education courses as currently taught in some South African Higher Education Institutions and offers an analysis of this content using some the conceptual tools of Legitimation Code Theory.

The conceptual tools of the analysis

The dimension of Semantics within Legitimation Code Theory (Maton, 2014) forms the basis for my analysis of inclusive education content in ITE. This is then developed with reference to Shay's (2013) work on the semantic field of recontextualised knowledge.

Legitimation Code Theory (LCT)

LCT emerged in the 1990s and is seen to be an evolving theory, with its development driven by the studies that use it. It is styled as a "practical theory rather than a paradigm" and "a conceptual toolkit and analytic methodology" (Maton, 2014, p.15). It has its roots in the work of both Pierre Bourdieu and Basil Bernstein and sees fields as knower-knowledge structures. Bourdieu's influence on LCT is primarily in terms of 'gazes', which encompass knower-structures and knower-grammars, and which are conceptualised in terms of the varying strength of social relations in a field (Maton, 2014). Bernstein's code theory is developed in LCT in terms of the structuring of knowledge practices. To use the conceptual toolkit afforded by LCT is not to suggest that the critiques of LCT should not be considered. Singh (2015) maintains that LCT, particularly as reflected in Maton's (2014) book *Knowledge and Knowers*, has a "restricted interpretation of knowledge, ways of knowing, and knowledge growth" (p.493). In a more extensive critique, Tyler (2014) suggests that LCT represents "a return to earlier and abandoned phases of Bernstein's project" (n.p.) and neglects recontextualisation as a "crucial feature of pedagogic discourse and knowledge acquisition" (n.p.). Having noted these critiques, I do agree that the different dimensions of LCT offer a useful and accessible framework (Clarence, 2015; Case, 2014) that "enables knowledge practices to be seen, their organising principles to be conceptualised and their effects to be explored" (Maton, 2014, p.3).

Five dimensions currently comprise the LCT toolkit. Each has associated concepts or modalities which might be relatively stronger or weaker (+/-) and which can be used to study the principles that organise various practices. The five dimensions are Autonomy, Density, Specialisation, Temporality and Semantics. I have little doubt that all five dimensions would yield insights into the broad field of inclusive education, but given space constraints, I have chosen to focus on Semantics. In this regard, Maton (2014) reassures that,

"you only need as much theory as space will allow" (p.19). Semantics has been identified as the "newest and fastest growing" (Maton, 2014, p.19) dimension in LCT research and it has been productively used in various South African studies. These include Shay and Steyn's (2016) work with vocational curricula; Clarence's (2015) case study of academic development practitioners working with Political Science educators; Arbee, Hugo and Thomson's (2014) analysis of a Marketing course in Higher Education; and Rusznyak's (2015) categorisation of teacher learning envisaged by policy.

Semantics has two concepts or modalities. The first is *gravity*, which relates to the extent to which meaning is dependent on the context in which it is produced. Relatively strong semantic gravity indicates that context is vital in meaning making, such that a particular knowledge cannot be abstracted beyond the context. Maton (2014, p.110) puts it as "meaning is more closely related to its social or symbolic context of acquisition or use". To illustrate this, in South Africa, knowledge of which hand signals to use to hail a taxi going in a desired direction is very context specific – Johannesburg knowledge doesn't help in Cape Town (Woolf, 2013). This hand-signal knowledge is characterised by very strong semantic gravity, abbreviated as SG++. Weaker semantic gravity (SG-/--) is evident as context becomes less important for meaning and knowledge is more abstract and generalisable across contexts. The second modality of semantics is *density*. Density refers to the extent to which meanings are condensed in symbols, concepts and practices. Stronger semantic density (SD+/++) is evident as more meanings are condensed within any particular symbol, concept or practice. Maton (2014, p.130) calls this a "semantic TARDIS" after the Doctor Who television series in which a police box opens to reveal an entire space craft – in other words, "it's bigger on the inside than the outside" (The Doctor Who Site, n.d.). Other literary analogies might be the wardrobe in the Narnia series, or Mary Poppins's carpet bag. All of these serve as a metaphor for strong semantic density as "more resides within than may first appear" (Maton, 2014, p.130). Weaker semantic density refers to simple ideas or concepts with fewer meanings.

Semantic gravity and semantic density are evident in all knowledge practices and their strengths can vary independently. As a result, knowledge practices can be constructed with the intersecting axes of each of the continua of semantic gravity and semantic density, generating a semantic plane (Maton, 2014) with four quadrants. These are characterised as SD-/SG+; SG+/SD+; SD+/SG-; and SG-/SD-. From these four quadrants Shay (2013) has

developed a semantic field of recontextualised knowledge, with a focus on the types of curriculum that each quadrant offers. This is important for my analysis of the content of inclusive education courses as I am not concerned here with the field of knowledge production in inclusive education itself, but in the Pedagogic Recontextualising Field (PRF) where inclusive education becomes curricula, courses and texts (Bernstein, 2000).

The semantic field of recontextualised knowledge

From Maton's semantic plane, Shay (2013, p.572) offers a "semantic plane for curricula" in which she demarcates the quadrants as generic curricula (SG-/SD-); theoretical curricula (SD+/SG-); practical curricula (SD-/SG+); and professional/ vocational curricula (SD+/SG+). This is reproduced in figure one.
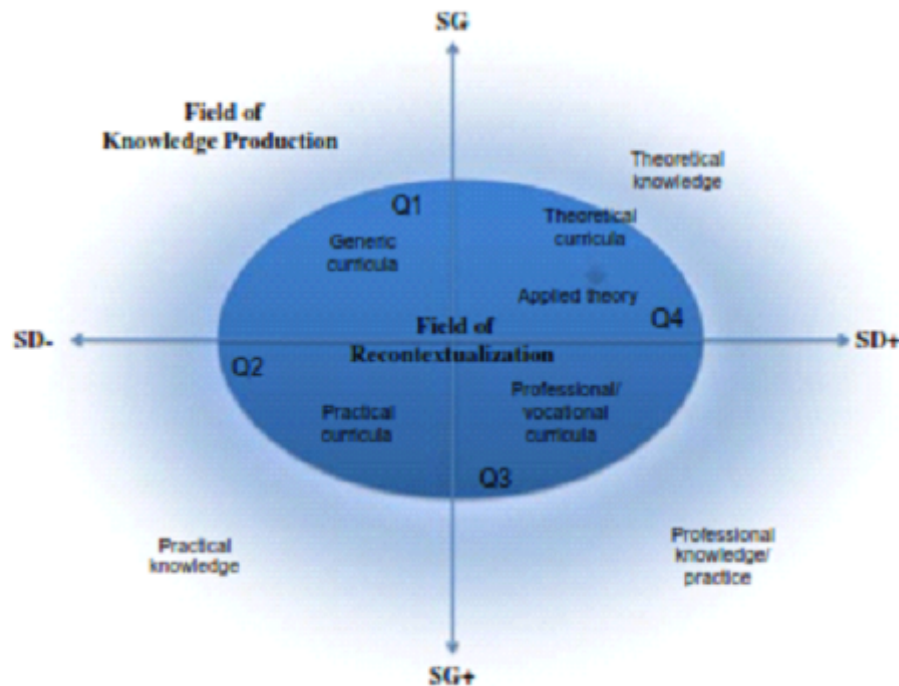

Figure 1: Shay's (2013) semantic field of recontextualised knowledge.

Without empirical evidence, Shay is cautious about defining generic curricula, suggesting that these may be manifested in some of the generic, cross-field learning outcomes that are intended to be concept empty (SD-) and transferable across contexts (SG-). Theoretical curricula derive their logic from the discipline and reflect the "world of theory" (Shay, 2013, p.574). While there may be some range in semantic density and semantic gravity within theoretical curricula, there will always be a "ceiling" on semantic gravity as no direct application to the problems of practice are expected. Here Shay draws examples from the disciplines of mathematics, physics and political philosophy.

The quadrants of practical and professional curricula are my concern in this article as they relate directly to possible conceptions of curriculum in teacher education. Practical curricula, Shay (2013) argues, reflect recontextualised practical knowledge. Context or workplace practices are translated into principles or concepts for these practices, resulting in slight strengthening of semantic density and weakening of semantic gravity. However, the principles and concepts in these curricula are "derived from practice not theory", which means there will always be a "ceiling" on semantic density (p.573). Semantic gravity will always be relatively strong in these curricula because they are bound to the context of practice. Professional/vocational curricula recontextualise both theoretical and practical knowledge. Shay distinguishes these curricula from theoretical curricula by saying that the logic of professional curricula is the "demands of the practice" (p.575). They are different from practical curricula because "the principles informing the practice are derived from theory" (p.575). In professional curricula, theory is not taught for its own sake, but for its potential to inform and understand practice. Thus both semantic density and semantic gravity have to be strong in professional curricula. Guile (2014) makes a similar point, but without reference to semantics:

> . . . the challenge for aspiring professionals is to develop the capability to use disciplinary knowledge, in conjunction with professional experience, as a resource in a specific context to pick out the salient features of that situation or event, and then infer what follows and how to act (p.82).

Shay's contribution of a semantic plane of curricula is to show the different logics that give rise to different curricula, and to indicate what knowledge progression is possible through the strengthening of either semantic density or semantic gravity, or both. She also indicates boundaries between different

curricula, suggesting how articulation between curricula is unlikely to be straightforward, given the different criteria that legitimise knowledge in each. Rusznyak (2015) brings this discussion more directly to teacher education as she considers various recontextualising principles that might be used to inform initial teacher education curricula. In particular, Rusznyak shows the "trade-offs" (p.8) that must be made in the selection and sequencing of knowledge. She argues that foregrounding practical and situational knowledge in teacher education, while possibly compromising theoretical knowledge, is more likely to enable beginner teachers to cope with the realities of South African classrooms. Foregrounding the systematic acquisition of theoretical knowledge, by contrast, would more likely enable prospective teachers to use the insights from theory to inform pedagogical choices in practice. While Rusznyak's concern is with the broad design of ITE programmes, I wish to focus on a particular component, that of inclusive education. One part of a wider, multi-institutional research project entailed the collection and cataloguing of courses in inclusive education to understand how teacher education for inclusive education is currently conceptualised and realised in South Africa.

The data that informs this discussion

With ethical clearance from my university ethics committee, and with permission from lecturers in other HEIs, I was able to access course outlines of inclusive education courses or modules from three university courses in inclusive education in the Bachelor of Education programme. These HEIs included one university constituted by a merger, one historically advantaged urban university and one historically disadvantaged university in a rural area. I use the term 'course outline' broadly to refer to the document given to pre-service teachers which includes, as a minimum, expected outcomes of the course, topics to be covered and at least one assessment task. As different HEIs have different requirements for course outlines, direct comparisons were not possible, but it was possible to use the material supplied to identify the key concepts that were included in the courses. These were indicated in the course material as lecture topics, section headings or learning outcomes.

I set out to map the relative semantic gravity and density of the concepts offered in the course outlines. This involved identifying the extent to which concepts were presented as being dependent on context and derived from practice (i.e. semantic gravity), and the extent to which concepts were

presented as complex with meanings condensed or simplified and rarefied (i.e. semantic density). A significant part of this analytical work was to focus on what teacher educators presented to pre-service teachers as the *source* from which the concepts are derived. It became clear that concepts in inclusive education courses cannot be evaluated in terms of relative semantic gravity and density independently of the sources from which they are generated or with which they are associated. As will be argued in the discussion below, it is possible for the same concept to be presented with different semantic profiles, depending on its given source. In addition to a focus on concepts, assessment tasks from the course outlines were considered in terms of their orientation towards semantic gravity and density. These were then mapped onto Shay's semantic plane for curricula to enable a discussion about the different logics and bases of legitimation used as inclusive education is recontextualised in ITE.

There are acknowledged limitations in this research process. With only three sets of course outlines available with consent for use in research, conclusions are not necessarily applicable across the sector. Courses may well deviate from the outlines, with more or less content actually delivered to pre-service teachers. Aspects seen as lacking in the course outlines may well be provided to students in class or through supplemental readings. As mentioned above, the format of the materials differed, with some course outlines providing more substance in terms of content than others. Considerations of the anonymity of the participating HEIs further limit the dissemination of the findings of this research. The presentation of an overview of all topics and assessments that are presented in each outline would be useful, but would also potentially lead to the identification of the participating HEIs.

Another limitation of the analysis presented in this paper relates to the critique of LCT mentioned above in that there is no reference to the process of recontextualisation and the work of pedagogising knowledge. Singh (2002, p.575) maintains that pedagogising knowledge has implications for, "'what' knowledge is available to be converted into pedagogic communication, 'who' . . . will undertake the work of pedagogising knowledge, and 'how' this knowledge is transformed into pedagogic forms". This analysis of inclusive education course content has some relation to the knowledge that has been 'converted into pedagogic communication', but it does not go further to examine who undertakes this work and how the knowledge is transformed. In other words, the analysis takes the course outlines as pedagogical artefacts,

with no interrogation of the people and processes involved in their creation or use.

The purpose of this work is not to offer a comparative evaluation of courses, but to develop a conceptual argument derived from the data. The limitations discussed are thus deemed acceptable. Like Clarence (2015), I present the discussion that follows as a beginning, rather than a conclusion, hoping that it will open a conversation about what is taught to pre-service teachers in the name of 'inclusive education'.

Inclusive education as practical knowledge within practical curricula

Many of the concepts presented in inclusive education courses are characterised by relatively strong semantic gravity, and relatively weak semantic density. Assignments too, show context dependence (SG+), with relatively little conceptual depth (SD-). Using selected examples, I will show how this potentially and problematically locates inclusive education as practical knowledge within a practical curriculum.

The semantic profile of concepts

The following four concepts have been selected from the three course outlines. This selection is not comprehensive, but at least one concept from each course is presented for discussion. With the detail given about the source of the concepts, they can be seen as illustrative of a successive strengthening of semantic gravity and weakening of semantic density.

Differentiation or *differentiated instruction* is offered as a classroom strategy that enables teachers to be more responsive to diverse learner needs. The given source of the concept is the codified principles of good practice with reference made to articles (e.g Subban (2006)) and websites (e.g http://www.help4teachers.com). These sources describe the rationale for differentiation in terms of assumptions of differences in readiness to learn, learning profile and interest and offer processes and techniques that have been found to be useful in enacting differentiation. This strengthens the semantic gravity of the concept by grounding its source in classroom practices. The classroom from which the principles are derived is generic, so no classroom at

any particular time or place is required for the meaning of differentiation. This prevents the concept from reaching extreme semantic gravity on the continuum. Because the principles of practice have been codified, and there is a significant body of literature on differentiation (although less empirical work (Subban, 2006)), there is a slight strengthening of semantic density. This indicates to pre-service teachers that differentiation is not a simple concept, but one with a number of constituent components. There is, however, no theory associated with differentiation in this course, so it must be positioned as SG+/SD-.

Learner support is a concept presented in one of the courses with the South African policy on Screening, Identification, Assessment and Support (SIAS) (DBE, 2008, 2014) as its source. The semantic gravity of the concept of learner support is significantly strengthened by grounding it in one specific South African policy. Thus the meaning of learning support for pre-service teachers in this particular course is inextricably bound up with the South African context and current policy provision. Because the policy itself is complex, and "constellates" (Maton and Doran, 2017) a number of other concepts like 'barriers to learning', 'accommodations' and 'collaboration', learner support as a concept in this course retains some strength in terms of semantic density, but there is no associated theory. Learning support can thus be mapped as SG+/SD-.

Contextual disadvantage is a concept foregrounded in one of the courses, where it constitutes a discrete unit of study. Here pre-service teachers are presented with a number of 'case studies' of particular learners, from which pre-service teachers are invited to derive an understanding of contextual disadvantage. As a result, contextual disadvantage is conveyed in this course as a concept with extremely strong semantic gravity (SG++), as it is completely grounded in very specific and described contexts. The semantic density of the concept is retained to some extent through reference to a framework of Child Friendly Schools (http://www.unicef.org/cfs/), which in itself relies on a constellation of concepts. Also, pre-service teachers are required to consider orphan and vulnerable children and discuss the development of their self-concept and self-identity. Self-concept and self-identity are not explicitly framed by any theory in the course material, but they do point pre-service teachers to some conceptual complexity in the idea of contextual disadvantage. The concept can be mapped as SG++/SD-.

Social problems is a final concept and is presented with two sources in one of the courses analysed. Newspaper reports and clippings are the one source, and their effect on the semantic profile of the concept is similar to that of the case studies, i.e., grounding the meaning in a particular time and place. It is noteworthy that pre-service teachers' own perceptions of social problems are validated as a second source of the concept. This represents the most extreme strength of semantic gravity evidenced across all the concepts, as the meaning of 'social problems' becomes each individual's personal experience. Here, incidentally, is where the LCT dimension of Specialisation would be relevant, as this is evidence of very strong social relations with the object of knowledge, as personal opinion and experience are regarded as legitimate forms of educational knowledge (a Knower Code). With this extremely strong semantic gravity comes particularly weak semantic density, as no other concepts or theories are shown to constitute the meaning of social problems (SG++/SD--).

Assessment

Assessment plays an important role in a course by indicating to students what is salient and where they should direct their focus. As such, assessment tasks can be considered as a reliable indicator of what teacher educators consider as important in their inclusive education courses. Two of the course assignments have been selected to illustrate particularly strong semantic gravity and relatively weak semantic density (SG+/SD-). These tasks are slightly abbreviated as follows:

A. *Go to two of your home schools . . ., collect information about OVCs [orphans and vulnerable children] and learners experiencing barriers to learning and development. Discuss the types of barriers experienced and show how the schools tackle these challenges.*

B. *Identify a real learner in a real classroom who experiences a barrier to learning. Observe the learner in class and decide on the accommodations necessary for the learner. Discuss with the class teacher how you would implement the accommodations as prescribed in the SIAS process. Then write a report . . .*

In neither of these assessment tasks is there a strongly demarcated "conceptual object of study" (Shalem and Rusznyak, 2013, p.1125) which would convey to pre-service teachers that their practice could be informed by theory or a context-independent body of knowledge. The semantic density of these tasks is thus weak (SD-), with pre-service teachers' own decisions (Task B) indicated as a legitimate form of knowledge of inclusive education. In Task A, pre-service teachers' attention is drawn to the school's actions in "tackling" the challenges, and in Task B, the teacher's knowledge of implementing accommodations is indirectly recognised. The specific "practice-based context" (Shalem and Rusznyak, 2013, p.1125) is strongly demarcated in each task, indicative of very strong semantic gravity (SG++). The message to these pre-service teachers is that meaning is made in context, and enacted in practice. Moreover, the knowledge of inclusive education as reflected in these tasks is taken to be highly individual and contingent, depending on the contexts that the pre-service teacher encounters.

Taken together, the four concepts and the two assignment tasks can be mapped onto a semantic plane of recontextualised knowledge (Maton, 2014; Shay, 2013) and are seen to be located in the quadrant of stronger semantic gravity, and weaker semantic density (SG+/SD-). This suggests that many of the concepts and tasks in inclusive education courses reflect the logic of a practical curriculum (Shay, 2013). Before problematising this orientation, I would like to suggest possible reasons for inclusive education being recontextualised into a pedagogic discourse characterised by such strong semantic gravity and relatively weak semantic density.

Accounting for the practical orientation of inclusive education courses

The field of knowledge production from which teacher educators select inclusive education knowledge is characterised by relatively strong semantic gravity (Walton, 2016). There is an often repeated mantra in the field that the meaning of inclusive education itself is context dependent, and will be conceptualised and implemented differently in different contexts (Florian, 2012; Kozleski, Artiles and Waitoller, 2011). As far back as 1998, Booth and Ainscow (1998) noted that different contexts influenced the ways in which inclusive education was practiced, and that comparisons across contexts were not helpful. This emphasis on contextual peculiarity has resulted in the field of knowledge production focusing on describing iterations of inclusive

education in a wide variety of geographical locations and socio-cultural and historical contexts. With this emphasis on the contextual dependence of the meaning of inclusive education, it is unsurprising that teacher educators reflect this in the knowledge that they select.

The field of knowledge production in inclusive education has also been criticised for being theoretically flimsy, and hence could be said to be characterised by relatively weak semantic density. Armstrong, Armstrong and Spandagou, (2010, p.37) note the "theoretical vacuum" in which inclusive education sits and Slee (2011, p.65) says that is important to "Build a theory of inclusive education". This is not to say that there is no theoretical work in inclusive education. South African scholarship in inclusive education has had a strong disciplinary basis in psychology, with many influential academics in the field being psychologists (Walton, 2016). This work has brought ecosystemic theory and the ideas of Bronfenbrenner to the foreground in inclusive education research (Geldenhuys and Wevers, 2013), policy (DBE, 2010, 2014) and teacher education (Swart and Pettipher, 2011). There are also South African sociologists (Sayed, Subrahmanian, Soudien *et al*., 2007) and philosophers (Horsthemke, 2017) engaging with issues of educational inclusion and exclusion, reflecting Dyson's comment, quoted in Allan and Slee (2008, p.35) as,

> . . .[Y]ou get a kind of wing of the inclusion movement which is very much about conceptualization, critical thinking. If it has a home in academic disciplines it's probably within philosophy of education, sociology of education, where people do not feel it is necessary to do empirical work out there in the field because it doesn't actually tell you very much.

This suggests that there is the potential to locate inclusive education in initial teacher education within broader disciplinary and theoretical traditions.

The influence of policy must also be considered in accounting for the dearth of theory in inclusive education courses. Policies are in what Bernstein (2000, p.33) calls the "Official Recontextualising Field" (ORF) which is "created and dominated by the state". Bernstein is clear that the independence of the PRF from the ORF is "a matter of some importance" (p.115). He argues that through the ORF the state tries to weaken the PRF and reduce its relative autonomy over the construction of pedagogic discourses. The ORF exerts some influence over pedagogic discourses of inclusive education in South Africa. As noted above, one course in this data set frames learner support within current policy, and some authors of textbooks for pre- and in-service teachers (like Ntombela and Raymond (2013)) look directly to policy to

define and rationalise inclusive education. What is less clear is the relationship between the field of inclusive education knowledge production and the ORF in this country. Policy makers selectively appropriate research to inform and justify their policies, and in accordance with their objectives (Sarakinioti, Tsatsaroni, and Stamelos, 2011; Vithal and Volmink, 2005). South African policies make scant reference to the research bases that inform them, with key policies like White Paper Six (DoE, 2001) and SIAS (2008/2014) offering no reference lists. Policies that do compile reference lists (like *Guidelines for full-service/inclusive schools* (DBE, 2010) and *Guidelines for responding to learner diversity* (DBE, 2011b) cite very little South African research. Close readings of these documents do suggest the strong but tacit influence of ecosystemic theory on policy formulation, and some attempts to replace a medical deficit approach to difference and disability with the social model. Clearly, this is an area that requires further research in the development of the field of inclusive education in this country.

Another possible reason for the practical orientation of inclusive education coursework in ITE is that textbooks in South Africa that might be prescribed for courses foregrounds inclusive education as a practical knowledge. In their preface to the book *Making inclusive education work in classrooms,* Pienaar and Raymond (2013, p.viii) say that this book "will help teachers and teachers-in-training see how inclusive education can *work* to benefit all children" (emphasis mine). The back-cover blurb of the often-prescribed *Addressing barriers to learning* (Landsberg, Kruger and Swart (Eds), 2011) says that the book contains, "Case studies [which] offer practical examples and activities [which] provide hands-on experience regarding classroom practice and management . . .". Finally, *Believe that all can achieve* (Bornman and Rose, 2010) is punted on the back cover as paying "specific attention to practical implementation". These examples are presented not to suggest that attending to inclusive practice is not important, but to show that teacher educators do not have to look far to find inclusive education recontextualised as practical knowledge.

A final reason for inclusive education being presented with the logic of a practical curriculum is the "ideological screens" (Bernstein, 2000, p.115) through which an original discourse must pass as it becomes a pedagogic discourse. There may be any number of ideological screens that could be identified in the contested space of inclusive education. Here I would like to draw attention to two closely related screens in relation to my discussion about semantics and curricula within an ITE programme. The first would be

the extent to which the recontextualising agents (in this case, teacher educators), subscribe to a theory-dependent or theory-independent approach to initial teacher education as espoused by Shalem and Rusznyak (2013). The theory-dependent approach privileges theory in initial teacher education on the basis that "It is necessary to develop propositional understanding about concepts and modes of justification amongst student teachers, with the view to equipping them with an epistemic foundation that will guide their professional judgement" (Shalem and Rusznyak, 2013, p.1121). A theory-independent view, by contrast, eschews theory in favour of reflection and apprenticeship. The assessment tasks described above seem to reflect the latter approach, as there is no reference to theory in the tasks, but reflection and observation/apprenticeship are valorised.

The second ideological screen is similar to the first and refers to the extent to which teacher educators promote conceptual or contextual coherence in knowledge selection (Rusznyak, 2015). It seems that in much of what is offered in inclusive education courses to pre-service teachers is ". . . situational and practical knowledge . . . [and] contextually relevant insights" (Rusznyak, 2015, p.24). This suggests that contextual coherence is privileged by teacher educators in the design of inclusive education courses. There may be good reason for this. Inclusive teaching is currently not a reality in many South African schools (see, for example, Engelbrecht, Nel, Smit, and Van Deventer, 2015) and Engelbrecht, Nel, Nel, and Tlale (2015)) and teacher educators cannot rely on practicum experiences or early career school environments to model inclusive practices. As a result, teacher educators may be concerned to offer as much practical knowledge about teaching inclusively as possible in the ITE programmes.

While there may be good reasons why inclusive education is taught with the logic of a practical curriculum, with minimal theory and weak semantic density, and contextual exigencies foregrounded with strong semantic gravity, I argue that this is problematic.

The problem with the practical orientation of inclusive education in ITE

I do not wish to rehearse the critique that Shalem and Rusznyak (2013) have made about theory-independent ITE, nor Rusznyak's (2015) indication of the limitations of knowledge selection based on contextual rather than conceptual

coherence in the preparation of teachers. Instead, I wish to focus specifically on inclusive education and argue that the current positioning of inclusive education in ITE is problematic. The problem with the strong semantic gravity is that the specificities of context may be over-emphasised to pre-service teachers. This means that they may not see the knowledge as applicable beyond particular contexts, and may not imagine themselves able to transfer the knowledge to different contexts. Furthermore, at the extremes of strong semantic gravity, personal, experiential and idiosyncratic understandings of inclusive education are legitimated. This easily becomes mere everyday knowledge, which potentially reproduces the status-quo. This works against the disruption of existing inequitable practices in education and thwarts the achievement of more inclusive ways of schooling.

The relatively weak semantic density in courses, revealed in the scant reference to theory means that pre-service teachers may not access non-intuitive ways of thinking of learner difference in relation to pedagogy. Theory deepens and broadens everyday interpretations and experiences and provides different and alternative descriptions of educational processes and practices (Biesta, Allan and Edwards, 2014). In the case of inclusive education, theory potentially offers abstract knowledge and concepts, which can then be applied in complex situations. Inclusive classrooms are indeed complex contexts (Engelbrecht, Nel, Nel and Tlale, 2015). But when inclusive education concepts are pared down in ITE and abstraction is minimised, the problem it addresses becomes simple, merely requiring a technical or instrumental response. In other words, the relatively weak semantic density of inclusive education in ITE programmes in South Africa means that it is not positioned within the logic of a professional curriculum.

An argument for a professional orientation to inclusive education

To develop inclusive education as a professional knowledge in professional curricula requires "knowledge progression" (Shay, 2013, p.576) through strengthening semantic density, while not losing its semantic gravity. This means moving inclusive education in ITE from SG+ and SD- to SG+ and SD+. I would suggest that semantic density can be strengthened by forging constellations with other concepts and expanding the meanings of the concepts presented. It would also mean deriving concepts from theory rather than policy, practice or experience. An example from the data is illustrative.

Unlike other concepts, co-operative learning is presented in one of the courses as a concept where the source is explicitly shown to be located in theories from the discipline of psychology. The theories given as the foundation from which co-operative learning can be practised are Vygotsky's socio-cultural learning theory, Bandura's work on observational learning and Johnson and Johnson's theory of social interdependence (Putnam, 2009). This foregrounding of theory weakens the semantic gravity of co-operative learning, in that context is rendered less significant for meaning—in the case of social interdependence theory, the field of education is not even required. Context is not absent, though, as the theory is expected to be applied in practice. This means that the concept cannot cross Shay's "ceiling" into the quadrant of theoretical knowledge. The theory strengthens semantic density by packing the concept of co-operative learning with a constellation of other concepts (mediation and zones of proximal development from Vgotsky, observational learning from Bandura and positive and negative interdependence from Johnson and Johnson's theory), each of which has strong semantic density in its own right. Given these sources, the concept in this course can be mapped as SG+/SD+.

It is clear, though, that co-operative learning *could* have been presented as a concept with much weaker semantic density. There is a significant body of accessible knowledge about co-operative learning that is based on codified principles of good practice. This literature describes classroom arrangements that support optimal co-operative learning, like role allocation, group accountability and skills instruction (see, for example, Jolliffe (2007)). These could form the basis for teaching the concept in a way that position it, like the four concepts discussed above, as practical knowledge in a practical curriculum. By omitting reference to theory, and simply drawing pre-service teachers' attention to the codified principles of co-operative learning in practice, the semantic density of this concept could be significantly weakened. This is significant, because it illustrates the point that concepts in inclusive education do not necessarily have to have weak semantic gravity, but that there is the possibility for situating them within broader disciplinary and theoretical traditions.

The example of co-operative learning demonstrates the possibility of both strengthening or weakening the semantic density with which a concept is presented to pre-service teachers. In a quest for "knowledge progression" (Shay, 2013, p.576) in inclusive education, I return to the four concepts characterised by weak semantic density discussed above (in section 5.1).

There are possibilities to strengthen their semantic density by forging constellations with other concepts and explicitly situating the concepts within the disciplines of psychology and/or sociology, and the scholarship of teaching. Differentiated instruction and learner support could be derived more specifically from the reading and learning that pre-service teachers do in psychology of education, with particular reference to theories of learning and development (Kern and Fritz, 2017). These concepts could also be located in the wider studies of curriculum, pedagogy and assessment undertaken by pre-service teachers. Contextual disadvantage and social problems could be strengthened with reference to theories in sociology of education, and concepts like cultural reproduction, race and class, which are likely components of pre-service teachers' studies in education (Soudien, 2017). By mooring concepts taught in inclusive education courses within a disciplinary framework (either psychology, or sociology, or a well-informed combination of the two)[3] it becomes possible to bring the concepts into relationship with each other, and builds coherence in relation to other relevant concepts. This has the potential to move the position of inclusive education towards professional knowledge within ITE.

Conclusion: Looking forward

In this argument I am not discounting practical knowledge, nor attempting to invalidate pre-service teachers' voices that clamour for less theory. Instead, it is to recognise the limitations of a practical orientation to inclusive education in developing professional teachers who have access to relevant theory and research that could inform their professional judgment. It is also a call for the recognition of both the possibilities and limitations of ITE in developing inclusive teachers and teaching. The undergraduate qualification may be the only time and space that teachers have in their careers to be systematically introduced to theories, and ITE should not easily relinquish this in favour of a more 'practical' curriculum in inclusive education. There is also a limit to what can be accomplished in a four-year pre-service qualification, and it would be useful for teacher educators to consider what should be learned about teaching inclusively in the induction year and in continuous professional development. There may be value in South Africa considering

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[3]   Whether inclusive education should be seen as an issue of learners and their diversity, teachers and their competence or schools and society is explored in more detail in Walton and Rusznyak (2016).

the development of a framework that describes inclusive teaching in a way that differentiates the competencies that could be expected by teachers at different stages of their careers. This has been done in Scotland (Scottish Teacher Education Committee, 2014) and might offer South African initial teacher educators a clearer sense of what needs to be developed in the pre-service qualification, and what could be left for site-based learning through mentoring and professional learning communities, and other professional development activities. Released from the demand to provide all the practical knowledge that an inclusive teacher would need, initial teacher educators could then focus on developing a theoretically informed conceptual framework for inclusive education that would promote inclusive education as a professional response to the complexity of learner diversity in South African classrooms.

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Dangers of generic pedagogical panaceas: implementing service-learning differently in diverse disciplines

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Abstract

Descriptions of service-learning in the literature tend to position it as a powerful pedagogic tool as well as an exemplar of 'best practice' applicable across all disciplines and institutional contexts. Furthermore service-learning is couched as a moral imperative. In the South African context, this moral imperative is translated into policy pronouncements driving institutions of higher education to demonstrate responsiveness to the transformation needs of broader society. In this article, two departments, Philosophy and Environmental Science, at one university are used as case studies to interrogate what enables the uptake of service-learning as a pedagogic tool. Drawing on the work of Fairclough, this paper identifies the dominant discourses at play and considers how they constrain or enable the uptake of service-learning. We advocate for the infusion of service-learning in curricula, but argue that institutional culture, disciplinary values and the structure of knowledge impact on its uptake and should not be dismissed in the implementation process.

Introduction

The transformation agenda of South African higher education is informed by policies such as the 1997 White Paper which calls for a re-examination of institutional values:

> South Africa's transition from apartheid and minority rule to democracy requires that all existing practices, institutions and values are viewed anew and rethought in terms of their fitness for the era. Higher education plays a central role in the social, cultural and economic development of modern societies. In South Africa today, the challenge is to redress past inequalities and to transform the higher education system to serve a new social order, to meeting pressing national needs, and to respond to new realities and opportunities (Department of Education (DoE), 1997, p.7).

The White Paper indicates that universities have to show social responsibility by engaging in community service programmes (Lazarus, 2001). Policy pronouncements such as these contain a strong moral imperative by overtly articulating the role of higher education in driving a transformation agenda in society. The White Paper of 1997 further stated that promoting social responsibility and awareness in students through community service programmes is a goal of higher education, the National Plan for Higher Education (2001) reinforced this by indicating that enhancing responsiveness through community service was a priority, and then the White Paper of 2013 argued that there is a need to explore the ways in which community service can foster constructive social engagement.

Despite regular calls for community engagement to be central to the work of our universities, it is not always evident what is meant by the term. While teaching and research can be seen to enjoy relatively stable conceptualisations, community engagement is plagued by 'epistemological ambiguity' (Hall, 2010). It is not clear who should be responsible for it, who should benefit from it, or what its purpose is; the methods, approaches and scope of community engagement are ill-defined and often contested.

Community engagement activities can be taken to include infusion into teaching and learning (for example, as service-learning) as well as initiatives provided by academic staff in their professional capacity and by students using disciplinary expertise (Council on Higher Education (CHE), 2006). It thus comprises a messy spectrum of activities which often draw from fairly disparate ideological positions that range from notions of charity and good deeds through to being spaces for engaged research and authentic learning.

A number of universities have drawn on the concept of 'public good' (Walker 2012, Williams 2016) to consider how their core activities can enable advantages beyond the private benefits accrued by individual students through their graduation. Community engagement is often cited as one means of correcting the balance between the university's contributions to public and to private goods (see, for example, Subotsky, 2001) and, thus to the forging of a new 'social contract' (Braskamp & Wergin, 1997) in which universities become jointly responsible for social change, along with bodies in the community with which they partner. A consideration of public good benefits provides a platform for more focused attention on community-engaged activities such as service-learning in higher education curricula.

This paper looks at the ways in which service-learning has been conceptualised with a moral charge and then looks at two case studies, Philosophy and Environmental Science, to question the extent to which this moral charge is enough to translate into uptake across the institutional and disciplinary landscape. The paper focuses on two disciplines within a specific university context to consider constraints on the uptake of service-learning as a pedagogic tool. The argument is not *against* the implementation of service-learning, but rather it is a call for a more nuanced approach that takes disciplinary norms and institutional cultures into account, and indeed challenges them where appropriate.

Emergence of service learning

Service-learning emerged in the 1960s (see Hollander, 1999) as a vehicle that would promote engagement and rejuvenate democracy in the academy (Bringle & Hatcher, 2002), through the 'integration of community service into academic study' (Hollander, 1999, p.vii). Because service-learning was positioned as a means of connecting educational processes with real-world issues, the concept was picked up in South Africa in the 1990s, in light of the desperate need for change in the country following the shift to democracy. These are some of the factors that culminate in service-learning emerging as a morally charged concept.

Bringle and Hatcher, who are frequently cited in the South African context, note that:

> Service-learning is a credit bearing education experience in which students participate in an organised service activity that meets identified community needs and reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility (1995, p.112).

Service-learning, like its broader counterpart, community engagement, is a concept mired by contestation, evident in the varied definitions describing this pedagogic tool as designed to promote "academic enhancement, personal growth, *and* civic engagement" (Ash & Clayton, 2004, p.138). The intention of service-learning modules is to involve students in organised community service that addresses local needs while developing academic skills, and providing students with opportunities to further develop their sense of social responsiveness and commitment to the community (Hlengwa, 2010). The idea

of service-learning has often been introduced as an exemplar of 'best practice' of engagement between the university and broader community (CHE 2008).

Service-learning is framed as having the potential to contribute to higher education through engagement with societal issues and thereby showing a more visible measure of social responsiveness (Singh, 2014). Service-learning can be seen as a means by which to produce graduates steeped in disciplinary knowledge who are conscious of how that knowledge can be used to alleviate societal pressures.

Methodology

This paper draws from a PhD study (Hlengwa, 2013). Presented as two case studies, this article explores the response to calls for community engagement within two departments: Philosophy and Environmental Science. This allows an in-depth investigation of how programmes within their context of a particular university attempt to implement a national level push towards community engagement as a moral imperative.

Rhodes University is one of five 'research-intensive' universities in the South African system (Cloete, 2010) which affirms discourses within the University constructing it as a 'scholarly university' (Boughey, 2009). There are also strong financial imperatives whereby research is strongly validated in the institution because the state funding formula drives the privileging of research in all universities in South Africa (McKenna & Boughey, 2014).

Data for the cases take the form of curriculum documentation, including departmental handbooks and course guides, and interviews. In Philosophy, interviews were conducted with a senior academic in the department, Peter,[1] and Charlotte,[2] a Masters student. Both were involved with 'The Logic Course' offered as a community outreach project to school learners. The primary researcher initially approached the Head of Department to ask where service-learning was happening in the department. He explained that the only example was the Logics course and indicated the two people most involved in

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[1]   Peter is the pseudonym of the senior academic interviewed.

[2]   Charlotte is the pseudonym of the Masters student interviewed, who has since graduated with a Doctorate in Philosophy.

the running of the course. Both agreed to participate and signed informed consent forms indicating their voluntary participation and detailing their rights.

In Environmental Science, the whole department of four people, all of whom were involved in various service-learning initiatives, participated in a discussion about service-learning and the concerns of the research. This was followed by an in-depth interview with one staff member, Mona.[3]

The aspects of the data being reported here were analysed through Critical Discourse Analysis whereby sets of statements 'which give expression to the meanings and values of an institution' (Kress, 1989, p.7) were identified. Discourses here are understood as a means by which ideological positions are expressed, but more than this, they are understood to function as mechanisms with power over how the world is experienced (Fairclough, Jessop & Sayer, 2002). Discourses are thus not merely seen to be reflections of ideas, but as also having power to enable or constrain events from occurring. Furthermore, discourses are understood to be but part of the explanation for the events and experiences in the world. The position taken by the authors of this article, in line with Fairclough (2005), is that all there is to know about a phenomenon cannot be made up only of discourses. In contrast to some postmodern approaches to discourse analysis then, in this article discourses are understood to be but one set of powerful mechanisms which sit alongside a number of other structures each having enabling and constraining powers (Fairclough, 2005). This study is thus partial in its attempts to account for how service-learning emerged in these two case study departments. What follows are the findings of the study presented as a set of dominant discourses that can help us to account for the varied emergence of service-learning as a pedagogic tool in Philosophy and in Environmental Science in this particular research intensive university. We can thereby to begin to consider the various constraints and enablements on the implementation of this pedagogical approach across a range of contexts.

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[3]   Mona is the pseudonym of the senior academic interviewed.

The case of philosopy

In line with the small size of Rhodes University, the Philosophy Department has a small staff complement as well as moderate student numbers. It comprised six full time academic staff and an administrator and under four hundred students from first year through to doctoral level.

Despite significant pressures on academic departments to formally include service-learning in the curriculum, the Philosophy curriculum did not offer courses that use service-learning as pedagogic tool. As will be seen, an argument was made that this was because the nature of the discipline constrained possibilities for such courses. The closest community engaged interaction in the department was at Master's level where students participated on a volunteer basis in the teaching of a course in philosophical logic, 'The Logic Course', at the Grahamstown Area Distress Relief Association (GADRA)[4] 'Matric School'.

This course focuses on teaching informal logic structures at a level accessible to high school learners exposing them to philosophy at a basic level through application rather than an overly theoretical approach. This entailed learners being introduced to the uses of argument and to the nature of fallacies. The Masters students guided the learners into identifying different types of arguments as a way of providing a form of grounding logic. These students worked with the school learners over a nine-month period towards achieving the goals of the course. It is important to note that the Logic Course is neither a formal part of the school learners' curriculum, nor does the service that the students provide by teaching on it provide credits towards their Master's degree. However, the GADRA Logic course meets some of the service-learning criteria identified by Bringle and Hatcher because the students' participation offers them opportunities "to gain further understanding of course content and simultaneously broaden an appreciation of the discipline while enhancing a sense of civic responsibility" (1995, p.112).

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[4]   The Grahamstown Area Distress Relief Association (GADRA) runs a number of projects intended to support citizens of the town. The project of interest to this study is the 'Matric School'. This provides an opportunity for school learners needing to rewrite Grade 12 subjects, which they have either failed or for which they require better marks for the purpose of entering tertiary studies. The GADRA Logic course offered by Philosophy Master's students is included as an extracurricular activity in the Matric School.

Valuing the abstract

The approach to teaching Philosophy in this particular department, according to various course guides, is to induct students into the discipline by exposing them to the breadth of the discipline. Interview data indicates that Charlotte and Peter were in agreement that the approach used leads students through argumentation by asking the really 'big' questions such as 'What is knowledge'? and 'Is scientific enquiry a way to gain knowledge'? The 'big' questions may well be inspired by contemporary issues in communities and therefore driven by a genuine regard for the need to analyse and arrive at plausible explanations of the observable and experienced, but the form of the inquiry is expected to remain theoretically abstracted. Central to the discursive construction of the discipline in the interviews was the idea that it focuses on theorising as means of providing insights of everyday living, but that it does so in formally abstracted ways, thus making it an unlikely discipline to consider service-learning activities; a point echoed in the literature (Zlotkowski in Lisman & Harvey, 2000, p.vi). Academics draw on 'procedures' that result in carefully structured arguments following the rules of logic but the activity is essentially theoretical rather than practical.

Philosophy as a discipline was generally taken by the interviewees, and in line with much of the literature, to be concerned with general and fundamental problems focused on existence, knowledge, values, and reason (Valentine in Lisman & Harvey, 2000, p.145). The academic pursuits of colleagues in this department, in the realms of both teaching and research, are framed by such abstracted approaches. Philosophy in this particular department had very strong boundaries between its concerns and what is seen to be outside of its domain. Knowledge production was thus understood as being 'inward looking' to the norms and values of the Philosophy disciplinary community. Peter's candid reflection illustrates why it would thus seem that the way that knowledge is valued in the discipline makes it less likely to be open to curriculated community based activities:

> *I do think philosophy does see itself largely as a discipline that is not practical, all right? . . .Now the idea of practical is an interesting philosophical concept, we did a lot of analysis about what practical means because, honestly, I don't know what it means. I think when you say that philosophy is not a practical discipline you mean; "I don't care about the world, my focus is on these deep theoretical issues",*

> *allegedly deep theoretical issues. And if I go practical. . . I'm going to water down my discipline.*

There was also a particularly strong discourse of academic freedom as an important value in the data. In the Philosophy Department at Rhodes University curricula discussions are not centralised and individual academics have a great deal of autonomy in determining what to teach and how to assess. As Peter noted: "It is very individualistic the way we choose 'things'". There was a valuing of the individual academic's right to select what gets taught and how it gets taught. This, in turn, means the academics have significant ability to influence the development of the disciplinary identities assumed by their students. In discussing discourses found in research intensive institutions in South Africa, Boughey & McKenna (2014) identified a discourse of 'academic argumentation' where a critical disposition is seen to include the demand to be trusted to develop and implement a curriculum without interference. It is possible that this discourse would work against the system-level implementation of service-learning, despite a 'moral charge' in the national documentation.

The identities forged by academics in this department were closely tied to those of the disciplinary community where the focus for most philosophers is on contemplating the existence of a real world rather than being engaged in practical pursuits *in* a real world (Lisman & Harvey, 2000, p.ix). Furthermore, the academics' identity seemed aligned to the 'argumentative academic' identity identified as common in research intensive universities. However, these identities are potentially in conflict with demands that institutions of higher education, particularly in South Africa, should be socially responsive to the challenges facing society. Peter draws attention to this tension by critically questioning the stance taken by philosophers:

> *We are an institution that is embedded in society. What is our role? What have we done as a community [of philosophers]? I think South Africa presents us with a very interesting format for thinking about this because the problems are so obvious – it hits you in the face every day. Are you just going to be looking inward and ignoring it and drawing your salary whatever, and writing for your peers, or are you going to think about things?*

The GADRA Logic Course would seem to be an opportunity for Philosophy academics to be more involved in community. However, the level of

disciplinary knowledge is not even at a first-year level of Philosophical theory, as expected given that the GADRA Logic Course is a school level introductory course. This made it unlikely, according to the interview data, that the course would be broadly appealing as an activity for most academics in the department.

Philosophers, like members of any other discipline, are beholden to ideas, values and practices that are conceived, argued for and maintained by the disciplinary community which, in turn, then shape the curriculum offered in the department (Henkel, 2005). This seems to imply that the introduction of new ideas about Philosophy, how it should be taught and how it relates to the world 'outside' the discipline (such as the idea that service-learning should be infused into the curriculum) would potentially have consequences with regard to the way the department is viewed by colleagues elsewhere. However, the existence of a volume of essays "Beyond the Tower – Concepts and Models for service-learning in Philosophy" (Lisman & Harvey, 2000) and various other texts (for example, Ramona & Hawthorne, 2011; Oxley & Ramona, 2015) provide evidence that others in the disciplinary community have indeed found it possible to use service-learning to teach Philosophy.

Primary audience discourse

What became apparent from the data is that the nature of the discipline of Philosophy itself, and the curriculum this engenders, promotes an approach to teaching and learning with a tenuous link to practical involvement in social concerns. In this regard, the *primary audience discourse* has the potential to constrain the likelihood of service learning being used as a pedagogic tool in Philosophy. The primary audience for Philosophers identified in the data is the disciplinary community. As Peter explains:

> *What we do in the first instance is speak to our colleagues. We have a community, we speak to each other, and I think that there are some who are not for that, right? Our primary audience should be our peers, but that does not mean that we should not have an impact, that we should not be concerned about issues?*

It would seem that the semantic density of Philosophical concepts and theories (that is, the degree of condensation of meaning, Maton, 2014) is so strong that they require considerable adaptation before they could be

accessible to audiences beyond the boundaries of the discipline and the academy, and this is not viewed as a valuable endeavour. By making semantically dense concepts accessible, there would be the potential to 'water down' the discipline. The focus on the disciplinary community as the primary audience is important as it impacts on the emergence of service-learning.

> *I could tell you some of the things that I would say, that the community [of Philosophy] would say as a whole, one of the things that the community would say as a whole is: 'Who cares?' We are not here to impact on an issue. We are interested in issues, right? Whether it has an impact or not, that is neither here nor there. Perhaps a little less honest response would be – it is a true response but a less honest one- is that there will be a trickle-down effect. We do not really know.*

This discourse constructs philosophers, and the activity of philosophising, as detached from worldly concerns because they are engaged in semantically dense conversations with each other. Philosophers seem to embrace this reputation of research as having limited practical application, and, according Paphitis and Kelland, philosophers working the South African context "have done little to dispel this reputation" (2015, p.420). Paphitis and Kelland reject this dominant view of Philosophy and argue for an ideological paradigm shift that opens up the possibility of infusing service-learning.[5]

Having the disciplinary community of Philosophers as the primary, or even singular, audience for the work of Philosophy reinforces a focus on research as the core business of the academy. This issue was raised in various ways in the data:

> *I will tell you how I see myself, right? I see myself, as primarily, my first love is research, right? That is my first love.*

Although areas of research interest for philosophers are varied, the data suggested that these Philosophers concentrate on what is commonly understood as 'pure' or 'basic' research. The value of this type of research that "lies in the furtherance of human knowledge for its own sake" (Graham,

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[5]   It is interesting to note that since 2014, Peter has been instrumental in developing a credit-bearing course called LiNtetho zoBomi (zoBom) conceptualised as providing students with access to existential conversations. This course which draws strongly on the discipline of Philosophy but explicitly uses service-learning as a pedagogic tool. However, it has found its home outside of the Philosophy department in another academic centre.

2005, p.82) is different to that of applied research that has utility and a 'further end' framing. A claim can be made that the *research driven discourse* in this Philosophy department adds to the factors that constrain the emergence of service-learning, especially since the emphasis and interest of the disciplinary community is on understanding the world within their disciplinary community rather than changing it.

Discourse of teaching as common sense

The discourses discussed thus far account for the systemic discipline based factors constraining the use of service learning as pedagogic tool in Philosophy. In contrast to this is a discourse whereby teaching is not particularly valued as a complex social practice. Peter offers insights into the emphasis placed on pedagogy in his discipline, from which emerges a discourse of teaching as common sense:

> *I do not think Philosophers on the whole – I do not know what happens in other disciplines, I imagine similar things - do not really reflect that much on their teaching. Teaching is something that just happens naturally. It is a thing that happens when you go into a lecture - you impart information. But the focus is on research, not everyone, but for the most part.*

As a pedagogic tool, service-learning would in part require academics to reflect specifically on pedagogic practice. As long as pedagogy is understood to be a common-sense practice undertaken alongside more valued research activity, then it seems unlikely that there would be an opportunity to re-imagine teaching of Philosophy to include service-learning modules. Having discussed some of the dominant discourses which seem to constrain the easy implementation of service-learning in the case of Philosophy, we now move to consider the discourses that emerged in the case of Environmental Science.

The case of environmental science

Environmental Science was a relatively young department in the institution, originating out of a cross-departmental programme located in the Science Faculty. The four permanent academic staff members had committed

themselves to answering the growing demand for suitably qualified environmental professionals able to tackle environmental management and sustainable development.

While the department did not use the term service-learning, there is a course offered by the department that meets the definition. The course, Environmental Monitoring and Monitoring Systems (ENV 301), is offered in the third year and has seven outcomes that culminate in a practical year-long research project. The outcomes capture the academics' aspirations of what students would experience of the ways in which project management principles can be applied in the field. Central is the ability to work outside of the university with members of the community in interrogating a particular real-world issue.

The students are divided into project teams required to answer questions about specific environmental conditions and trends that affect humans and the broader environment, and which manifest locally. The projects also values students' developing an understanding of the significance of society's response. As Mona explains:

> *So, they might go out and do some measurements on the vegetation and they will interview some people and see how they are using the commonage and that kind of thing. So, it will be, we try and make those third-year projects span the three focus areas of social, economic and ecological.*

The theory introduced in the course centres around the design and implementation of environmental monitoring systems appropriate at different spatial and temporal scales and which integrate the biological, social and economic components of environmental systems. These are then investigated and reflected upon by means of the research project.

The research projects require the students to view Environmental Sciences from a range of perspectives thus making it important to not only interact and work in teams with each other, but also to work with other teams drawing on knowledge and expertise beyond the borders of the academy. The expectations of the course align readily with service-learning criteria.

Discourse in environmental science

Valuing research

Rhodes University's status as a research-intensive institution is aligned with this department's culture of constructing research activities as being the most prestigious of their activities. The valuing of research is of course not limited to this institution, or even to research intensive universities, and is arguably driven by notions of status and, as mentioned earlier, by the 'flat' nature of the national funding formula.

The 'Valuing Research' discourse signifies a conscious and purposefully deep engagement with research processes. The staff in this department draw on this discourse in justifying time spent on developing funding proposals for research projects. Staff members often collaborate in order to produce contract research. Mona alludes to this in discussing the premium placed on research:

> _Well, we publish a lot. We're a very productive department. We bring in masses of money. For us, because our fields apply, because the world is worried about what's happening, there is masses of opportunity for money. You have to work hard to get it, but you can. So that brings us recognition. We're a tiny department, there's four of us but we bring millions of Rands into this university that helps fund our students, and helps build linkages with other organizations around the world and so on._

Staff members in the department drew on this discourse in developing the ENV 301 course, which has research as its focus. A key aim of the course is to inducat students into the knowledge production processes in the field of Environmental Sciences, from problem identification, to data collection, to data analysis and dissemination of findings.

Intergrative discourse

The interview with Mona was replete with evidence of an _Integrative Discourse_. Here integrating oneself into the academic community in ways that entail being able to work across fixed boundaries of traditional disciplines, is valued. This is evident in the emphasis Environmental Science places on a

what is understood to be a successful education in the field – the undergraduate curriculum is, according to the data, firmly focused on the production of graduate students with a particular orientation towards and relationship with the environment. One of the key concerns in the Department is thus the production of the next generation of a particular kind of 'Knower' (Maton, 2014). While there is a strong knowledge base to Environmental Science, it draws from multiple disciplines and it is the development of the attributes of the Knower that is central in the curriculum. The quintessential Environmental Scientist, according to Mona, has a sound foundation in a specialist discipline, but, most importantly, takes on a particular 'understanding of the world around them'. This understanding entails acknowledging different worldviews from which different value systems emerge. This acknowledgment is critical to successful interaction in interdisciplinary research groups understood to be central for the addressing of complex socio-ecological issues.

Linked to the integrative discourse, where Environmental Scientists are expected to be able to integrate themselves into various inter-disciplinary communities to address environmental concerns, was the '*In Society*' discourse. This discourse promoted the ideal of situating the University closer to broader society, thus answering the call for universities to be a partner in a new social contract. This was linked to a wider social justice agenda of addressing social inequities. The *'In Society'* discourse clearly understood the University, and the Environmental Sciences department in particular, as having a role to play in addressing inequities not as an adjunct concern but as central to the identity of the department.

Mona and her colleagues explicitly focus on responding to the world beyond the university walls. This involves responding to environmental and sustainable development challenges and thus requires that curricula are developed that allow students to respond to these challenges. The ever-changing nature of the challenges means that course content needs constantly to be reviewed.

> *So [we draw] examples from the latest publications, [and] other materials that come across our desk. You know, like now this year, when I teach climate change I am going to have to do the conclusions from the [latest conference]. So, you have got to be constantly updating things.*

The process of updating and keeping the material current is the responsibility of individual lecturers, which echoes the discourse of academic freedom found in the Philosophy case. However, in this Department the curriculum development process that is followed entails that the changes are not only made at the level of the individual lecturer's syllabus but rather involve a sharing of practice amongst colleagues. Mona and her colleagues participate in regular curriculum review processes where the changes at individual course level are reviewed in order to see how they integrate and enhance the programme as a whole.

> *But we do meet [at least] twice a year for our kind of long Departmental Indabas.*[6] *We look at the course evaluations and get feedback from that, and we discuss it. [We ask] 'Is this too difficult at second year level?' Are they grasping this? But yes, it is important that they get it at this early stage. So, we do talk about it and reflect on our courses and see if any changes need to be made. And then, every year, we update our courses all the time, because in our field there is no textbook, and the field's changing so rapidly.*

Valuing pedagogy

Valuing Pedagogy was another discourse evident in the Environmental Sciences case study data. This discourse privileges a focused attention on pedagogical practice. For example, conference presentations could include knowledge from the field or from the classroom.

> *I've just come back from Florida, and I was invited to present at a conference which was held by what's called the Tropical Conservation and Development Programme. . . and there was a whole session on education on the last day, and it was absolutely fascinating. I got up and I said, "This has been amazing." You know, it really reinforced for me that we're doing the right thing back here.*

The *Valuing Pedagogy* discourse is located within the broader order of *Integrative Discourses* because it is indicative of a broader commitment to the way attention to teaching is linked to the broader ideals of Environmental

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[6]   Indaba is a Zulu word for 'news', used in South African English context to constitute a meeting or a forum where different views on a topic are shared.

Science. It can be argued that the explicit focus on pedagogy and the culture of overtly considering curriculum issues in departmental conversations makes it more possible to include service-learning approaches which would require careful understanding of how teaching and learning occur.

Conclusion

This paper offers insights into factors that influence curriculum decision-making in a Philosophy department and an Environmental Sciences department at a research-intensive institution. These specific curriculum cases are used to question the generic imposition of service-learning as both morally and pedagogically best practice. While this paper advocates service-learning as a beneficial pedagogic tool of any socially concerned curriculum, we argue that the development of any service-learning initiative needs to take seriously the knowledge structure of the target discipline as well as the inherent disciplinary values and institutional culture.

The argument presented concedes that singular,[7] inward-looking disciplinary communities are faced with the task of balancing the disciplinary values with the call to consider the use of pedagogic tools such as service-learning as a mean of heeding the strong moral imperative faced by the academy. The knowledge structure of a discipline like Philosophy has been shown to impact on the incorporation of service-learning as a pedagogic tool. On the other hand, the structure of knowledge in Environmental Sciences, with its strong valuing of integration and the development of a Knower who can respond to concerns in the world, is likely to have an easier time of implementing service-learning. It becomes apparent that service learning is not generic and may differ significantly across disciplines to the extent that it challenges the simplistic definitions promoted in generic guides.

Universities increasingly have to contend with pressures from outside the academy that impact on core disciplinary values and functions. Publically funded institutions like Rhodes University are, to some level, autonomous yet at the same time they are held accountable to the public purse by various mechanisms. University leaders and individual academics then have the

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[7]   Bernstein (2000) distinguishes between singular disciplines which are inward looking in their knowledge production (such as Philosophy) and regions which draw on multiple disciplines and look out to the world of work (such as Environmental Sciences).

responsibility to maintain a balance between these external demands and the integrity of the academic enterprise.

Until we understand what the discipline values then we cannot impose a pedagogical approach as generic good practice. This has significance for those in academic development who are responsible for working with academics around issues of curriculum development. Such considerations of the impact of disciplinary structures and values also provide an important critique of decontexualised 'best practice' discourses prevalent in many national documents, including the framing of a number of national quality initiatives. With an understanding of the ways in which the values and structures of the disciplinary knowledge impact on what is pedagogically possible, the notion of 'best practice' comes under scrutiny and we are forced to work in more careful ways to implement curriculum initiatives.

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Non-formal adult education for self-employment: the importance of post-training support for micro-enterprise development in South Africa

Celestin Mayombe

Abstract

The concern that informed this article is that adults who face long-term unemployment due to a lack of marketable skills remain unemployed after completing adult non-formal education (NFE) programmes in South Africa. The purpose of the article is to investigate major challenges trainees of NFE programmes for self-employment encounter in starting and growing small businesses, and the types of post-training support they receive from public and private institutions in KwaZulu-Natal (KZN) province. While the structure of the South African economy is at fault, the findings reveal that weak institutional linkages result in trainees not having access to essential post-training support, community resources, public goods and services. The author concludes that centre managers did not take into consideration the importance of institutional linkages and the socio-economic background of the trainees who have faced long-term unemployment and poverty leading to social isolation, which then further reduce the likelihood of self-employment.

Introduction

It is widely acknowledged today that many unemployed adults are hindered from entering into labour markets due to a lack of marketable skills. Since its inception in 1960, adult non-formal education (NFE) was intended to be a tool to create opportunities for marginalised social groups in order to bridge unemployment and employment (Georgiadou, Kekkeris and Kalantzis, 2009). Kedrayate (2012, p.12) points out that NFE is perceived as a "second chance education" to those who have been "pushed out" from the formal system. According to Langer (2013) and Kyndt, Dochy and Nijs (2009), adult NFE centres in Sub-Saharan countries have been able to develop holistic and integrated approaches to contribute to unemployment reduction. The

significance of NFE in poor communities is that where jobs are scarce, people learn to earn a living as self-employed.

Adult NFE can be seen as being related to the concepts of recurrent and lifelong learning. Scholars in the field (Kamil, 2007; Kedrayate, 2012; Jjuuko and Kwiri, 2010; Ololube and Egbzor, 2012) suggest that whereas recurrent and lifelong learnings have to do with the extension of education and learning throughout life, NFE is about acknowledging the importance of education, learning and training which takes place outside recognised educational institutions. In this article, NFE reflects a combination of the terms 'non-formal', 'education' and 'training' and refers to skills programmes carried out outside the framework of the established education system that involves foundational knowledge, technical and manual skills, entrepreneurial skills and competencies tailored to the specific requirements of a gainful employment or self-employment (DVV International, 2011; McKay, 2007; Erasmus, 2010). Furthermore, NFE is linked to self-employment for people who are currently not self-sufficient and who are at or below the poverty line, and to the informal sector where jobs are scarce (Rogers, 2004).

Adult NFE distinguishes itself from the formal education and informal education on basis of its purpose and approach. Weyer (2009) notes that NFE is an educational system outside the recognised framework that typically provides occupational access only to the lowest-level jobs because it does not have the legitimacy to grant school-based diplomas and credentials required to gain access to white-collar and professional jobs. For the NFE programmes to achieve this purpose, great attention is taken to ensure that training is tailored to a specific requirement of employment or income-generating activities (International Labour Organisation (ILO), 2009). The programmes are provided not only in technical skills but also in business, organisational and management skills to facilitate an adult trainee to become self-employed or to run a small business, most often a micro-enterprise.

In the context of South Africa, non-formal education is any education that carried on outside the formal school and higher education system and not certificated (Aitchison, 2007). Non-formal education (NFE) was an important part of the anti-apartheid struggle in South Africa. It helped prepare people for democracy, something formal education did not do. Prior to 1994 NFE was provided by religious groups, NGOs/CBOs, civic associations, workers organisations, political parties and social movements (Mckay, 2007; Aitchison, 2007). The provision of formal technical training was in the former

White technical colleges and some schools of industries for Coloureds and mission schools for Black students (Aitchison, 2007).

The adult NFE in South Africa took a new conceptualisation during the post-apartheid era. McKay (2007, p.286) points out that "after the first democratic elections in South Africa, the new government faced a number of challenges, not the least being the high number of adults who were functionally illiterate". The poverty reduction process was challenged by the fact that there were many unemployed people whose levels of literacy were such that they were virtually unemployable due to the competition for the small number of available jobs requiring a certain level of education (grade 12 certificate) and skills training. There was a need to add the word 'training' in order to conceptualise adult education programmes relevant to socio-economic needs of unskilled and unemployed adults (Mckay, 2007). It is important to mention that the letter 'T' of training in NFE was added to refer to a wide range of skills and expertise including technical skills such as plumbing, dressmaking, beadwork, and other crafts (McKay, 2007).

Previous studies attempted to explore the dynamics of the relationship between adult NFE programmes and employment. Other researchers investigated the learning conditions for non-formal education (Kyndt, *et al*., 2009); job-related non-formal education and training (Kaufmann, 2015); the relevance of NFET for income generation (Islam, Mia and Sorcar, 2012; Blaak, Openjuru and Zeelen, 2012); and socio-economic empowerment of poor adults (Morton and Montgomery, 2011; Akpama, Esang, Asor and Osang, 2011). Similarly, Georgiadou, *et al*. (2009) and Islam, *et al*. (2012) report practical skills acquisition by graduates but without mentioning the conducive factors. However, little is known about the effectiveness of the external factors in fostering links for skills utilisation in self-employment of graduates. Research shows that NFE graduates continue to experience challenges due to the insufficiency of enabling environments, both internal and external (Islam, et al., 2012; Blaak, *et al*., 2012; Georgiadou, *et al*., 2009). As a result, adults who face long-term unemployment due to a lack of work-related skills, remain unemployed after graduating from NFE centres.

The NFE centres under investigation are run by not-for-profit organisations and provide work-related skills training programmes for unemployed adults. These NFE centres are not the same as the recently referred to Public Adult Learning Centres in the National Policy on Community Colleges (Republic of South Africa (RSA), 2015). They are private skills training programmes in

non-profit training centres managed by non-profit organisations; in the public Adult Education and Training (AET) centres, are also non-accredited skills training courses funded by private sectors or organisations. These are vocationally related skills programmes for income-generation activities in the form of non-formal vocational training and rural and community development in South Africa. The programmes intend to respond to the learning needs of adults who did not have access to formal education, to increase their employment opportunities, and to improve social inclusion (Aitchison, 2007).

While previous studies addressed the issue of effectiveness of NFE programmes in skills acquisition by graduates, the importance of post-training support for self-employment in micro-enterprises of graduates has not been sufficiently studied. In the context of this article, the linkages of NFE centres involve a collaboration with public institutions and agencies, private sectors, NGOs, self-help associations, community leaders, local businesses, business development services, financial institutions and private enterprises. These linkages aim at fostering skills utilisation in self-employment; or assisting graduates to establish micro-enterprises and co-operatives.

The purpose of the article is to investigate major challenges trainees of non-formal adult education for self-employment encounter in starting and growing small businesses, and the types of post-training support they receive from public and private institutions in KwaZulu-Natal (KZN) province. The following questions are addressed:

- What are the main sources of start-up capital for trainees' small businesses?

- What are the main causes of trainees' small business failure?

- What types of post-training support for small business development trainees received?

In this article, self-employment is a situation in which an individual works for himself instead of working for an employer that pays a salary or a wage (Meager, Martin and Carta, 2011; Fields, 2013). Self-employed trainees are here defined as persons operating individual enterprises, plus persons operating or working in household enterprises. Enabling environments to refer to internal and external factors of the NFE centre which create conducive conditions for skills acquisition and skills utilisation in wage- or

self-employment (King and Palmer, 2006; World Bank, 2004). The article begins with the conceptual framework guiding the study. Next, the focus is on the study's context and methodology. The presentation of the findings is followed by discussions of the findings. Finally, conclusions and recommendations are presented.

Conceptual framework of the study

Adult NFE programmes for self-employment in micro-enterprise need external factors to the NFE centre which create conducive conditions for helping trainees start their own micro-enterprise in a sustained and effective manner. The existence of supportive factors will influence the skills acquired through adult NFE centres to contribute to the self-employment and poverty reduction of a given target group. This is because a conducive factor allows skills to be utilised effectively (Palmer, 2007; Palmer, Wedgwood, and Hayman, 2007). Among the critical factors external to the adult NFE centres that foster the utilisation of business skills in self-employment are the linkages they have with public and private institutions including agencies, and the social networks which provide or enhance post-training support programmes (Dunkley, 2008; White and Kenyon, 2005).

Likewise, Adams (2007) argues that skills training programmes alone are unlikely to address the problems of unemployment or meeting all the needs of underprivileged adults. Without enabling factors, skills training for adults may lead to higher educational achievement that has to be valued for its own benefits and not to immediate self-employment.

There are debates today around linking adult training to self-employment and poverty reduction in poor communities. Palmer (2007), in his article "*Skills for work?: From skills development to decent livelihoods in Ghana's rural informal economy*", argues that "It is acknowledged that skills training alone is not sufficient for developmental outcomes to materialise". Palmer's view infers that skills acquired from NFE centres are only a part of the package in the process of self-employment and poverty reduction. Likewise, King (2012) points out that skills acquisition is very different from skills utilisation in the labour market, and especially for the poorest who can only access basic education of very low quality. King's argument also suggests that NFE requires an enabling environment for the skills to be utilised in the labour

market. Similarly, King (2012), Pantea (2016) and Preece (2010) note that adult NFE alone, as a strategy of poverty reduction, is not enough. It does not create employment, nor does it guarantee better living conditions or income-generating activities in micro-enterprises or co-operatives of trainees. There is no automatic connection between business skills training for adults and self-employment.

The linkages with public and private institutions

The linkages of the NFE centre to public and private sectors are crucial and the key to success in skills utilisation in self-employment. An adult NFE centre does not operate in a vacuum, but in a given community with social and political entities. Therefore, a quality NFE programme is aware of the resources and needs of the community in which it is located (World Bank, 2005). It establishes and maintains links with various referral sources and community agencies as well as other relevant educational programmes and organisations. It regularly reviews its community, sectoral and organisational relationships (Freedman, 2008). According to Freedman (2008), the collaboration should be between the NFE centre and the agencies at local and national levels and keen involvement of social partners.

However, linkages may still not be sufficient for trainees to become self-employed if there are structural problems in the economy that perpetuate unemployment. Allais (2014) notes that the problem is not lack of skills, but insufficient demand. If the problem is bound up with the nature of economic development, the solution accordingly lies in changing the pattern and character of the growth path. Similarly, Vally and Motala (2014) argue that unemployment in South Africa is caused by skills shortage or gap and limited economic growth. The figure 1 is a conceptual framework presenting the key concepts and then how they are linked together.
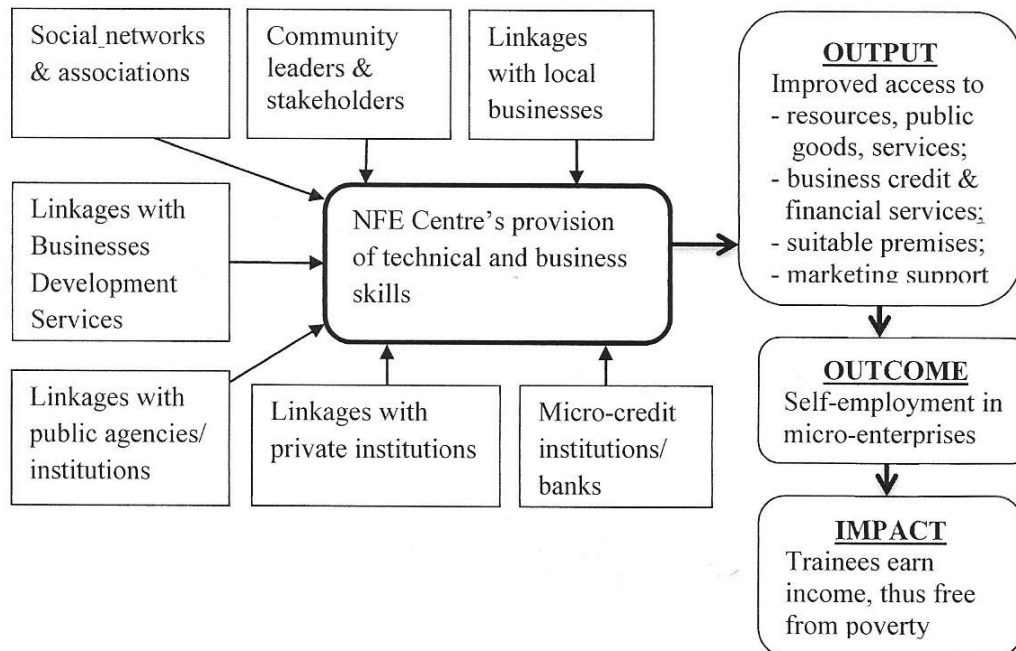
Figure 1: Conceptual framework of the study

Post-training support for self-employment in micro-enterprises

New entrants into micro-enterprise need support from both the NFE centre and other stakeholders in the public and private sectors. Successful entry into self-employment and establishment of a micro-enterprise requires much more than delivering skills training to adults. According to Dunkley (2008), White and Kenyon (2005), Hasanov, Biybosunova and Hasanova (2009), the post-training support for trainees who are interested in self-employment in micro-enterprise entails the service to start a small business; accessing credit, suitable premises for production purposes, equipment and tools, marketing support, support for the formation of groups or forming enterprises/co-operatives, follow-up advisory services or technical assistance; support to access business development services and financial assistance. The support will help overcome the disabling factors outside of the NFE system at macro-level (Stevenson & St-Onge, 2011). The present study was an attempt to ascertain if there were these post-training support services as result of centre institutional linkages.

Study context

The study was conducted in communities where many people have difficulty in generating enough incomes in order to become self-sufficient and enjoy a reasonable quality of life. The study focused on assessing the effectiveness of the centre linkages with public and private institutions in fostering post-training support in self-employment of trainees in KwaZulu-Natal (KZN). The provision of educational and training opportunities for adults is rooted in social empowerment and transformation strategies. Central to the provision is ensuring that all unemployed adult citizens of KZN are either wage-employed or self-employed (KZN, 2013; KZN-DoE, 2011).

The sample of the NFE centres was drawn from the education districts of Umlazi, Pinetown, ILembe and uMgungundlovu (Msunduzi) in KZN province. The NFE programmes target out-of-school and socio-economically vulnerable adults (such as street youths and domestic workers) from marginalised communities. In order to empower vulnerable and marginalised adults, both KZN government and NGO-based NFE centres provide vocational and livelihood training, and entrepreneurial skills to poor adults to enable them to take up self-employment or wage employment in urban and rural areas (KZN-DoE, 2012; KZN, 2012). All these endeavours aim at:

–   Creating sustainable learning opportunities that nurture adult empowerment;

–   Providing adults and out-of-school youths from marginalised communities with marketable livelihood/vocational skills in order to enhance their employment (formal and/or informal) opportunities, or venture into business enterprises;

–   Empowering poor adults to establish viable income generating projects (Aitchison, 2007; KZN-DoE, 2012).

Research methodology

Mixed research methods were used for the study which consisted of a combination of both qualitative and quantitative methods. In support of Weyer's (2009) view, measuring only quantitative results of an assessment of

the effectiveness of entrepreneurial training for self-employment can fail to provide a full picture of the programme. Therefore, this study used survey questionnaires as the primary source of quantitative data. The reason for using the survey was based on its primary purpose which is to determine cause-and-effect relationships or comparability (Creswell, 2013). The method used for qualitative data collection was semi-structured interviews. In support of Creswell's (2009) view, the qualitative method was beneficial to the study because it helped to present the data from the perspective of the trainees, trainers and managers on the effectiveness of the centre linkages with public and private institutions in fostering post-training support in self-employment. Semi-structured interviews provided an understanding of the mechanisms which link particular variables, by looking at the explanation and account (Creswell, 2009).

The researcher also used documents related to the training programmes of the centres under investigation. For the focus of this article, the documents included the monitoring and evaluation documents and annual reports. From a descriptive content analysis point of view, the researcher identified information linked to variables such as training design and implantation, and post-training support for self-employment. Then the data were compared with responses from questionnaires and interview schedules.

Sampling technique and sample size

The study sample was drawn from the 326 adult training centres in KZN province. Following the explanation of Nieuwenhuis (2012) on sampling methods, out of 326 centres, the researcher used a purposive sampling of a non-probability sampling method to select 21 centres. A centre was selected if it provides technical and entrepreneurial skills to enable an adult to take up wage or self-employment in the field of agriculture, industry, services and small business activities. From the selected 21 centres, the sample size consisted of 420 trainees. The sample from each of 21 centres depended on the number of trainees who enrolled on skills training programmes. The sampling method for trainees (420) in the quantitative study was purposive. A trainee was selected if he/she had completed the technical and/or entrepreneurial programme and became wage or self-employed.

The sample consisted of adult trainees from both urban and rural settings from the public and private training centres.[1]

The manager of each of the selected centres also completed the survey. Therefore, the sample consisted of a population of 21 managers. For the purpose of the one-on-one interview, five out of 21 managers were selected for one-on-one interviews. They were selected if their centres make provision for at least one of the following additional criteria:

–   Post-training follow-up and support programmes for self- employment;

–   Linkages with public institutions and agencies or private sectors;

–   Linkages with social networks, associations and employers;

–   Having mentorship and psychological support programmes for self-employed trainees.

In addition to the centre manager and trainees, 31 trainers also completed the survey. The trainer (instructor) sample for the quantitative element of the study was drawn from the total number of trainers in the selected 21 training centres. The researcher used the purposive sampling method to select 31 trainers; two or three trainers per centre. The selection of trainers was based on the following criteria:

–   He/she must have a minimum of 2 years of experience in training technical and/or entrepreneurial skills at the specific training centre;

–   He/she must be the most senior at the centre so to provide the needed information for the study.

For the qualitative interviews, the researcher selected six self-employed trainees out of 420 for one-on-one interviews. To ensure representation from urban and rural areas, with an equal number of males and females and an equal number from private and public training centres, the selection of self-employed trainees was based on the following criteria:

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[1]   In this paper, 'private centre' means a non-profit training centre managed by non-profit organisations (NPOs), community-based organisations (CBOs) and church or other faith-based organisations (FBOs).

–   Currently self-employed whether in informal business area or services area;

–   Reputable for excellence in their small businesses;

–   Selected according to the type of technical and/or entrepreneurial course obtained on one side and type of micro-enterprise activity on the other;

–   One trainee from each four districts, gender, areas (urban and rural) and the nature of the centre.

Based on the selection criteria, only one male and five females were interviewed.

Data gathering and analysis

The data collection involved survey questionnaires and semi-structured interviews. Using the approach mentioned in Delport and Roestenburg (2011), Nieuwenhuis (2012) and Maree and Pietersen, (2012), for the quantitative data, three types of self-completed questionnaires were administered respectively to trainees, trainers and centre managers. The questionnaires included a mix of both qualitative (open-ended) and quantitative (closed-ended) questions. The closed-ended questions used in the study were binary with 'yes or no' responses and multiple-choice questions which allowed the respondents to tick all answers that apply.

The interviews with the centre managers aimed at getting information on training delivery, post-training support for micro-enterprise development and the types of the factors that enable/disable the trainees entering the self-employment in KZN province. Other semi-structured interviews were conducted with six successfully self-employed trainees. The interviews mainly concentrated on trainees' sources of start-up capital and the post-training assistance (financial and non-financial) received from the centre and government agencies**.**

The quantitative data was analysed using Statistical Packages for Social Sciences (SPSS) software. Using the method of data mentioned in Creswell (2009), Nieuwenhuis (2012), Fouché and Bartley (2011), semi-structured

interviews were used for data collection in the qualitative study, and data was analysed through thematic analysis. Data was coded, then sorted and classified to find common themes and sub-themes to be matched and compared with the findings on the sections and sub-sections of the quantitative findings.

Findings

The quantitative findings are presented first, followed by the qualitative findings on the related themes which emerged from the interviews. The quantitative and qualitative findings are then jointly interpreted in order to shed more light on the views and concerns of managers, trainers and trainees in an integrated manner. The presentation starts with a socio-economic profile of the trainees.

Socio-economic characteristics of the trainees

The majority of the sample were females (83.6%, 351/420) as compared to males (16.4%, 69/420). The finding indicates that adult training programmes constitute a second chance for women, who are more vulnerable and unskilled (KwaZulu-Natal Province, 2013) to complete their basic education and gain skills in order to overcome unemployment. Half of the respondents (50.5%, 212/420) had been unemployed for more than five years. The analysis of the type of work before joining NFET centre reveals that almost half (48.8%, 205/420) of trainees were unemployed during the time of application for skills training at adult centres. Only 8.1% (34/420) had full-time jobs in the formal sector. Very few had part-time jobs (16.7%, 70/420).

The analysis of the highest level of formal schooling[2] reveals that only 20.7% (87/420) of trainees in the sample had completed the final year of schooling (Grade 12). More than a quarter (27.4%, 115/420) of respondents had completed Grade 11 and 20.47% (86/420) left school in grade 10. Less than

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[2]   In the South African formal education system, primary school encompasses Foundation Phase (Grades R–3) and Intermediate Phase (Grades 4–6). The secondary school involves Senior Phase (Grades 7–9) and Further Education and Training (FET) Phase (Grades 10–12).

quarter (11.9%, 50/420) left school in grade 10, and 9.8% (41/420) of trainees completed Grade 8. The lowest school achievers were those who only completed primary school (5%, 21/420) and 4.8% (20) completed some primary school.

Types of small businesses of trainees

Exploring post-training activities of the graduates in the labour market was a paramount focus of the empirical study. This is because trainees entered the training programmes with very high expectations of finding a job or opening an own small business. Some trainees studied small medium and micro-enterprise (SMME) as a course on its own as part of business skills training. Yet others, in the case of most of the private centres offering technical skills training in tailoring, handicraft, agricultural technology, poultry and co-operatives, the provision of business skills training was taught alongside technical skills or at the end of the training programmes. The findings on post-training activities reveal that of those trainees who were unemployed (49.04%, 206/420) before registering to the NFE programmes, 41.25% (85/206) became wage- or self-employed immediately after graduating from their respective adult centres.

In the survey, self-employed graduates were asked to mention the types of small business that they were mostly involved in. Since the researcher could not reach all self-employed trainees, it was important to ask the managers and trainers about the types of small business their graduates were likely to start and manage successfully. The responses are presented in Table 1. The findings on the side of managers and trainers are from the records of the monitoring and evaluation documents of each centre.

Table 1: The distribution of trainees' current types of small businesses

Types of small businesses	Responses from Trainees (n = 147)		Responses from Managers & Trainers (n = 48)		Total (n = 195)	
	n	**%**	**n**	**%**	**n**	**%**
Small businesses area	63	42.86	15	31.25	78	40
Small services area	46	31.29	22	45.83	68	34.87
Agricultural projects	38	25.85	11	22.92	49	24.13
Total	**147**	**100**	**48**	**100**	**195**	**100**

Graduates were involved in three main types of small businesses after being trained in their respective centres. The analysis of Table 1 reveals that 42.85% (63/147) of trainees became entrepreneurs in small business areas such as tuck shops, food and co-operatives. The other types of small businesses were small services areas. Trainee respondents (31.29%, 31/147) became entrepreneurs in the small services area mostly in tailoring micro-enterprises. This finding on the small services area was also confirmed by the managers and trainers (45.83%, 22/48). Very few graduates became involved in agricultural projects such as vegetable gardens and cooperative farming. With regard to whether or not trainees' small enterprises were related to the skills training programmes that they enrolled for at NFET centres, a great majority (91.83%, 135/147) said 'yes' and only 8.16% (12/147) said 'no'.

Sources of start-up capital

The availability or provision of start-up capital is an element of enabling environments for self-employment. Findings revealed that more than half of the respondents (50.5%, 212/420) had been unemployed for more than five years, thus they were chronically poor. Furthermore, almost half (48.8%, 205/420) were not working during the time of application for skills training at adult centres. These findings are an indication that trainees needed external funds and equipment to start small businesses. In the survey questionnaires, self-employed graduates were asked to mention more than one source of start-up capital for their small businesses. A similar question was asked to the centre managers and trainers, but they had to refer to their records of the monitoring and evaluation, and annual reports. Table 2 presents the main sources of the start-up capital for small business.

Table 2: Sources of start-up capital for small business[3]

Source of start-up capital	Responses from Trainees		Responses from Managers & Trainers		Total	
	n	**%**	**n**	**%**	**n**	**%**
Own money (savings)	105	61.76	24	36.36	129	54.66
Stokvel[4]	17	10	20	30.3	37	15.67
Spouse (husband or wife)	6	3.52	8	12.12	14	5.93
Gifts from parents/relatives	34	20	8	12.12	42	17.8
Organisation	2	1.18	2	3.03	4	1.7
Loans from bank or a friend	6	3.52	4	6.06	10	4.24
Total	**170**	**100**	**66**	**100**	**236**	**100**

According to the total respondents (trainees, managers and trainers), as reflected in Table 2, the major source of start-up capital was trainee's own money raised by savings (54.66%, 129/236). The majority of the trainees (61.79%, 105/170) reported having started a small business with own money raised by savings. Only 3.25% (6/170) of trainees mentioned having received loans from a bank or friends. Very few of them obtained start-up capital from relatives (20%, 34/170) or stokvel involvement (10%, 17/170). The difference of responses between trainees (61.76%) and managers and trainers (36.36%) on savings as a source of start-up capital indicates that centres have no effective tracking system to the graduates in order to provide post-training support in starting and growing small businesses.

Interviews with self-employed trainees and managers confirmed the quantitative findings on difficulties to find start-up capital. They reported that the lack of start-up capital was one of the major causes hindering trainees from starting micro-enterprises or progressing in small businesses after graduation. In this regard, a self-employed graduate reported the following:

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[3]   Frequency in the above Table 2 was a multiple question and refers to the number of times each source of start-up capital was mentioned. Although few trainees, managers and trainers mentioned only one of the six sources of start-up capital, there were many who mentioned in the questionnaire more than one source of start-up capital.

[4]   **Stokvels** are invitation clubs of twelve or more people serving as a rotating savings scheme in South Afica where members contribute fixed sums of money to a central fund on a weekly or monthly basis. Each month a different member receives the money in the fund, which was collected during that period. The members can use the collected fund for payment or investment purposes.

*Our training centre always organises workshops as a post-training
assistance. We meet twice a year to attend a seminar on technology and
marketing support. But as an entrepreneur, the type of support I need to
improve my small business is business money. The most needed support
is money to buy good quality machines and to purchase fabrics. By my
own savings, I cannot, it is very hard to buy machines.*

Another self-employed graduate said:

*Business skills are not a problem because we were taught intensively
how to manage a small business and finance. We also attended SEDA
[Small Enterprise Development Agency] business plan workshop which
took us about a month. During the training, they used to give homework
like at school. The only type of support I need is finance. The money I
saved helped me buy the business equipment, materials and to pay five-
month rent of the room.*

A centre manager also reported the same financial challenge facing the
trainees by saying:

*A lack of start-up capital for our trainees is the real problem in self-
employment. I thought the government was bringing in Khula [a Micro-
Finance Institution] system which was meant to help the poorest of the
poor. First of all, they charge a little percentage of interest. Since Khula
was closed, it is now hard to get a soft loan. As a result, it is so hard to
start a business. The main problem is that there is nowhere for the
poorest of the poor to get start-up capital at reasonable interest rate.
Our trainees are keen to open small businesses. Educators are trained
to teach entrepreneurship skills because they attend workshops
organised by an institution like Rotary Club and others. The problem
resides on how to enable our trainees to start small businesses while
there is no start-up capital.*

As a solution to the lack of start-up capital, all five managers interviewed
reported that the majority of those who succeeded to start a small business
with their own savings were working in the centres' workshops. Certain
centres were using training equipment and materials to help trainees earn an
income. This is the way trainees managed to save money during the training
period and start a micro-enterprise. Self-employed trainees were still facing
the financial challenge to sustain their small businesses because of using their

own savings. The lack of start-up capital from any other sources was one of the leading causes of small business stagnation or failure as the findings reveal in Chart 1 below.

The main causes of trainees' small business failure

Some graduates reported that they had started small businesses that failed due to various factors. Chart 1 below presents the causes of trainees' business failure according to both types of centres. The responses are from trainees, managers and trainers grouped according to public and private centres in order to ascertain whether the causes of business failure depended on the type of the centres.
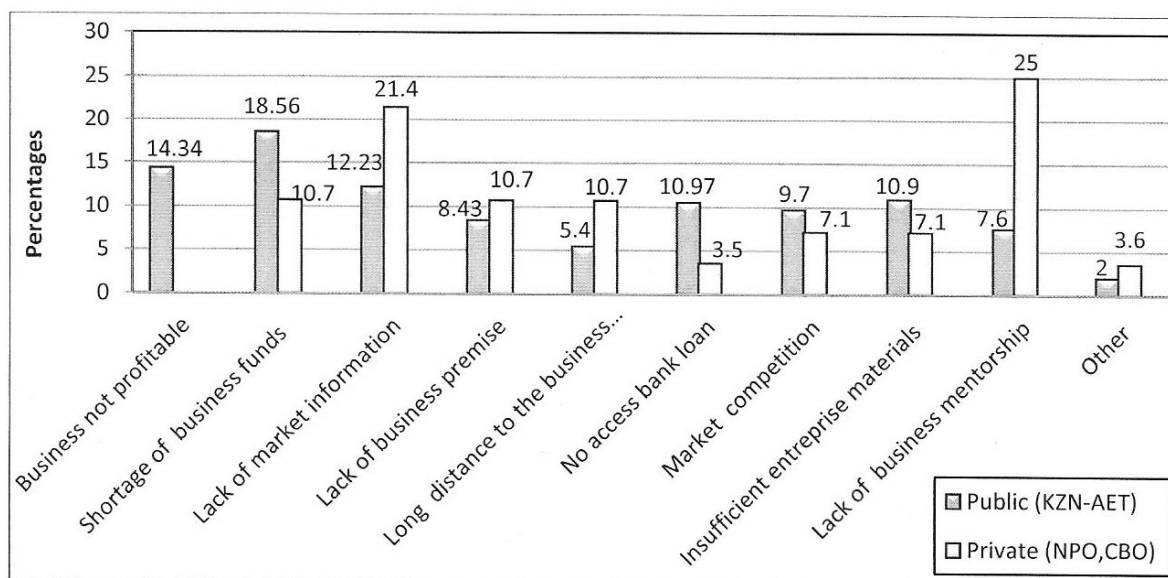
Chart 1: Causes of business failure by type of the centre

Firstly, in the public centres, the highest cause of business decline was the shortage of business funds (18.56%, 44/237). The next main cause was the fact that business was not profitable and little (14.34%, 34/237), followed by the lack of access to business market information (12.23%, 29/237), no access to credit services from banks which in turn impacted on insufficiency of materials for the small enterprise (10.97%, 26/237) and lack of business premises (8.43%, 20/237). Secondly, in the private centres, there were two main causes mostly mentioned, namely the lack of business mentorship (25%, 7/28) and poor access to business market information (21.42%, 6/28). The

shortage of business funds (10.7%, 3/28) and lack of business premises (10.7%, 3/28) were equally important in the third instance.

The findings in Chart 1 above reflect that there is a link between the causes of trainees' business failure and the type of centre where they trained. The link concerns the extent to which the type of the centre works in partnership with local institutions and agencies, financial institutions and NGOs that provide or enhance the post-training support for trainees who are interested in self-employment in micro-enterprise. The support entails the service to start a small business, suitable premises for production purposes, equipment and tools, support for the formation of groups or forming enterprises, technical assistance; support to access business development services and financial assistance. As Chart 2 below reveals that private NFE centres have more linkages than public centres.

In connection with the main causes of small business failure, trainees were asked to suggest possible solutions allowing them to start and develop a sustainable business. Table 3 reports the main themes which emerged from the graduates' responses in an open question in the questionnaire and which they regarded as important for start-up and sustaining small businesses. The number reflects the frequency of times a theme occurred as opposed to the number of graduates (106 out of 420) who responded to the open question.

Table 3: Themes for small business sustainability

No.	Themes as suggested by trainees to sustain their businesses	n = 106	%
1.	Provision of start-up capital for small businesses after graduation	72	67.92
2.	Provision of financial and material assistance in business	63	59.43
3.	Partnering with banks to ofer financial assistance	40	37.73
4.	Training in small business loan application from the banks	57	53.77
5.	Provision of marketing assistance to attract many customers	35	33.02
6.	Provision of business guidance/mentorship	83	78.3

The analysis of Table 3 reveals that the provisions of business guidance/mentorship (78.3%), start-up capital for small businesses after graduation (67.92%) and financial and material assistance in business (59.43) were paramount for poor graduates to start and develop a small business. It is noteworthy to mention that the training centres could not provide these types of post-training support for micro-enterprise development. Trainees would

benefit from post-training support from the linkages of the centres with public institutions/agencies, NGOs, business development services, financial institutions/banks and private enterprises. Chart 2 displays the extent of the centre linkages with public and private institutions according to the responses from managers and trainers.

Chart 2: The extent of the centre linkages with public and private institutions

The analysis of quantitative data in the Chart 2 reveals that 60% of the managers and trainers agreed that their centres had linkages with community leaders. The general findings also reveal that less than half of respondents reported that their centres had linkages with NGOs and self-help associations, local businesses and private enterprises, public institutions and agencies, business development services (BDS), financial institutions/banks, and employers within their local communities. It is evident from Chart 2 that the training centres had weak linkages with other external stakeholders who could foster skills utilisation in self-employment, or assist graduates in establishing micro-enterprises or co-operatives.

In the interview data one centre manager reported on the lack of provision of business guidance/mentorship as the cause of business failure as follows:

> *Small entrepreneurs are not remaining in the business after starting it because there is a lack of mentorship. In business, sales depend on the marketing of the business. Both sales and marketing depend on the customers. The reason why South Africa has such a poor record of SMME development is because there is very little mentorship of a start-up business. We believe that every new business must have a mentorship programme for at least two or three years. A mentor is able to make a follow-up of the trainee's business and monitor the progress.*

Both quantitative and qualitative data confirm that the shortage of business funds and lack of business mentorship or assistance were the two major causes of business failure. The study also examined the types of post-training support for micro-enterprise development graduates received from their centres and other external role-players.

Post-training support for micro-enterprise development

Some trainees could not start an own small business and others found it difficult to sustain theirs because of a lack of internal and external post-training support. In one-on-one interviews, four out five managers reported that there were no mechanisms utilised to assist a graduate with establishing a micro-enterprise or co-operative. Stressing the necessity of the post-training assistance for small business, a private centre manager argued that his centre works in accordance with the principle that entrepreneurship training is a process. This particular centre had mechanisms in place to assist a trainee graduate with establishing a micro-enterprise or co-operative. The manager said the following:

> *In business, a trainee never graduates. We start a training programme which produces an entrepreneur who can work independently. The training is a process which starts from lower stage to higher stage in business. At the end of the training programme, the centre trained how to articulate a business plan and present it to possible funders. Every trainee was given an opportunity to orally present his/her business plan in a workshop attended by different delegates from micro-finance institutions such as ABSA Bank, Ithala Bank, and Capitec Bank, NGOs and local businesses. After the training, the centre used stakeholders to facilitate the transition from training to small business implementation.*

However, six successfully self-employed graduates were asked to indicate the types of assistance received from any institution, agency or municipality to develop their micro-enterprise or co-operative. One female graduate in a peri-urban area angrily said:

> *I have come to realise that there are a lot of things to know in order to start a business. But in the classroom, our educators [trainers] were just telling us, "start a business, start business"; and then what? We train them and then leave them!"*

Another self-employed trainee with a tailoring micro-enterprise reported:

> *I have not received any assistance from any private or public institution beside the one from our NGO [training centre] which gave me a new sewing machine and start-up capital. I don't receive mentorship in the business. So, I just use the skills and knowledge acquired from the*

> *training programme to sustain my business. However, in case I have a technical problem with the machines or how to sew a certain style of fashion, I just walk to my trainers for more advice. The other problem is that I do not know where to get supplementary assistance outside my training centre, whether from institutions, agencies or local municipality.*

The qualitative findings from these two selected quotes suggest that a major problem to access external post-training support was the unawareness about agency or municipality programmes for micro-entrepreneurs. The problem of unawareness about external post-training support is evident in the document analysis. There are in KZN agency and municipality programmes in small business or co-operative incubation available. Qualitative findings confirmed that trainees benefit from support and advice of agencies or the municipality with regard to their small businesses. This is evident in the views of three self-employed trainees. A first successful trainee in the tailoring micro-enterprise reported the following:

> *I have not yet received any material or financial supports from my training centre. But I usually receive help from other agencies and my local municipality to develop my small business. For instance, the municipality has a workshop furnished with industrial sewing machines. The purpose of the workshop is to help poor residents involved in sewing and fashion self-employment to use the machines for their customers' clothes. We use the municipal machines for free and get some advice on our small business.*

A second successful trainee working in a group of five graduates who formed a poultry and agricultural co-operative echoed the support from the 'inside out', referring to assistance from the municipality and SEDA:

> *The training centre helped us to form a co-operative. After that, we have not yet received any support in terms of money from any institution or agency. We use the same money received from member contributions and our customers to buy chicken food, medicines and equipment. The Municipality has offered us a premise for the agricultural project, and we have now started planting vegetables. The municipality has again promised us to give more support[s] for the success of the project.*

A third successful trainee in small business who received continual post-training support from SEDA said:

> *Financially I only dealt with SEDA [Small Enterprises Development Agency]. Since I have attended several pieces of training in small business development, they continue informing me about other relevant business workshops on business and financial management, business plan and marketing. They have been a great help to me in marketing strategies such as producing business cards, flyers and advertisements. SEDA has also helped me with renting a place.*

In summary, the findings reflect that centres' inadequate post-training support is seen by self-employed trainees as not linking them with available business incubation programmes provided by local agencies and municipalities. Most self-employed trainees expected post-training support to derive from the centre and thought only in terms of money for business, forgetting technical, financial management and legal aspects of the business.

Discussions of findings

In this discussion section, the key findings are presented under themes in relation to enabling and disabling environments in fostering links for skills utilisation in self-employment of trainees. Next, a brief discussion and integration of literature follow. The research findings are analysed in line with the conceptual framework of the study.

The training delivery approach enables graduates to save money as a major source of start-up capital following by group members' contributions. The approach consists of 'learning by earning' training delivery. These findings are in contrast with King and Palmer's (2007) study on STEP trainees who could not utilise the acquired skills in micro-enterprise due to the unsuccessful loan applications. In connection with the present study's findings, Langer (2013) and Preece (2010) point out that in a community where social welfare systems fail, people need to learn how to take the initiative to organise self-help. In a similar vein, Blaak, et al. (2012) argue that the NFE centres should empower individual trainees to realise their own ability to produce goods and services in the informal sector.

A lack of reliable sources of start-up capital was one of the major disabling factors for self-employment in micro-enterprise. The problem is that trainees are not told about options for accessing funds for small businesses. The first cause of the problem is the weak linkages with micro-financial institutions and agencies, and the second is that NFE centre managers and trainers who knew about these institutions and agencies in KZN were poorly informed about the application processes of start-up capital in terms of a soft loan. However, it is vital to mention that at the centre level, there is a disjunction between training delivery components and the pursuit of self-employment in micro-enterprises. There are no formal mechanisms in place designed to assist NFE trainees with establishing a micro-enterprise or co-operative. These findings correlate with those from NFE programmes for Roma women in Greek Thrace reported by Georgiadou, et al. (2009). There were still large numbers of NFE activities that were designed without taking into consideration the post-training support for self-employment of the graduates.

Weak institutional centre linkages with public and private sectors constitute disable factors hindering the utilisation of skills into self-employment. In relation to this finding, Langer (2013) and Pantea (2016) argue that non-formal training programmes are most successful when centre managers carefully assess training needs together with other stakeholders within the community. Most of the managers did not visit the private sector operators in order to find out whether they might be interested in providing post-training support to graduates willing to start micro-enterprises.

Furthermore, the weak institutional linkages of the NFE centres may be one of the causes of low application for post-training support available on government SME schemes. Due to weak centre linkages, most of the managers and trainers lacked information and knowledge about possible post-training support provided by local agencies and municipalities. The findings of this study confirm Mahembe's (2011) argument that most SMEs are not aware of the financial products on the market (or other support available) in the community. In KZN this information on these support initiatives is publicised in the local municipalities and business development services (BDS) such as SEDA.

Conclusions and recommendations

It is evident from the findings that at the centre level, the disabling factor is that there are no mechanisms designed to assist graduates interested in self-employment. While the structure of the South African economy is at fault, weak institutional centre linkages result in trainees not having access to essential post-training support, community resources, public goods and services. The study demonstrates that technical and business skills training alone, as a strategy of adult education and training for self-employment are not enough. Due to the existence of structural problems in the economy that perpetuate unemployment, the type of adult training does not create self-employment in micro-enterprises.

The author concludes that centre managers do not take into consideration the importance of institutional linkages and the socio-economic background of the trainees who have faced long-term unemployment and poverty leading to social isolation, which then further reduce the likelihood of employment. Without linking the NFE programmes to stakeholders who provide post-training support to graduates, adult trainees will continue finding it difficult to be integrated into the labour market which perpetuates unemployment and chronic poverty.

Based on the findings and conclusions, the paper provides four major recommendations. Firstly, centre managers should consult public, private agencies and local leaders from the planning stage of the training programmes. Secondly, centre managers should put great effort into post-training support and have an employment co-ordinator who will maintain contact with partners and trainees. Thirdly, centre managers should link self-employment programmes to credit schemes of banks and financial institutions so that graduates can access business funds in terms of soft loans at reasonable interest. Fourthly, centre managers should find out, and inform their graduates about all forms of support available including government SME schemes.

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Book Review - In defence of knowledge

Young, M. and Muller, J. Curriculum and the specialization of knowledge. Routledge (2016). ISBN: 978-1317600411

Wayne Hugo

Michael Young and Joe Muller's *Curriculum and the specialization of knowledge* collects eight years of their co-operative theorising into one volume. The book systematises and rewrites the papers into a satisfying whole that grapples with the current state of curriculum studies and the sociology of education. It contains critique and new moves forward in equal measure. At the heart of the book lies a defence of knowledge as worthwhile in its own terms, and not just any old knowledge, but knowledge that specialises, differentiates, innovates, improves the world, liberates minds, increases life opportunities and equality, produces good citizens, and advances democracy. Knowledge provides a win-win scenario – it is both intrinsically wonderful and it results in all sorts of economic, social, political, cultural, and individual goods. The problem is that this magnificent force is hamstrung on two sides – those who wish to stultify knowledge by making it about learning the traditions in an out-of-date way; and those who wish to relativise knowledge into a warm soup where everyone has a valid standpoint that is gratefully slurped by all and sundry. Young and Muller chart a middle line between traditional knowledge and relativism, holding to specialisation and differentiation as their two guiding lights into a present and future world that valorises knowledge.

Young and Muller are, in essence, updating the radical enlightenment project for a new generation (Israel, 2001, 2006, 2011). Around three hundred years ago, a massive struggle between traditional religion and the forces of reason played out. We celebrate key philosophers engaged in articulating how reason rather than faith should be at the core of how we live our lives. Read through Young and Muller and you will find references to Cassirer, the great historian of the enlightenment and updater of its legacy for the early twentieth century. Brandom's early twenty first century book *Articulating Reasons* (2001) also finds its place – but you will have to be attentive, because Young and Muller are not philosophers – they are sociologists of education. So rather than Spinoza, Cassirer, and Brandom, you will find extended discussions of Durkheim and Bernstein. Rather than intricate discussions about how

specialisation and differentiation work as concepts you will find how specialisation and differentiation play out in education, work, and society. Young and Muller chart how knowledge and reason have changed and evolved in the twentieth and the twenty-first century – and their key insight for education is that the change has to do with specialisation and differentiation.

To understand and elaborate on specialisation, Young and Muller turn to Durkheim, Vygotsky, and Bernstein. Durkheim showed us how to socialise reason without losing its power. Durkheim's great master was Kant (one of the original philosophers of the Enlightenment). Like Kant, he deeply respected reason, but unlike Kant he did not want to leave reason either in the mind or in some kind of transcendent space – Durkheim embedded reason in social reality. Durkheim opened out for the modern age the social realist grounding of specialised knowledge with the key insight that it revolved around the division of labour. As traditional societies became more and more complex, they shifted away from a mechanical type of solidarity where everyone held similar beliefs and learnt similar practices. It became increasingly difficult to deal with evolving complexity in societal development through traditional practices of induction into adult life. Education had to start specialising the consciousness and bodies of the young to make sure that they could do different specialisations at higher and higher levels of difficulty. As humanity evolved so education had to keep track, and it did so through specialisation and differentiation. Not only did education have to ensure that higher levels of complexity were reached to cope with the massive spurt in economic, scientific, social, and technical development; but also it had to do so in a differentiated way, because there was not enough time to specialise everyone in everything. Different learning pathways to different occupations had to be developed that continuously adjusted to increasing skill and knowledge levels. Jobs became professions, work became specialised, longer and longer periods of study and induction were needed to induct the young into increasingly differentiated and complex careers that demand expertise and professional judgement.

For sociologists of education dedicated to the social justice cause of improving the lot of the disadvantaged, the key issue becomes how education can address inequality. One clear route is to fight for the disadvantaged gaining increased access to, and improved throughput in, specialised and differentiated knowledge. To sidestep or oversimplify this hard ascent through genericising and/or relativising knowledge is to do a disservice to the

disadvantaged and to reduce the powers education has. Generic forms of knowledge have their uses and advantages, but to substitute generic for specialised is like trying to deal with the world's assorted illnesses with aspirin. It might ease the pain but will not get to the specifics of the issue. Relativised knowledge can be useful as both entry point and contextual relevance, but to substitute relativism for differentiation is like trying to deal with the world's increasing complexity by holding hands and listening to everyone's standpoint. It's a start but the real work lies in tackling a complex problem using multiple skill sets of different people working together – differentiation and specialisation in unity. Much of *Curriculum and the specialization of knowledge* involves Young and Muller fighting hard for these powerful types of knowledge against relativism, genericism, and traditionalism.

Evolving complexity not only demands specialisation and differentiation, but also innovation. New levels are pushed for and reached, often not by increasing complexity but by finding new and innovative solutions that open new pathways – new pathways that then also specialise and differentiate. Young and Muller stand for knowledge that specialises, differentiates, and innovates against forces that push towards genericism, relativism, and traditionalism. It's a clarion call to academics, parents, teachers, and curriculum developers to stand up for the following manifesto (Young and Muller, p.150):

1.   Knowledge is worthwhile in itself. Tell children this: never apologise that they need to learn things.

2.   Schools transmit shared and powerful knowledge on behalf of society. We teach what they need to make sense of and improve the world.

3.   Shared and powerful knowledge is verified through learned communities. We need to keep in touch with universities, research and subject associations.

4.   Children need powerful knowledge to understand and interpret the world. Without it they remain dependent on those who have it.

5.   Powerful knowledge is cognitively superior to that needed for everyday life. It transcends and liberates children from their daily experience.

6.   Shared and powerful knowledge enables children to grow into useful citizens. As adults they can understand, cooperate and shape the world together.

7.   Shared knowledge is a foundation for a just and sustainable democracy. Citizens educated together share an understanding of the common good.

8.   It is fair and just that all children should have access to this knowledge. Powerful knowledge opens doors: it must be available to all children.

9.   Accepted adult authority is required for shared knowledge transmission. The teacher's authority to transmit knowledge is given and valued by society.

10.   Pedagogy links adult authority, powerful knowledge and its transmission.

A call as powerful and clear as this serves as a rallying cry, but it also inspires passionate resistance. Zipin, Fataar, and Brennan (2015) have critically responded with a call for a deeper understanding and immersion into ethical, contextual and cultural forces that nourish and embed knowledge within the soil of relevance and locality. Although this critical debate is useful for setting up academic lines of engagement, it is often about emphasis rather than contradiction. Young and Muller recognise the value, import and richness of the everyday and the local; only they strongly see how powerful knowledge emerges from this soil and grows upwards on limbs the learners can climb. Muller specifically engages with the complex intersection of the moral and the epistemological in Chapter 11 (*The promise and pathos of specialized knowledge*). On the other side, Fataar, Brennan, and Zipin see the importance of powerful knowledge but want to ensure the soil it grows from is the richest and most fertile soil ever, to the point where they can't see the tree for the soil, nor can they see the light from the top branches because they are immersed in dark pedologies [sic] of the soul. My complaints are different.

When I used the term 'manifesto' I was partly alluding to Marx's *Communist Manifesto* – a powerful, intelligent and intellectually sophisticated call to arms. But behind the *Communist Manifesto* lies *Capital*, the sustained theorisation of the commodity form of Capitalism. Where, in the book, lies a sustained theorisation of specialisation, differentiation and innovation of

knowledge? This complaint is partly unfair, as the book combines articles written over an eight-year period. It is also unfair because sociologists of education tend to take a look at the social construction and impact of forces, rather than the force in its own right, even more so when applied to education. But writing at the same time as Durkheim was Spencer – the great theoriser of specialisation and differentiation within society, education, and knowledge (see Spencer's highly readable three volume set *The Principles of Sociology* written between 1882 and 1898). Writing at the same time as Bernstein was Luhmann – the great systems theoriser of evolving complexity and differentiation within social processes (see Luhmann, 1977 for an introduction). Both Spencer and Luhmann engage with the intricate specifics of how evolving complexity results in the specialisation and differentiation of society and knowledge and the role education plays in this. I missed this intricate level of theorisation – what Karl Maton would call Semantic Density. Collaboration between authors often brings out their mutual strengths, but sometimes can obscure individual abilities in the process. Excellent overviews and maps of a terrain are outstanding strengths of both writers, but some of the detailed engagements and theorisation characteristic of Muller's earlier book are less evident.

My second complaint is not with the call to powerful knowledge but the range of forces increasingly sapping its energies (Hugo, 2016). Here I am not thinking of genericism, relativism, or traditionalism, rather a world of increasing inequality, global warming, and technical innovations that are stripping humanity's claim to expertise and professional judgement. The more unequal the world gets, the less power education holds to address inequality – the knowledge of the powerful trumps powerful knowledge. Global warming is and will result in massive disruptions that will make the long and difficult road to powerful knowledge even harder for the poor and disadvantaged. Artificial intelligence and robotics will increasingly strip humanity of the privilege of working, throwing millions into a strange new world we barely understand. It is this difficult, dangerous world that the clarion call to powerful knowledge needs to be placed within, and it is this world that I only found glimmers of in the book.

But when I stand back from the book, what stays with me longest is simply how enthralling it is. The writing is continuously lucid – never shrinking from the difficulty of the debate but always putting it in the simplest way to catch the complexity. The range of theorisation and theorists used is impressive, and never used to just show off. Each theorist is carefully chosen to illuminate

specific problematics and there is not a single case I found where the theorist was not apt. This is exceptionally hard, as anyone involved in doctoral supervision knows. How many of us can find the right theorist to deal with a specific problem research throws up? How many of us can use theory diagnostically? How many times do we grope through the data, often turning to theorists who we know, but who do not deal with the issue, or to a new theorist who we think can help, but turns out to be a waste of precious time? How many of us read new theorists and enjoy their ideas, but cannot fully see how they apply to education? Not Muller and Young. These are expert theorists, diagnostic theorists, able to decide at the edge who and what to use to see further. It is one of the most valuable and difficult skill sets for intellectuals – it is why such intellectuals deserve respect, admiration and applause when they perform such a service for us with levity and lucidity. We call such a skill Wisdom – and it is in ample supply in this book.

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What is SAERA?

The South African Education Research Association (SAERA) was established at a launch conference at Bela Bela in the Limpopo Province at the end of January 2013. SAERA's launch represents a historic attempt to bring together education academics and researchers from all over South Africa into a unified educational research organisation. SAERA's main aim is to professionalise, cohere and improve educational research and academic work in South Africa. SAERA's establishment follows three years of extensive consultation between a broad range of educational academic organisations with the intent of bringing together academics from different organisations, with their roots in the racialised academic traditions of the pre-democracy period.

The establishment of SAERA provides an opportunity for an umbrella body to bring together different research traditions in the country.

SAERA has the following aims:

- To promote research and academic collaboration, link research policy, theory and practice, encourage the promotion of research quality, and help develop the next generation of researchers.

- To establish a cohesive, coherent and inclusive education academic and research identity. The aim is to establish vigorous and responsive epistemic communities and provide us with a vehicle to continue vigorous intellectual and research collaboration.

- To promote interaction with national and provincial education departments, research organisations such as policy units and the National Research Foundation.

- To establish links with international educational research organisations and similar organisations in Southern Africa and the African content.

SAERA is open to all scholars of education. Its activities will include an annual conference, establishing special interest groups (SIGS) in education which focus on capacity development, and providing publishing opportunities through the *Journal of Education*.

For more information and to become a member, go to www.saera.co.za

Journal of Education

The *Journal of Education* is an interdisciplinary, peer-reviewed, open access publication of original research and writing on education. The focus of the Journal is on all levels, stages and processes of education (e.g. formal, informal, non-formal, early childhood, lifelong, schooling, adult education, vocational education and training, higher education). The Journal aims to publish articles which show high levels of theoretical insight and/or analytic empirical work, and gives preference to articles that demonstrate engagement on the key issues that face South African education. Issues internal to education rather than external forces impacting on education are given preference.

While it is intended that the journal will remain academic in nature, the readers are considered to be educational generalists and articles which are of interest to such readers will receive preference. Potential contributors are asked to ensure that submissions conform to the guidelines outlined at the back of the journal.

The journal is freely available in Adobe Acrobat format on the World Wide Web at http://joe.ukzn.ac.za.

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Journal of Education will publish two normal issues and at least one Special issue per year. Normal issues will be published in June and December each year. The SAERA Conference Special Edition will be published in October.

Submissions

Unsolicited papers are welcome for consideration and should be addressed to the Editor of the *Journal of Education*. Submitting authors should note that a fee of R3 500.00 per article will be levied on published submissions for SAERA members, and R4 000.00 per article for non-SAERA members. Institutional Research Offices of higher education institutions usually pay this type of fee. Authors whose affiliated organisation may not have instituted this practice are asked to contact the Editor, as the levy is a means of sustaining the journal, and is not intended as a deterrent to aspiring authors!

Guide for Authors (updated July 2016)

Articles and essay reviews (maximum 7 000 words); debate, discussion and research notes (2 500 words); book reviews (2 000 words); and book notes (200 words) will be considered.

The Editorial Committee will make a first decision regarding all articles that are submitted. Articles that are selected for review will be sent to two or three peer reviewers for blind review. Appropriate papers will be refereed for significance and soundness. Papers are accepted on the understanding that they have not been published or accepted for publication elsewhere.

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- adequate, fair and accurate presentation of the relevant literature in the area of focus
- the validity and power of evidence marshalled to support the author's argument
- the extent to which interpretations and conclusions are warranted by the nature and scope of fieldwork
- the contribution to our collective understanding of the particular issue/s
- the originality and the power of the argument
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Contributors should submit an electronic version of the article by e-mail to the Editor at JoE@ukzn.ac.za. Maximum length is 7 000 words. This should not be formatted, and preferably not use a variety of fonts and font sizes or use paragraph styles. Where necessary, however, authors may wish to indicate levels of subheadings (i.e. first level, second level). Each paper should be accompanied by a 100–150 word abstract. Footnotes should be kept to a minimum, and authors are asked to keep tables and diagrams to the most feasible level of size and simplicity. Tables and diagrams should also be sent in separate files. The name(s) and full address(es) of the author/s should appear on a separate sheet.

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Citations in the text should appear as follows:

> No country in the world can afford the schooling its people want (Reimer, 1971).

Direct quotations are indicated by "quotation marks".

> Beauchamp and Thomas (2009, p. 175) argue that "the concept of identity is a complex one".

Long quotations **of more than 40 words** should start on a new line and be indented with no quote marks. All direct quotations need a page number as well as author and date.

Citations of two authors

Smith and Jones (2012) or (Smith & Jones, 2012)

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Author, A. A. (Year of publication, date of publication). Title of article. *Name of Newspaper or magazine*, pp. x-x.

Theses and dissertations

Author, A. A. (Year of publication). *Title of work: Capital letter also for subtitle*. Unpublished PhD/MEd thesis/dissertation, Name of University, City.

Policy documents

Department/ Ministry name. (Year of publication). *Title of work: Capital letter also for subtitle*. Place: Publisher.

For e.g. Department of Higher Education and Training (DoHET). (2010). *Draft policy on minimum requirements for teacher education qualifications selected from the HEQF*. Pretoria: Government Press.

Working papers

Author, A. A. (2012). *Title of work* (Working Paper No. 123). Location: Publisher.

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Website

When citing an entire website, it is sufficient just to give the address of the site in the text. The BBC (http://www.bbc.co.uk).

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Author, A. (2011). Title of document [Format description]. Retrieved from http://URL

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Frequently asked questions

Is the Journal of Education SAPSE accredited?
Yes

How many issues per year?
In terms of a recent policy decision, we aim to produce at least two 'normal' editions of the journal each year in addition to at least one special issue (which will be the SAERA Conference Special Edition).

Most journals now have a per article fee which contributors are required to meet should their articles be accepted. Does the Journal of Education levy such charges?
Yes. This step was necessary to cover the costs of the increased number of issues each year. A publication levy of R3 500 per article will be charged for SAERA members, and R4 000 for non-members. The central research offices in most institutions of higher education routinely arrange for such payments to be made. We encourage individual authors who do not have such cover to contact us.

Are articles peer reviewed?
Yes. Our goal is for articles to be refereed by three experts in the field.

What is the waiting period after submission?
Referees provide their crucially important service for no reward, and are sometimes unable to oblige on time but we endeavour to respond within three months.

Can I send my submission by e-mail?
Yes. The electronic version of the article should be sent as an email attachment.

To what extent should an article being submitted be presented in 'the style' of the journal?
Citation and referencing should be in the style of the journal (see the previous section 'Notes for Contributors'). Authors are not expected to reproduce the particular fonts and font sizes used in the journal, but the levels of headings and subheadings should be clear. With regard to the electronic version of the article, we prefer as little formatting as possible.

Does the journal have a policy to encourage and support budding novice researchers?
Unfortunately not – this is simply beyond our capacity. While we welcome extended comment that referees may be able to offer, we cannot impose on their good services beyond the expectation of an overall judgement on the article, together with brief justification of that judgement.

What is the rate of acceptance/rejection?
The following statistics for 2013 and 2014 provide an indication of the pattern of acceptance/non acceptance:

Year	Accepted with no or minor revisions	Accepted after revisions	Not accepted
2015	1	13	54
2016	2	9	53

Even an increase in the number of issues each year will not keep pace with the ever-increasing number of submissions. We can do little to mitigate the competition engendered by state funding policy and the kinds of incentive schemes that have become a feature of the higher education landscape.

Is there an appeal mechanism should my article not be accepted?
Beyond summarizing reasons for rejection – where applicable – we regret that we are unable to enter into detailed discussion on decisions reached by the Editorial Committee on the basis of referee reports.

The journal describes itself as providing "a forum for scholarly understanding of the field of education". What does this really mean?
We understand this as implying that articles should represent a rigorous enquiry (conducted through argumentation or empirically) into the understanding of educational issues. Such inquiry originates in a problem rather than a solution, and it is rare for such enquiry to have no reference to, or engagement with, a broader literature and theory. Advocacy in the form of prescriptions or 'how to do it' recipe knowledge for practitioners seldom finds favour with referees. The question of audience is key. The assumed audience is the collective body of researchers rather than those more narrowly concerned with the effective implementation of specific policies.

Recent non-acceptances include a high proportion of undeveloped research reports, summaries of dissertations, and even sound but small-scale case studies that are purely context specific and unconnected with broader issues, literature or theory. Similarly, even a successful conference paper is usually in need of further development before it merits publication.