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Editors: Ian Moll, Yvonne Reed and Carola Steinberg

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School of Education and Development &
School of Adult and Higher Education
University of KwaZulu-Natal
Private Bag X01
Scottsville
3209

E-mail: JoE@ukzn.ac.za

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Editorial

Ian Moll, Yvonne Reed and Carole Steinberg

Each of the articles in this special issue addresses either directly or indirectly the 'What is to be done?' question which framed the 2008 Kenton Conference. The conference focused on identifying and addressing the challenge of creating and sustaining an education system based on a culture of human rights, democracy and social justice.

The decision to publish a total of eight articles leaves little space for editorialising so we restrict ourselves to explaining the order of presentation and to offering a brief summarising comment on each one.

The first two articles address key aspects of teaching and learning in the Foundation Phase of schooling: the teaching of number (Ensor *et al.*) and the production of literate subjects (Dixon). Ensor *et al.* were struck by 'the uniformity of practice' among nine teachers in three schools between 2004 and 2006 – practice which did not present learners with enough mathematics at a sufficiently complex level to enable them to move on to the more complicated arithmetic operations required in the Intermediate Phase. They argue that the teachers were hampered by the inadequate guidance offered by the National Curriculum Statement and by the emphasis in the NCS on group work and the use of apparatus which teachers have interpreted as ends in themselves rather than as strategies for the achievement of pedagogic ends Dixon uses Foucault's dual definition of discipline – a body of knowledge and a means of social control – to examine how literacy is configured in relation to how children are disciplined in five classrooms from Grade 00 to Grade 3. Her analysis of the workings of space and time show that there is a narrowing of spaces and tighter control of time with each year that learners spend in the classroom so that by the time learners reach Grade 3 they are immobilised in their desks and subjected to a phonics influenced reading and writing programme 'with little space to develop as readers and writers where pleasure, play and creativity were fostered, or for that matter reading and writing texts with a real purpose'.

In the third article the focus shifts to the final year of primary schooling as Muthivhi and Broom describe and discuss findings fro their research into the conceptual thinking of Grade 7 learners. Illustrating how the learners failed to

complete tasks that required formal operational thinking, they argue that the external, socio-cultural processes of rural classrooms need to be structured in ways that enable the internal, individual engagement with abstract theoretical ideas and problem-solving. Next, Meyer and Kühne and their colleagues in the Rural Education Project focus on 'the complex interplay of factors that can boost or impede school improvement' in relation to literacy and numeracy teaching and learning in two rural primary schools. From their detailed case studies of two contrasting schools they conclude that key factors in promoting and sustaining improvement include teacher motivation and teacher subject knowledge. Each of these is likely to be enhanced where teachers work co-operatively within the school and have a commitment to both the school and the community in which it is located, and where there is mediated input from external support agencies.

The fifth article takes us into the last year of schooling Bolton asks the question 'What, if any, are the specific pedagogic features associated with achievement in a Grade 12 art class by learners in general, and disadvantaged learners in particular?' her research project explored the pedagogy of teachers in six schools, two at each of the socio-economic levels defined as upper middle class, lower middle class and working class. Her findings suggest that there **is** a set of identifiable pedagogic features associated with successful art making and that some of these features can be operationalised in different ways in different social class settings with equally favourable results.

The last three articles are concerned with teacher learning. Wood reflects on an investigation into the responses of a purposively selected sample of teachers in township schools to the challenge of 'Teaching in the age of AIDS' She describes the picture that emerged from this investigation as 'depressing' and argues that HIV and AIDS education for teachers needs to be radically transformed, as does support for their ongoing work in this complex and challenging area. Dornbrack analyses what she learned from an intervention designed to encourage teachers at a suburban school to become more critically reflective of practices in their school and to become 'change agents'. She argues that teachers need knowledge (including that of 'outsiders'), safe spaces and time to identify what needs to be changed in their schools and to act on the insights arising from their critical reflections. Reed has used a range of international and local teacher education literature to conceptualise a two part framework for analysing the selection and organisation of content in teacher education materials/programmes and for identifying the orientations to teacher knowledge in such materials/

programmes. She suggests that this framework could be useful to both designers and evaluators of teacher education materials and programmes, particularly in terms of understanding how design choices offer particular subject positions for pre-service and in-service teachers – positions that could affect their investment in their studies and their teacher.

While we have chosen to sequence the articles in terms of their focus on phases of schooling and then teacher education, we draw the attention of readers to two themes that are threaded through most of them: (I) the orientation to knowledge(s) of teachers in various sites; (ii) teachers' productive or unproductive use of time and space. We suggest that identifying the kinds of knowledge that are privileged in sites of learning and the likely consequences of this privileging for learning and learners, together with understanding how time and space are used in these sites may be helpful for advancing the social justice in education project.

Ian Moll
Yvonne Reed
Carole Steinberg

ian.moll@wits.ac.za
yvonne.reed@wits.ac.za
carola.steinberg@wits.ac.za

Specialising pedagogic text and time in Foundation Phase numeracy classrooms

Paula Ensor,[1] Ursula Hoadley, Heather Jacklin, Cally Kühne, Esme Schmitt, Ana Lombard, Marja van den Heuvel-Panhuizen

Abstract

In this paper we focus on an aspect of the crisis we face in mathematics teaching and learning in South Africa at the present time, namely the teaching of number in the Foundation Phase. We analyse classroom observation data collected in 18 classrooms across Grades 1 to 3 in three different schools serving very poor communities and use the notion of semantic density to highlight the degree of specialisation of content and mode of representation across lesson time. The central findings of the paper are that while we can discern a trajectory of development from counting to more abstract ways of working with number across Grade 1 to Grade 3, students remain highly dependent on concrete strategies for solving problems at Grade 3 level. Learners' opportunities to grasp the symbolic system of mathematics are inhibited by classroom practices that privilege concrete modes of representation, which restrict access to more abstract ways of working with number, and by the inefficient use of class time.

Introduction

Describing the 'brute inequity' of primary school achievement in South Africa, Brahm Fleisch (2008) assembles data (produced by government

[1] Paula Ensor is the main author of this paper. She and Marja van den Heuvel-Panhuizen are Principal Investigators of a SANPAD-funded project 'Count One Count All' and all the authors of this paper presently participate in the COCA project. Jaamiah Galant, Shaheeda Jaffer and Corvell Cranfield were involved at earlier stages, and we are grateful to them, to Tami Mhlati and Xolisa Guzula for assisting us with translation of the classroom data presented here, and to Cynthia Fakhudze for assisting us with the administration of learner assessment instruments.

agencies and others) which spells out graphically and unambiguously the debacle we face in literacy and mathematics achievement in primary schools in this country. He shows that at the end of 2001, for example, testing of a large sample of Grade 3 learners revealed very poor performance in elementary mathematics – learners achieved an average score of 30 per cent on the numeracy tasks set. By 2007 this had increased to 35 per cent. Grade 6 achievement figures released by the Department of Education in 2005 (Department of Education, 2005) showed that 81 per cent of learners were not achieving at the levels specified by the National Curriculum Statement. As documentation produced by WCED indicates, Grade 3 mathematics results in 2006 showed that more than 60 per cent of Grade 3 learners were performing below the expected level for literacy and numeracy. It also revealed that between 2002 and 2006, numeracy levels dropped from 36.6 per cent in 2002 to 32 per cent in 2006. (Western Cape Education Department, 2006). Eric Schollar (2008) makes the sobering point that only 1.5 per cent of the 1995 Grade 1 cohort achieved higher grade passes in mathematics in the 2006 matriculation examination. Fleisch (2008) goes on to illustrate the degree of South Africa's underperformance by citing regional and international studies which place South Africa lower in numeracy achievement than eleven other African countries, including Madagascar, Malawi, Zambia and Botswana.

The distribution of success and failure in primary mathematics mirrors the differentiation of schooling according to the social class background of learners, producing a consistent bimodal outcome. A number of studies have attempted to provide explanations of this pattern of achievement. Hoadley's (2007) study for example describes the different kinds of knowledge made available to primary school learners from different social class backgrounds. While working class children in her study were exposed to localised and everyday knowledge, middle class children were given greater exposure to the specialised knowledge required for success in school. Fleisch (2008) cites Reeves (2006) as attributing performance at Grade 6 level to problems with curriculum coverage, coherence, cognitive demand and pacing.

In this paper we focus on one aspect of this crisis in performance, namely the teaching of number in the Foundation Phase. We identify a set of problems which we believe become compounded over the years and which hold learners back from achieving in mathematics higher up in the education system. In setting out our conclusions we do not depart substantially from the findings of Hoadley, Reeves and others, but contextualise the problem very specifically in terms of the teaching of number in the early years of schooling.

The research project from which our data is taken was designed to explore the impact of a professional development programme on teaching numeracy in the Foundation Phase. Classrooms were observed in 2004 and 2006 and we have analysed the shifts in pedagogic practices that have resulted from the professional development programme. However, in this present paper we are not directly concerned with the relationship between professional education and classroom teaching, and the shifts in teachers' practices over time, but rather with key common features of pedagogic practice in the Foundation years taken as a whole. Here we present an analysis of classroom observation data which was one of three data sets, including also interviews with teachers and learner achievement scores in Grades 1, 2 and 3 over three years.

We video-taped nine teachers in two years – 2004 and 2006 – in one lesson in each year, to generate 18 recorded lessons. We recorded only one lesson on each occasion and did not spend sustained periods of time in the schools. On the basis of such restricted access to classrooms we would not normally make strong claims about the extent to which the lessons can be regarded as representative of teaching as usual in the schools. However, we were struck by the uniformity of practice across nine teachers in all three schools, across time, and it is this commonality of practice that forms the basis of our analysis. Although some changes in pedagogic practice were evident between 2004 and 2006, most especially around the use of apparatus, the organisation of lessons remained substantially the same over time.

A number of researchers have been involved in the analysis of the classroom data discussed here. We worked as a team drawing out common categories for analysis which we then refined iteratively over time. A broad range of crucial issues emerged – the relationship between teacher talk and learner talk, the ways in which teachers 'scaffold' learning, the relationship between whole group teaching and individual effort by students, between verbal and written work, between differentiated and undifferentiated tasks for different learners and the whole matter of control by teachers and learners respectively over selection, sequencing and pacing of tasks (Schmitt, 2009; Jacklin and Hardman, 2008). These aspects are important, and will become the focus of a series of future papers. The present paper concentrates on a particular aspect of teaching mathematics – the shift from concrete to symbolic reasoning. We are interested in how children learn to operate with ever more abstract and sophisticated representations of number, and how teachers assist them in doing this. We have distilled the concerns of our study in the following terms: how do teachers, through the construction of tasks, specialise pedagogic text and

time in the teaching of number? In other words, how do they move from the concrete, local experience to engaging with more abstract forms of knowledge?

The central findings of the paper are that while we can discern a trajectory of development across Grade 1 to Grade 3 from counting to more abstract ways of working with number, students remain highly dependent on concrete strategies for solving problems at Grade 3 level. Recent classroom-based research in mathematics shows the dominance of concrete methods such as tally counting in solving problems in mathematics in the early grades (Kühne, 2004; Hoadley, 2007; Schollar, 2008). The inefficiency of such methods, and the failure of many students to abstract from concrete representations, has been offered as a significant contributor to poor mathematics achievement of students in South African schools. We argue that learners' opportunities to grasp the symbolic system of mathematics is limited by classroom practices that privilege concrete modes of representation, which inhibit access to more abstract ways of working with number, and by inefficient use of class time.

Counting, calculating and arithmetic

We expect that by the time they leave primary school, children will have a confident grasp of counting, number and arithmetic, which will provide a solid platform for them to engage with algebra and other aspects of the school mathematics curriculum when they reach secondary school. Evidence suggests that the majority of children do not achieve this competency at the end of primary school, and a deficit emerges in the early years that becomes augmented when students reach high school. There are three interlinked aspects to mastering Foundation Phase numeracy: progression in acquiring the number concept, the shift from concrete to abstract reasoning, and relatedly, the move from counting to calculating.

Mastery of counting

A progression is developed below which suggests the pathway that children need to tread in order to gain mastery of arithmetic. It is not presented as a

strict hierarchy (either here or in the literature[2] from which it draws) although there is a strong trajectory underpinning it.

Gelman and Gallistel (1986) suggest that children can be deemed to have mastered counting[3] when the following principles are in place:

- *The 1-1 principle*. This entails children being able to mark off items in a collection with distinct markers or tags so that one and only one marker is used for each item. The child has to learn to co-ordinate two processes – partitioning (differentiating within the collection between items which have been counted, and those which have yet to be counted, which may be achieved physically or mentally) and tagging or marking (drawing on distinct markers or tags, one at a time.) The two processes have to work simultaneously, beginning and ending at the same time. Three kinds of errors can arise in this – errors in partitioning, such as tagging an item more than once, errors in the use of tags (such as using one more than once), and failure to co-ordinate the two processes adequately.

- *The stable order principle*. Counting entails more than assigning arbitrary markers to items in a collection. Children also need to recognise that the tags themselves are organised in a repeatable, stable order. Gelman and Gallistel comment that the human mind "has great difficulty in forming long, stably recallable lists of arbitrary names (words)" (1986, p.79). They argue that much of a child's first engagement with learning number is rote learning the first 12 or 13 number words, and the rules that generate subsequent words. Fuson and

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2 It is deeply problematic that we have so little large-scale research in South Africa (apart from large-scale testing) that can inform us about children's capabilities in number in the early years. A significant corpus exists in Britain, Europe and the USA on number acquisition from birth to well into the primary years, and in the absence of locally-based research we have been obliged to draw on this corpus to understand what is going on, and going wrong, in the early years of education in South Africa.

3 Dehaene (1992) suggests that the set of requirements generated by Gelman and Gallistel places strong demands on the identification of counting in children. He sets out two opposing theoretical positions: that of Gelman and Gallistel, who advance what he refers to as the "principles-first theory", arguing that the "principles are innate and guide the acquisition of counting procedures" (p.11); and the "principles-after" theory, advanced by Fuson and others, who suggest that "counting principles are progressively abstracted, in a Piagetian manner, after repeated practice with imitation-derived rote counting procedures" (p.11). See also Nunes and Bryant (1996).

Kwon (1992) point to the particular difficulties learners encounter in learning to count in English (in contrast, for example, to Chinese and Japanese learners) which extends to difficulties with grasping the notion of place value.

- *The cardinal principle*. This entails understanding that a number, such as five, can be achieved by counting the items of a set of five objects, and that it represents the total number of items in a set. This understanding is crucial to all of the child's later number reasoning – that a number such as 5 encapsulates numerosity (counting items 1 through to 5) but also that 5 represents the total number of items, and becomes an object which can be manipulated.
- *The abstraction principle*. This is the understanding that counting procedures can be applied to any collection of items. Steffe, Von Glasersfeld, Richards and Cobb (1983) argue that there are five different types of countable item, progressively difficult for the child to manage: perceptual units (which can be seen), figural items (items not present, but recallable – for example the number of dwellers in a home), motor units (movements like steps or handclaps), verbal units (utterances of number words), and abstract units.
- *The order irrelevance principle*, which entails an understanding that the order in which items in a collection are counted does not affect its numerosity. This entails an understanding that the tag applied to an item is arbitrary and is not a characteristic of the item, and that the same cardinal number applies to a collection irrespective of the order in which the items are counted.

Once these principles have been mastered (and this usually happens over a protracted period), children have developed the ability to work with numbers as representations of numerosity. As Gelman and Gallistel put it: "counting provides the representations of reality upon which the [numerical] reasoning principles operate. That is, counting serves to connect a set of reasoning principles to reality" (1986, p.161).

From process to concept

A significant leap in understanding is entailed as a child moves away from regarding numbers as reflecting numerosities, to objects which can be manipulated according to certain laws. They understand that the counting

numbers do reflect numerosity, but that numbers such as -5, root 2, or pi, do not. As Gray (2008) comments "It [the formation of numerical concepts] involves a shift in attention from the objects of the real world to objects of the arithmetical world – numbers and their symbols" (p.82). "Numerical symbols do not represent either a process or an object: they represent both at the same time" (p.88). He and Tall give this compression the name *procept*.

Gray and Tall (2007) suggest that there are three distinct types of mathematical concept: "one based on the perception of objects, a second based on processes that are symbolised and conceived dually as process or object (procept) and a third based on a list of properties that acts as a concept definition for the construction of axiomatic systems in advanced mathematical thinking" (p.23). They refer to the "*proceptual divide* between those who cling to the comfort of counting procedures that, at best, enable them to solve simple problems by counting and those who develop a more flexible form of arithmetic in which the symbols can be used dually as processes or as concepts to manipulate mentally. *Proceptual thinking* occurs when counting procedures are compressed into number concepts with rich connections – for example, knowing things like '4 and 2 makes 6, so 6 take away 4 must be 2' and using these 'things' to derive new knowledge such as '26 take away 4 must be 22 because 26 is just 20 and 6'" (p.26–29). Authors such as Piaget, Skemp, Fischbein, Bruner, Biggs and Cillis, drive at the distinction between the concrete and the abstract in different ways, argue Gray and Tall, and in ways which align with the 'three worlds of mathematics' they refer to: the conceptual-embodied, the proceptual-symbolic and the axiomatic-formal.

Until learners can make the shift from process to concept, they will not be able to understand that 10 is a concept, and will not be able to comprehend two digit numbers, and place value. The same applies to sharing and producing fractions, which must then be understood as numbers which can be manipulated. "If fractions are seen as procedures, then addition is almost too complicated to contemplate" (Gray and Tall, 2007, p.33).

From counting to calculating

The shift from counting, to calculation which makes use of counting strategies, to calculation which does not rely on counting, takes place across Grades 1 to 3, and beyond. As Gray, Pitta and Tall (2000) comment, as learners move from the perceptual world (the use of counters, fingers and so

forth) to using representations of it (the use of tallies, and later number words) they are engaged in processes which are basically similar in that all are analogous to the process of counting. "The concept of unit becomes wholly abstract when the child no longer needs any material to create countable items nor is it necessary to use any counting process" (p.403).

Gelman and Gallistel underscore this move from counting, to calculating strategies based on this, and finally to calculation which does not rely on counting, by reflecting on the difference between what they term numerical and arithmetic reasoning. Children's early numerical reasoning relies on the numerosities of sets which are produced through the counting process. A number, in terms of this reasoning, derives from the process of counting. Arithmetic reasoning, in contrast, grasps that "the laws of arithmetic govern an abstraction called number" which has no reference to numerosity. It is the laws of arithmetic that determine what is and is not a number, and not the reverse (p.181).

This emerging understanding of number, and of arithmetic, requires that teachers assist learners to deepen notions of counting, develop flexible and powerful means of representing number using apparatus such as beads, numbers lines, empty number lines and so on, so that learners gain confidence in using counting as a means of calculating. Counting strategies lay the basis for learning addition and subtraction, initially using strategies like 'counting all', then 'counting on' or 'back' (Carpenter, Moser and Romberg, 1982; Fuson, 1992). With experience, and the acquisition of a growing repertoire of number facts, learners develop the competence to compute without a reliance on counting strategies.

In summary, in the early years of learning mathematics, students move through a number of stages in the shift from counting, and an understanding of numbers as reflecting numerosities, to calculating, and the conception of numbers as objects which can be manipulated according to certain laws. The question for the analysis that follows is how this shift is best described.

Specialising pedagogic text and time

The analysis of data presented in this paper is premised on the understanding that the shift from concrete to abstract reasoning depends primarily on the sustained specialisation of pedagogic text over time. Texts make up the

semiotic system which teachers mobilise in classrooms when they teach, and refer to any utterance, object or inscription which teachers communicate or otherwise make available to learners in the practice of teaching. Pedagogic texts include verbal communication by teachers, inscriptions on the blackboard, bodily movements recruited for the purposes of teaching, and various forms of apparatus, such as counters, pictures and number charts. Specialising strategies, (following Dowling 1998), work to draw pedagogic texts away from the particular, the concrete and every day, towards more abstract forms of representation. Pedagogy in the numeracy classroom does this in three ways: by rendering the *content* more abstract; by specialising the *modes of expression* used to communicate this subject matter; and by rendering more abstract the *forms of representation of number*. An example of what we mean by specialisation of pedagogic text is provided in one of the Grade 1 classes we observed in which the teacher consolidated learners' understanding of the notion of 6. Learners were provided with counters to count out 6, and were then asked to partition 6 in various ways to show different quantities that could be added or subtracted to produce 6. She also encouraged children to write 6, and modelled for them how to do this. By providing multiple representations of the number 6, the teacher assisted learners to grasp the invariant, 6, and to represent it in symbolic form. She abstracted from various instances to consolidate the notion of '6' (specialisation of content); she used increasingly abstract forms of representation, from counters to numerals (specialisation of representation), and in the language she used in making these moves she buttressed learners' efforts to grasp the notion of 6 (specialisation of mode of expression).

Because of constraints of space we focus in this paper only on specialisation of content and mode of representation, and leave for future papers a discussion of the specialisation of language, or mode of expression.

In the analysis of data, then, we were interested in the extent to which teachers specialised pedagogic text from the counting of concrete objects, to calculating-by-counting (with, and then without the aid of apparatus), and finally to calculation using symbolic, syntactical mathematical language. We expected that utterances, written texts, apparatus of various kinds, and different modes of representation would become specialised as pedagogy moved learners away from concrete experiences to an understanding of abstract mathematics. In analysing the specialisation of text, in relation both to content and modes of representation, we therefore looked for shifts from counting, to calculation-by-counting, and to calculation.

Semantic density

We were interested in the specialisation of text, but also in the relationship between text and time. Teachers make decisions about how much time to spend on a topic, how they order topics within and across time periods, how much time they allocate between whole class teaching, group work and individual work, how much time they spend speaking themselves and how much time they allow learners to speak, how much time they allocated to speaking and writing, and whether the allocated time is filled by all learners working at the same pace, or at different paces. Specialising pedagogic time in the teaching of numeracy entails the purposeful deployment of time in order to deepen learners' awareness of numbers and the number system. A highly specialised task can be spread over a long period of time, whereas a low level task can be allocated a small amount of time. Or, looking at this in a different way, given the same period of time, we can stretch tasks of different levels of abstraction across it.

The specialisation of text and time thus both contribute to *semantic density* (Ensor, 2009) – the distribution of text across time. The notion of semantic density grasps simultaneously the twin concerns of specialisation of text, and its distribution over time. It is for this reason that we talk of the specialisation of text and time together in the discussion that follows. High semantic density is achieved via the distribution of specialised text across concentrated periods of time: levels of semantic density can be reduced by localising pedagogic text and/or expanding pedagogic time.

Coding the data

The nine teachers in our sample were observed for two lessons each, one in 2004 and another in 2006. We began the task of analysing the classroom data by dividing each transcript into a set of pedagogic tasks where a task was defined as a segment of a lesson which was constituted around a single goal or theme. A single task could entail a number of activities which were semantically intertwined. For us, punctuation of a classroom text into tasks was usually signalled by the teacher as she changed focus from one topic to another, or, within the same topic, changed the mode of classroom organisation. So for example the switch from acoustic counting to the exploration of the number line was taken to mark the end of one task and the beginning of another. Similarly, part of a lesson devoted to whole class

teaching of multiplication, followed by individual work by learners on the same topic, was regarded as two tasks, the first based on whole class teaching, the second on individual work.

As we have pointed out above, learning number entails learning to count and gaining mastery of the principles enumerated by Gelman and Gallistel. This provides a platform for learners to learn to calculate using counting strategies, and then to move beyond this to learning to calculate using symbolic representation, with a diminishing role for counting. As we have indicated, the move from the concrete to the abstract in relation to number in the Foundation Phase entails three parallel sets of specialising strategies, in relation to content, to mode of representation and to mode of expression.

Specialisation of content

The specialisation of content in the teaching of number entails a shift from counting, to calculating-by-counting, to calculating without counting. The categories presented below emerged from the analysis of classroom data, as well as from engagement with literature on early number acquisition. They are not presented here as a full or ideal sequence in the learning of number.
By *counting* we refer to the presentation of a range of tasks such as:

- *Acoustic (or oral) counting*, which encourages learners to memorise number sequences and number patterns. Angilheri (2006) argues that counting forwards and backwards, counting in 1s, 2s, 3s, 5s etc. develops an understanding of patterns that assist in early addition and subtraction. Acoustic counting was present in all grades we observed, accounting for approximately 7 per cent of the pedagogic time of each grade. Examples include counting forwards in 1s, 2s, 3s, 5s, 10s, 25s and 50s, and backwards in 1s, 2s, 5s and 50s (seen in only one lesson).

- *Counting out object*s entails mapping a number sequence on to a set of objects, which includes counting animals on a poster, counting members of a family depicted in a picture, counting out a set of objects such as counters, stone, crayon boxes, beads, dots and tallies. We have included in this category a Grade 2 teacher's division of an apple and a loaf of bread in order to introduce the notion of a fraction as a result of sharing.

- *Producing and recognising a written number sequence.* Acoustic counting enables learners to memorise number sequences, which they need to be able to recognise and to reproduce in written form.

- *Locating numbers on a number line or chart and learning number facts*, which includes identifying numbers on a number chart, finding numbers closest to a given number, bigger or smaller than a given number, or between two given numbers. It entails the use of expanding number cards to represent numbers.

Calculating-by-counting tasks use counting for the purposes of calculation. For example, in one of the lessons we observed the teacher provided a drawing of three families of different sizes and asked learners to rank the families in size, quantifying the differences between them. Various counting strategies were used to achieve this.

Calculating without counting tasks entail adding, subtracting, multiplying and dividing and do not rely on counting but rather on memorised number facts (such as number bonds and times tables). This includes the addition of two-digit numbers using expanding cards. Treffers (cited in Menne, 2001) identifies three increasingly complex levels in mental solution strategies: calculation by counting, structured calculation, which entails calculation without counting but the use of suitable models (such as, for example, an empty number line), and formal calculating, which relies on mathematical language and conventions and does not require structured materials or models. Since we observed very little work in calculation without counting we have not refined the subcategories further, along the lines which Treffers suggests. The progression we have outlined above, from counting, to calculation-by-counting, to calculation without counting, entails the increasing specialisation of pedagogic content. We now consider the specialisation of forms of representation.

Specialisation of mode of representation

The move from concrete representations of number, to symbolic representations, again reflects increased specialisation of pedagogic text.

The following forms of representation of number[4] were used in classrooms:

- ***Concrete*** apparatus which entailed the manipulation of physical objects such as fingers, bodies, money (real or plastic), crayons, matches, boxes of groceries, plastic pigs, pegs. We also include here counters, cards or beads (single or string). This apparatus was used for counting and for calculation-by-counting strategies.

- ***Iconic*** *(images of everyday context – realistic depictions)* apparatus included photographs, cartoons, or drawings (for example, worms, washing lines). This apparatus was used in the same way as concrete apparatus but could not be manipulated in the same way.

- ***Indexical*** *(indexes everyday contexts – generic rather than realistic depiction of everyday contexts)* apparatus featured drawings of sticks, tallies, dots, circles and other shapes to represent everyday objects. This apparatus was used for counting and for calculating-by-counting tasks.

- ***Symbolic – number-based*** *(use of numerals to represent numbers)* apparatus including number lines (structured and semi-structured), number charts, number cards. This mode of representation supported calculation without counting but could also be used for calculation-by-counting tasks.

- ***Symbolic – syntactical*** *(use of mathematical notation to produce mathematical statements).* This mode of representation is abstract, and entails the deciphering and production of mathematical statements. It relies on known number facts and facts which can be derived without counting.

- ***No representation used*** – this refers to tasks which learners were asked to carry out which did not entail the use of modes of representation. This included acoustic counting, and mental arithmetic. Representation in this case was internalised.

These representations of number shift from the concrete, here-and-now of counting using fingers and other objects, to the use of tallies and other marks,

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4 This description of different forms of representation draws loosely on Dowling's (1998) analysis of modes of representation in a mathematics textbook scheme.

to the use of mathematical notation to undertake calculations with or without reference to empirical situations. We would expect that as learners progress from Grade 1 to Grade 3, concrete, iconic and indexical apparatus would give way to symbolic forms of representation, in the first instance in the representation of numerosity by numerals, and then the production of mathematical statements in symbolic form.

The COCA project

Nine Foundation Phase teachers teaching in three different semi-rural, poor schools in the Western Cape constituted the sample for the research reported in this paper. All teachers speak isiXhosa as their first language, the home language of the majority of learners in the classes of the teachers was isiXhosa, as was the medium of instruction. Six of the nine teachers had experience in teaching Grade 3; the other three had taught Grade 1 and 2 and in one case, Grade 5. All teachers were female, older than 30 years of age and qualified to teach at the Foundation Phase level. Two of the teachers had Bachelor degrees, and two of the teachers had the lowest level of teacher qualification – a matric plus a three year diploma. The teachers varied in terms of their teaching experience, between 5 years and 25 years. The teachers' classes were on average large, with as many as 57 learners in one class. Only two classes fell within the national teacher : pupil ratio norm of 1:40.
The teachers were video recorded teaching a lesson in 2004 and again in 2006. We requested that we be invited to record lessons on number but it turned out in the end that two of the lessons were on measurement. We have included these in our analysis as both entail some number work. Where tasks did not entail the use of number in some way, we have classified these as 'other' in the analysis that follows.

Analysis of data

Specialisation of content

In total, the lessons of all three grades, across both 2004 and 2006, totalled 879 minutes. We observed seven Grade 1 lessons, five Grade 2 lessons, and six Grade 3 lessons. The transcripts were divided into tasks, and these then further divided into three primary modes of classroom organisation – whole class activity, group work, and individual work. Whole class activity involved

the teacher engaging the attention of all learners, focussed on a common task or set of tasks. Group work entailed the distribution of a task, or tasks, to a group. We will discuss further below the particular issues that arose in the distribution of tasks within groups. Individual work entailed engagement by learners on tasks, working alone.

Table 1: Distribution of time to classroom organisation

	Grade 1	**Grade 2**	**Grade 3**	**Total**
Whole class activity	223 mins 64%	162 mins 69%	193 mins 65%	**578 mins** **66%**
Group work	40 mins 12%	28 mins 12%	58 mins 20%	**126 mins** **14%**
Individual work	85 mins 24%	45 mins 19%	45 mins 15%	**175 mins** **20%**
Total	**348** **100%**	**235 mins** **100%**	**296 mins** **100%**	**879 mins** **100%**

Table 1 shows that across the grades we observed, whole class teaching absorbed approximately two thirds of class time, group work approximately 14 per cent and individual work around 20 per cent. This suggests that the ways in which pedagogic time was utilised during whole class teaching was crucial to learners' success as they were dependent on teachers for effective communication of mathematical ideas.

We then analysed each mode of organisation in turn, looking at counting tasks, calculation-by-counting tasks, and calculation tasks. In practice the two ends of this spectrum – that of counting on the one end and of calculation on the other – were much easier to detect in classroom activity than the shift from counting, to calculation-by-counting, and the shift from calculation-by-counting to calculation without counting. We differentiated tasks on the basis of how teachers set them up and the strategies they encouraged learners to use. So in two Grade 3 lessons, the teachers gave learners word problems involving two digit numbers and provided counters to assist them in doing this. We classified this task as calculating-by-counting. In another Grade 3 lesson, the teacher gave learners two-digit word problems, but indicated that she expected these to be solved through partitioning and adding. We have no record of whether learners in fact used fingers or tallies to support their efforts in this lesson, but we classified this as a calculating task. As we will show, this was uncommon in the lessons we observed.

The table below shows the allocation of pedagogic time across the three categories of task, aggregated across all three grades, and for all modes of classroom organisation.

Table 2: Total allocation of time to categories of task

	Minutes	**% of total pedagogic time**
Counting	306	35%
Calculating-by-counting	471	54%
Calculating	26	3%
Other	76	8%
	879	**100%**

This table shows that 89 per cent of total pedagogic time was spent on counting or counting-by-calculating. Grade-specific data shows that in Grade 1 there was a heavy emphasis on counting, with relatively little time on calculating-by-counting. By Grade 2 there was greater evidence of the latter. By Grade 3 we see a relative increase in the proportion of time spent on calculation-by-counting and calculation, and a decline in the amount of time spent on counting. This is as we would expect the situation to be. However, there was relatively little pressure, in Grade 2 and 3 in particular, towards calculating without reliance on counting. In two Grade 3 classes, for example, learners were asked to solve word problems involving addition and subtraction and were given counters to assist them to do this.

This suggests that while some degree of specialisation of number content occurred across the three grades, the amount of time spent on calculating was very low, and occurred only in Grade 3. Very little attempt was made by teachers to encourage calculation without counting in the lower grades.

Specialisation of modes of representation

In order to obtain a measure of the specialisation of modes of representation across grades we counted the presence of apparatus used in each lesson, per task. This means that if fingers, beads, counters and stones, for example, were all used for a single counting task, we noted a single occurrence of the concrete. Table 3 therefore registers the presence of a particular mode of representation, but not the extent of its use. We have counted apparatus for an

entire lesson, and have not differentiated according to form of classroom organisation. We have also excluded from consideration tasks which have been classified as 'other'. We obtained the following table:

Table 3: Forms of representation and number of tasks for which used

	Counting			**Calculating-by-counting**			**Calculating**			**TOTAL**
	Gr1	Gr2	Gr3	Gr1	Gr2	Gr3	Gr1	Gr2	Gr3	
Concrete	8	4	2	7	10	10	-	-	-	**41**
Iconic	8	-	1	5	3	-	-	-	-	**17**
Indexical	3	-	-	2	-	1	-	-	-	**6**
Symbolic	17	5	7	6	9	3	-	-	3	**50**
Syntactical	-	-	-	9	2	9	-	-	3	**23**
None	1	5	5	1	1	6	-	-	1	**20**
TOTAL	**37**	**14**	**15**	**30**	**25**	**29**	**-**	**-**	7	**157**

This table suggests that concrete apparatus for counting, and for calculating-by-counting, is visible in all three grades, with sustained use through Grades 1, 2 and 3. The relatively low employment of indexical forms of representation surprised us, given the ubiquitous use of tallies for the purposes of calculation that have been reported on by Hoadley (2007) and Schollar (2008), and which was manifest in our own assessment data. Evidence from our studies suggests that across the grades, teachers favoured concrete apparatus over the use of indexical marks to stand for them. While the representation of number as numerals (the symbolic) was common across the grades, the use of written mathematical statements was less frequent, and more visible in Grade 3. So some specialisation in modes of representation occurred across Grades 1 to 3, but not to the degree we would have expected. As the Table shows, and which we will discuss further below, teachers prioritise counting and calculating-by-counting and the use of apparatus to support these activities well into Grade 3, which has a negative impact on the conceptual level of the number work offered to students and the use of time.

Specialisation of text in time

Having considered the specialisation of text, in terms of content and mode of representation, we were then interested in the distribution of text across time.

We chose as a measure for this the density of computations across grades. We went through all of the tasks and aggregated all the computations, whether these entailed counting or not, and irrespective of whether learners were asked to complete these computations in whole group teaching, group or individual work. We took a very broad and generous view of this, counting every computation regardless of whether it was oral or written, whether it entailed simple one-digit addition or a word problem involving two digits. Where different problems were given to different learners, with the expectation that each learner should complete only one, we counted all of the computations set for the class. We found the following:

Table 4: Distribution of computations over time

	No. of computations	Computations/time x 60
Grade 1	20	4 comps per hour
Grade 2	19	5 comps per hour
Grade 3	55	11 comps per hour

This means that at Grade 3 level, learners were exposed to approximately 11 computations per hour, and slightly less than this in lessons lasting the average length of around 50 minutes.

The quantitative data we have presented above suggests that some degree of specialisation of text, both in terms of content and mode of representation, occurred over Grades 1 to 3. However, Table 4 raises concerns about the rate, and the extent, to which this took place. We therefore extended this quantitative analysis with a qualitative dimension, to highlight examples from classroom practice which underscore the concerns we raise.

As we have indicated above, in all three grades, the majority of pedagogic time was spent on whole class teaching, and most was spent on counting or calculation-by-counting. Most of the apparatus we have recorded on Table 3 above was thus used in a whole-class context, as a tool for demonstration by the teacher rather than for manipulation or handling by learners, and as a support for counting. This impacted not only on the degree of specialisation of the text, but also on the way in which time was used. In general the use of apparatus anchors experience in the local and particular and explicit specialising strategies are needed to facilitate the move to abstraction. In our research there was limited evidence of these strategies, a problem which was

compounded by the fact that the use of apparatus also consumed a significant amount of class time in the classrooms we observed. Setting up tasks which involved apparatus took time, both to assemble and to explain, an expenditure of time which was commonly in inverse relation to the mathematical demands of the task. In a Grade 3 class, for example, the teacher took the class outside and set up a task much like skittles, in which one learner per group took turns in throwing a ball at plastic bottles lined up across one side of a court yard. Learners then counted out all the bottles, then the bottles that fell, and were then expected to generate a sum which represented this.[5] This activity took 25 minutes, half of an entire lesson, and in the end generated three subtraction sums (one per group) involving two digits. In another Grade 3 class, which was devoted to measurement and the concept of volume (although the term 'volume' was never used), the entire lesson was spent by the teacher pouring water from one container into various others. Her intention was to illustrate the standard unit of measurement of volume, the litre, and subunits of this. However, she did not use accurate measuring equipment and the outcomes were incorrect on a number of occasions.

The use of apparatus undermined the specialisation of text and the efficient use of time in whole class teaching contexts, as well as in group contexts. Across all three grades we encountered eight instances of what we have classified as group work. This entailed the setting of a task which the group was supposed to solve together. In every case of group work we observed, only one set of apparatus or writing material was supplied for the entire group. This meant that one learner in the group completed the task while other learners looked on. Setting up group work in this way invariably entailed the use of some kind of apparatus, and took a very long time to get underway. In every instance of group work the teacher went from group to group, explaining and re-explaining what needed to be done. Yet all of the tasks set as group work projects were of a low mathematical level. In one Grade 2 group, for example, learners were asked to paste matchsticks in groups of 3 on a poster. One learner pasted the matchsticks while the others observed. This had followed a demonstration by the teacher on the board of grouping in threes, and the learners were required to simply reproduce, and not in any way extend, what they had been taught. Another group in the same lesson was

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[5] This has been classified as a whole class activity here, rather than group work. Although the groups went in turns to throw the ball, the remaining learners watched and waited their turn, with nothing else to do. One sum for each group of learners was the only inscription made during this lesson.

expected to place cards on every third number on a number board; one learner was required to undertake this while the others observed. A third group was required to group pegs in arrangements of 3 on a peg board – again, one learner carried out the task while the others looked on. The mathematical requirements of these three tasks were trivial, and yet none of the groups managed to complete what they were asked to do by the end of the lesson. The teacher went from group to group explaining not the mathematics involved, but what the learners needed to do with the apparatus.

In another, Grade 1 class, learners were expected to paste numbers from 1 to 10 on a poster. One learner accomplished this while the others looked on. In another Grade 2 class a large group of around 10 children were tasked with cutting one orange into 4s, with a very blunt knife. In all these cases a great deal of time was devoted to the activity and boredom inevitably set in, giving rise to discipline problems as learners bickered over the sharing of apparatus.

Of the nine group work tasks set altogether, four were completed in the lesson and involved some kind of plenary feedback. It was not uncommon to find a lesson ending without any work by learners being undertaken at all, whether in a group or individual context.

Table 1 shows that very little class time was spent on individual work. There were ten tasks involving individual work over all the classes we analysed, which varied in mathematical level. In a Grade 2 class we observed learners pasting paper pigs into two circles drawn in their exercise books to represent sties, a task which reproduced almost exactly content that had already been taught on the board. The lowest level of task, in terms of specialisation of mathematical text, involved the colouring in of different size containers (Grade 1). The task of greatest complexity offered, to Grade 3 learners, was adding two-digit numbers by partitioning and adding. While most of the individual tasks were intended to provide opportunities for learners to write, this often did not happen as the lesson came to an end before they could complete their work. Of the ten individual work tasks set, none were completed in the lesson so as to allow for some kind of plenary feedback. The use of apparatus expended a considerable amount of pedagogic time as teachers set up whatever it was that they wished learners to do. But even when apparatus was not used, the setting up of tasks took time. This was compounded by the number of activities which involved group work, which took time to set up. All teachers spent some time reading out the problems set, highlighting component parts and breaking tasks up into subtasks before learners were able to proceed.

The data presented above on the specialisation of text in time shows a very low rate of transmission occurring in the classrooms. The extensive use of apparatus in whole class and group contexts entailed protracted periods devoted to setting up tasks, at the expense of learners engaging in worthwhile mathematical activity. Learners were exposed to a low number of computations per hour. By Grade 3 there remained a heavy reliance on counting as a calculation strategy. The semantic density of the lessons, or the specialisation of text across time, can thus be characterised as low. In addition, the fact that students accomplished very few tasks individually means that the experience of the pedagogy (and its density) was uneven across different learners in the same classroom.

Learner performance

The students in all of the teachers' classes were tested at the end of each of three successive years over the course of the COCA project. The tests were benchmarked against the national curriculum, and covered three identified knowledge areas of number: visual, symbolic, words, and a combination of these. The tests were also designed to address different skills categories: resultative counting, representing numbers and calculations. The data shows very low performance levels of students in all classrooms. There was one Grade 1 teacher (who, interestingly, was the least qualified in terms of formal qualifications and had been teaching for only five years) whose students scored an average of 50 per cent over all three years of assessment, with a mean score in year 3 of 65.3 per cent. In addition, the student of one Grade 3 teacher scored on average 51.7 per cent across all three years. No Grade 2 teacher in any of the three schools we worked in achieved a learner mean score of over 50 per cent.

In administering the test, a qualitative response sheet was used to identify learners and capture learner strategies in solving problems. This observational research found that overwhelmingly, learners showed no strategies for solving problems, but simply wrote down a response. Where strategies were used, we found the use of tally counting predominated across Grades 1, 2 and 3. Grade 3 learners still used tally methods with no evidence of structure-based strategies such as group counting or other more formal approaches.

Conclusion

Our research examined the specialisation of pedagogic text in time in the Foundation grades in three schools which cater for students from very poor backgrounds. We were interested in the ways in which text was specialised, through the move from counting through to calculating without counting; through shifts in the use of apparatus, through different modes of representing numbers and through the steady specialisation of language use in classrooms. We also considered the manner in which text was specialised within time. We found that while shifts from concrete to abstract modes of reasoning were evident in all classrooms we observed, this did not happen at the pace or at the depth that learners require in order to move on to more complicated arithmetic operations in the intermediate years. Teachers simply did not present learners with enough mathematics, at a sufficiently complex level.

The concept of semantic density highlights the low conceptual level of the pedagogic text, as well as the low rate of transmission. In combination, the relatively low level of specialisation of text over time has severe implications for whether and how learners acquire an understanding of number, and this is borne out in the assessment data presented.

In their efforts to specialise text in time we believe that teachers are hampered by the National Curriculum Statement and its associated recommendations. We turned to the Statement for guidance on what content should be covered at what level across the three grades, and were not able to find adequate guidance. On the face of it, the teachers we observed seem to comply with the stated requirements of the NCS, but these do not specify in sufficient detail what should be covered, at what level, across what period of time. The proposal of the Foundations for Learning initiative to provide these milestones will make a significant contribution to solving this problem. We are concerned, however, that the FFLC continues to place emphasis upon group work, and the use of apparatus, without emphasising that these are strategies that teachers may use to achieve pedagogic ends, and do not constitute ends in themselves. In the lessons we observed, the use of apparatus, and of group work, had the effect of localising pedagogic tasks, and dissipating pedagogic text in time, to the detriment of learners' progress. By inscribing the use of group work in the way in which the FFLC does, we run the risk of further embedding the practices which we have described, which hinder the mastery of number.

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Paula Ensor
Ursula Hoadley
Heather Jacklin
Cally Kühne
Esme Schmitt

University of Cape Town
Paula.Ensor@uct.ac.za

Ana Lombard
Cape Peninsula University of Technology

Marja van den Heuvel-Panhizen
University of Utrecht

Producing literate subjects? Using the spatial and temporal as lenses to examine early literacy classrooms

Kerryn Dixon

Abstract

Concerns have been raised about children's levels of literacy in early schooling. Assessments point to a problem but give little insight into practice. This paper locates itself in a Foucaultian paradigm to investigate early literacy practices. It uses Foucault's (1977) dual definition of discipline: a body of knowledge and a means of social control to examine how literacy, (a body of knowledge), is configured in relation to how children are disciplined, (a means of social control) to become literate. Two disciplinary means, the spatial and temporal are applied to five classrooms from Grade 00 to Grade 3 in a Johannesburg preschool and primary school. An analysis of the workings of space and time show the narrowing of spaces and tighter control of time. Read against teachers' limited conceptualisations of literacy these spatial and temporal restrictions raise questions about the literate subjects produced.

Introduction

On the whole, early literacy in this country is an under-researched area, but what happens in these classrooms is crucial because they form the foundation upon which all other literacies are developed and built on. A number of local and international evaluations (DoE, 2003, 2005; SACMEQ II, 2005; PIRLS, 2007), highlight a disturbing trend that many children have not mastered the basic skills needed to work with the numerous texts they will be faced with as they move through schooling and beyond. Their ability to read and write with proficiency, fluency, and more importantly, understanding, is under-developed.

A far greater knowledge is needed of literacy practices in early literacy classrooms that work to produce particular kinds of 'literate subjects' (Luke, 1992). This article takes the position that literacy instruction (in schools and communities) is not just about teaching children to decode and encode texts, rather it works to constitute children in relation to social and cultural beliefs

about what it means to be literate (Maynak, 2004). As children take on these beliefs and practices a particular literate subject is produced. Greater insight is needed in the ways in which literacy practices are affected by teachers' understanding of literacy and how the literacy training[1] children undergo conforms to these understandings. Programmes like the Department of Education's Foundations for Learning Campaign (DoE, 2008) with its step-by-step literacy lesson plans espouse a particular conceptualisation of literacy that may be in tension with many teachers' understanding of literacy, the value and functions it holds for them, and their ability to impart this conceptualisation in the classroom.

Underpinning this article is an interest in exploring the ways in which children are trained to become literate as a part of becoming schooled subjects. It investigates two Johannesburg schools, Acacia Preschool and Southside Primary.[2] To navigate this exploration the article locates itself in a Foucaultian paradigm. Foucault's (1977) notion of discipline frames the discussion of early literacy classrooms. For Foucault discipline is twofold: it is a body of knowledge, in this case literacy. It is also a means of social control, how children are disciplined/trained to become literate subjects. Different understandings of literacy will be translated into different practices, to produce particular kinds of literate subjects. If writing in the early years is predominantly understood to be a display of neatness, then the training children undergo will be different from a teacher who thinks of writing as a creative act. Literacy is obviously not the only discipline children are subjected to, nor is this training limited to the school domain.

A Foucaultian perspective: space and time as disciplinary techniques

If children are 'disciplined' to become literate then this assumes the operation of power relations. At the outset it is important to stress that for Foucault, power is positive and productive. It is not solely negative or repressive, although sometimes it can be. This is useful in thinking about the role of the

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1 I use the word training in a Foucaultian sense i.e ('training in the arts of the self') that includes skills, knowledge and beliefs that are internalised to produce self-regulating subjects and in this case literate subjects.

2 All names mentioned in this article are pseudonyms.

school. Schools are by their nature disciplinary institutions that aim to produce subjected and practised bodies that form part of a productive citizenry. The modern citizen requires skills and knowledge that can be used to contribute to the economy and conform to a set of norms that maintain social order that benefits everyone. In South Africa's case the vision of this ideal (literate) citizen is set out in the National Curriculum Statement. It desires "literate, creative. . .critical citizen[s]" able to lead "self-fulfilled lives in a country free of violence, discrimination and prejudice" (DoE, 2002).

Schools are central institutions for training citizens. This training is a result of pedagogical power which is directed onto children's bodies. As adults we still remember teachers' exhortations to sit straight, hold our pens in a certain way, which affect bodily positions. Disciplinary power functions at the level of the body and in doing so it "reaches into the very grain of individuals, touches their bodies and inserts itself into their actions, attitudes, their discourses, learning processes and everyday lives" (Foucault, 1980, p.39). The internalisation of such processes until they become part of the literate subject's embodied habitus (Bourdieu, 1992) is not a negative, repressive process. As one reviewer of this article rightly points out, literate subjects who can sit still and focus on their reading are desirable. Early skills like learning to hold a pencil, or how to hold and open books, as well as making meaning from print, understanding the conventions of genres and being able to produce and design them are part of the process of constructing and governing a productive, TV-license-paying-income-tax-submitting population.[3]

Foucault (1977) argues that there are four means through which discipline operates: the art of distribution (space), the control of activity (time), organisational genesis and the composition of forces. All four are important and interconnected but due to the constraints around article length I focus on the spatial and the temporal. There are two major reasons for this. The first is that there is a growing recognition in educational circles of the importance of the spatial and the temporal (Leander and Sheehy, 2004). Soja (1996, 2004) argues that Foucault's critique of nineteenth century historicism led to a theoretical rebalancing. Foucault argues that the entrenchment of historical and sociological analysis resulted in the "history-society. . .dialectic enter[ing] the mainstreams of nearly every disciplinary tradition" (Soja 2004, p.xi) and in

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[3] In South Africa this is a greater challenge. The construction of productive and compliant citizens is dependent on disciplinary power functioning. This is not the case in all of our schools and the challenge is to reassert disciplinary power so that sound learning and teaching become normalised.

fact what needs to exist is a trilectic of the spatial-historical-sociological. This article attempts to understand the operation of the spatial in relation to a group of early literacy teachers and learners located in a moment of time in South Africa.

In addition to this May and Thrift (2001), Soja (1996, 2004), and Foucault (1980, 2000) argue that space and time should not be separated. But much of this work is theoretical, or located within other disciplines (e.g. Kenworthy Teather (1999) in critical geography). In his work on disciplinary power Foucault (1977) discusses space and time separately. This article applies the elements operating within spatial distribution and the control of activity as Foucault outlines them to early literacy classrooms. Then it uses movement flows as tentative exploration of the two together.

When outlining the art of distribution as the first technique of disciplinary power, Foucault (2000) states explicitly that the exercise of power in space is fundamental and argues that "discipline proceeds from the distribution of individuals in space" (1977, p.141). This spatial distribution relies on four techniques:

Enclosure,

Partitioning,

The rule of functional sites, and

Rank.

Enclosure of space limits inconveniences and disturbances and allows progress to be monitored. For example the schools in the sample are enclosed by barbed wire fences with surveillance cameras. Partitioning works to regulate movement and is more flexible than enclosure. It allocates individuals their own space, and space to individuals; these partitions may be real or ideal. Classrooms in a school are an example of partitioning and children are allocated to grades, teachers, and places to sit within the classroom. The rule of functional sites allows a space to have multiple uses. The teacher's desk could be a place to work quietly, a place for one-on-one instruction or a place to store books until they are handed out. Ranking is a result of supervision, or surveillance where individuals are distributed and circulated "in a network of relations" (Foucault 1977, p.146). Children are ranked in schools and classrooms according to numerous criteria like age, gender, academic performance, language proficiency, and behaviour. These impact on spatial

distribution: where boys and girls line up, where Foundation Phase classrooms are located, where the academically weak children sit.

The second technique of disciplinary power is the control of activity which is temporal in nature. It comprises five elements:

The timetable,
The temporal elaboration of the act,
The correlation of the body and the gesture,
Body-object articulation, and
Exhaustive use.

The *timetable* functions to "establish rhythms, impose particular occupations, regulate the cycles of repetition" (Foucault 1977, p.149). The timetable is the general framework of activity. For example, in the Grade 00 Acacia class perceptual activities are timetabled after morning ring time. The *temporal elaboration of the act* requires that acts are broken into elements, bodies are positioned, given directions, durations and an order of succession resulting in the *correlation of the body and the gesture*. The temporal elaboration of the act requires that Acacia children sit in their groups at allocated tables and complete a task, e.g cutting out pictures and sticking them onto a page. The children need to know how to position their bodies and what gestures are required to complete this task. This correlation of the body and the gesture requires the mastery of body-object articulation. Basically children learn "the relations the body must have with the object that it manipulates" (Foucault 1977, p.153). To cut out a picture, a series of gestures need to be mastered in order to make the blades of the scissors move up and down to cut a piece of paper. The child would need to put their thumb through the top handle of the scissors and two or three fingers through the bottom handle (depending on the size of the scissors) bending them around the handle to hold the scissors. They would then need to move their thumb and fingers, opening the hand slightly to open the blades. The other hand would need to hold the piece of paper being cut, insert it between the blades, and the fingers in the scissors would contract, closing the blades and cutting the paper. The more complex the cutting, the more small movements would need to be made simultaneously with the hand holding the scissors and the hand holding the paper. The *body-object articulation* is crucial for early literacy, these Grade 00s learn to handle pencils, khoki pens, paintbrushes, magazines, paper, glue, and scissors to create their own texts. The final aspect of the control of activity is *exhaustive use*. Mastery cannot be gained without extensive opportunities for practice.

What this article attempts to do is to think about how children are disciplined to become literate in terms of the 'knowledge' and the means through which this is controlled through their training in time and space across early schooling (Grade 00–Grade 3). It considers teachers conceptualisations of literacy as this is directly connected to how they see literacy as a body of knowledge. It then moves on to discuss how space is used across early literacy classrooms, and how time is organised before it considers movement flows. Before this discussion it is necessary to outline the research sites and methodology used for this research.

Research sites and methodology

Two schools in Johannesburg located in an ex-white working class suburb comprise the research sites that formed part of a larger study investigating the construction of literate subjects in early schooling. The preschool, Acacia, is the feeder school to Southside Primary. The schools draw children from the surrounding suburbs as well as Soweto and Eldorado Park. Many of the children are multilingual although the medium of instruction at both schools is English.

A multiple case study design was utilised with five classrooms constituting the units in which literacy lessons could be studied: a Grade 00 class (4–5 years), a Grade 0 class (5–6 years), two Grade 1 classes (7–8 years) and a Grade 3 (9–10 years) class. Data was collected over an eighteen month period. This was not a longitudinal study in the traditional sense as classes were observed at the beginning or the end of the year to try to understand transitions children make from preschool to primary school. The Grade 00s, and Grade 1s were observed at the beginning of the school year because this is the entry point for 'informal' schooling and 'formal' schooling. The Grade 0s and Grade 3s were observed at the end of the year (the end of 'informal' schooling and the end of the Foundation Phase). The Grade 0s were followed into Grade 1 of the following year though. Individual children were not the prime focus of the study but rather the continuities and ruptures of literacy practices across these years were. The primary means of data collection was participant observation which was recorded through a combination of field notes, spatial maps and video-recordings. Each teacher was interviewed, artefacts produced by the children and relevant policy documents were also collected.

In order to contribute to an understanding of how children are trained to become literate the spatial and temporal are used as lenses to understand patterns and ruptures that exist across these five early years classrooms. Foucault's (1977) three aspects of the timetable (establishment of rhythm, imposition of occupation and regulation of cycles of repetition) were used as guiding principles to establish daily timelines of each classroom. This enabled me to see temporal shifts and continuities across early schooling. Spatial maps of the classrooms were constructed and four key classroom spaces identified. Movement flows were drawn onto the spatial diagrams by considering where children were distributed in space in relation to the daily activities represented on the timelines. This mapping cannot show the nuances of individual movements in classrooms, what it does reveal are broad patterns and changes over time.

Reading data in relation to the spatial and temporal in this way sets up an understanding of what is happening in these classroom environments. This also needs to be read in relation to particular conceptualisations of literacy which is where I now turn.

Teachers' constructions of literacy

Teachers' understandings of literacy that emerged from the data are predominantly located in a skills based paradigm. Literacy was described by two teachers as "reading, writing and spelling" (Grade 1 and Grade 3 teacher). The fact that spelling is listed as equal to, and not an aspect of reading and writing is pertinent. When asked what she taught for the Literacy learning area another teacher responded by talking about spelling. This preoccupation with spelling is also reflected in the assessment in the Grade 1 and 3 school reports (Table 1). Set alongside different criteria, spelling could be an important part of editing if teachers worked with a process approach to writing. But, grouped with 'sentence construction' and 'presentation' (a euphemism for neat handwriting), it is a product approach to writing that predominates. Children did weekly spelling tests where the tested words were decontextualised, the choice of words determined by a phonics based approach to reading instruction. One of the teachers described writing activities thus:

> We use spelling words . . .applicable to the sound and letter they're doing. And then they only use the texts once they've done the entire alphabet and they are applying the knowledge of their writing skills. They either write their news, copy a text, copy writing cards, so that's how they apply it.

Table 1: Grade 1 and 3 assessment criteria for literacy

Foundation Phase Reports	Grade 1	Grade 3
Oral	Vocabulary	Vocabulary
Writing	Sentence construction	Sentence construction
	Spelling	Spelling
	Presentation	
Reading	Expression	Expression
	Fluency	Fluency
	Comprehension	Comprehension
		Punctuation

The repeated references to copying has an impact on how children construct sentences. There is no development from the writing of individual sentences to extended texts in Grade 3. This lack of writing beyond sentence level is borne out by the multitude of worksheets the Grade 3s were given and a trend identified by Hendricks (2006) of the paucity of writing in South African primary schools.

Reading is constructed as the ability to read aloud. In keeping with a phonics approach to teach reading, recognition, identification and fluency was key. Teachers felt that a good reader is "a child that identifies the words that are taught to him. . .and can also tell you what's out of context". A good reader is also required to have internalised different forms of punctuation, they need to "pause at the full stops. . .and they try with the commas". These aspects are reflected in the assessment criteria. To read with comprehension requires a reader who can make sense of what has been read. But observations reveal that there was no discussion of the texts with children when they read aloud. Comprehension was thus inferred from fluency and expression. It is possible for early readers to recognise words, read them fluently, but not be actively making meaning from them.

This conceptualisation of literacy as a body of knowledge that is transmitted to children is limited. Little mention was made that reading and writing could be done for pleasure, or that reading and writing can have different purposes. There was no mention of reading books and extended texts in interviews. It was in the preschool classrooms that story time was part of the daily routine

and 'discussed' (mostly at the level of recall than interpretation). Neither preschool teacher included story time in her discussion of literacy. There were few writing tasks where primary school children used literacy for personal expression and recount genre of 'My News' limited what the children could say. This is in stark contrast though to the preschool classes where children were given opportunities to, in the Grade 00 teacher's words "experiment on their own" by producing their own texts, or choosing books to read. As a means of social control the spatial and temporal arrangement of these classrooms worked to discipline literate subjects that contrasted to those produced in Grades 1 and 3.

The control of activity: curriculum time

The timelines in Figures 1 and 2 provide a beginning and end point of early schooling as an overall point of comparison. As timetables they indicate the general framework of activity in these schools. They also indicate a change over time in terms of how school days are organised at the beginning of early 'informal' schooling in the Grade 00 class and at the end of the Foundation Phase in Grade 3. The rhythm of the day is regulated by a bell, represented by the horizontal thick black lines, indicating the point at which specific occupations are imposed. They also show the distinction between 'curriculum time' which is controlled by teachers and 'play time' which is perceived by children as under their control (Jenks, 2001). I find the term 'play time' problematic as there are frequent instances in the early years when play time is scheduled in to curriculum time and is teacher controlled. I use the term free play to indicate child-directed play that takes place outside during 'breaks'.

8:00	BELL: DAY STARTS
	Tidy up time *Morning activities:* pray, register, lunch book, weather and days of the week, weekly theme/interest table/show and tell, singing, story *Toilet time* *Perceptual activities*
9:45	*Lunch time*
10:30	
	FREE PLAY
11:30	*Story time* *(Sleep)*
12:30	END OF SCHOOL DAY

Figure 1: Grade 00 timeline of routines

8:00	BELL: DAY STARTS
	Administration during first class task (Literacy or Numeracy) Additional tasks (Literacy or Numeracy)
10.00	Lunch
	FREE PLAY
10:15	Class task (literacy, numeracy or life skills) (May read aloud to teacher) Additional tasks
11:50	
	FREE PLAY
12:10	Task/ (Play)
1:30	END OF SCHOOL DAY

Figure 2: Grade 3 timeline of routines

The most obvious change across the grades is the lengthening of the school day. In Grade 00 of a four and a half hour school day, three and a half hours are teacher directed and one hour is given over to free play. The length of the day is extended by half an hour to five hours in Grade 0 and Grade 1 and to five and a half hours in Grade 3. Free play in Grade 3 is reduced to almost half the time the Grade 00s get, thirty five minutes, and further divided into two segments. Thus curriculum time is broken into three blocks of time in comparison to the two longer blocks of curriculum time in the preschool.

Although only an hour is added onto the school day from preschool to the end of the Foundation Phase, curriculum time unsurprisingly increases by an hour and a half by Grade 3. Play, an important part of preschool activity in which

both socialisation and self-directed learning take place, becomes limited as children are expected to 'work' for longer periods of time.

The timetable as imposer of occupation and repetition is reflected in these timelines but they also reflect the daily occupations or tasks that children are required to perform. A particular notion of the schooled subject is revealed in the timelines. Jenks (2001, p.73) argues,

> Discipline it would seem involves a control of a body, or more specifically an activity, and does so, most effectively through a timetable, children are required to eat, sleep, wash and excrete mostly at specific and regular times.

What is clear from the preschool classrooms is the entrenchment of regular routines. Both the preschool classes learn to eat, sleep, work, excrete, and play at the same time everyday. The Grade 0 teacher is acutely aware how unsettled the children become if she 'breaks the routine'. Although there are routines in the primary school they are less rigid, children do not do the same activities in the same order every day. The fact that both these timetables have large blocks of time rather than being divided into smaller equal segments of time is crucial to the development of early literacy. Knowing what happens everyday, where it happens, and what children must do with their bodies is crucial for mastery. Or, in Foucaultian terms, understanding the temporal elaboration of the act, the correlation between body and gesture and body-object articulation and having the opportunity to practise these daily (exhaustively) leads to mastery. At the beginning of the year learning to write, cut, finish colouring in take longer. Enough time needs to be allocated to mastering reading and writing so that these practices become habitual. There is a change over time as levels of mastery increase so do the number of tasks and their complexity. Teachers spend less time working through all tasks with children and spend shorter periods doing whole class teaching before leaving the children to apply this knowledge to a task.

The utilisation of classroom spaces

Four classroom spaces have been identified as key sites where literacy practices take place: the teacher's desk, the reading corner, the carpet and children's desks (Dixon, 2004). These spaces can be read as functional sites because each space can be utilised for a number of purposes. This section compares of the utilisation of these spatial configurations across the grades.

Figure 3 shows clearly that the Grade 00 classroom has a different design to the other classrooms. It is the biggest, has five hexagonal tables for groups to work at, a large carpet that is partitioned into a fictional play area opposite the teacher's desk. There is also a cleverly designed reading corner with bookshelves and cushions and an interest table on the other side of the partition, and an open carpet space for children to sit on and play. The Grade 0, 1, and 3 classrooms (figures 4 and 5) all have a carpet fixed underneath the black board at the front of the room. The Grade 0 classroom has a reading corner that is at the back of the classroom where the books are stored in pigeon holes. All the children's desks in Grade 0, 1, and 3 are arranged in groups. Teachers placed their desks either at the back or the front of the class which are prime positions of surveillance.

Figure 3: Grade 00 Spatial Map of Grade 00 classroom

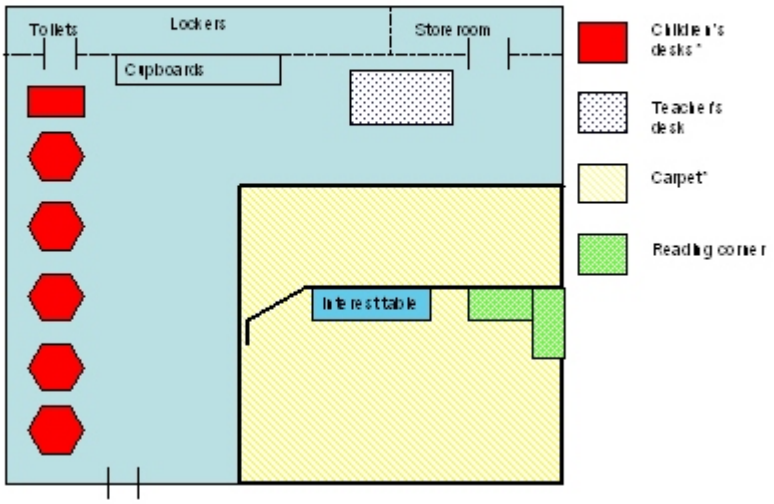


Figure 4: Spatial Map of Grade 0 classroom

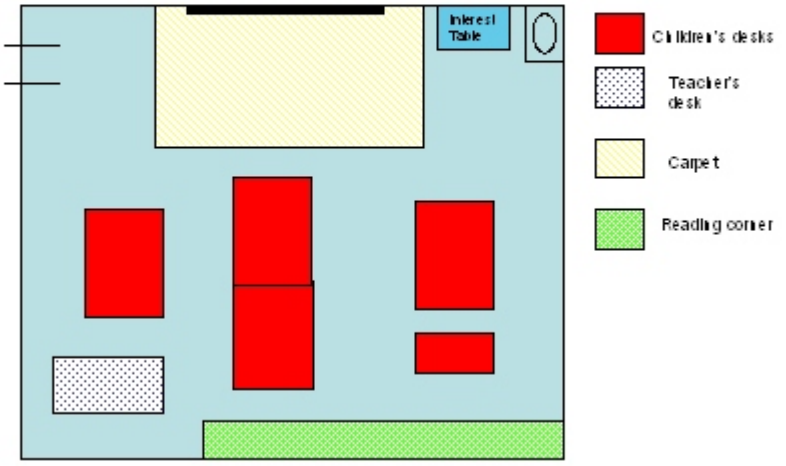
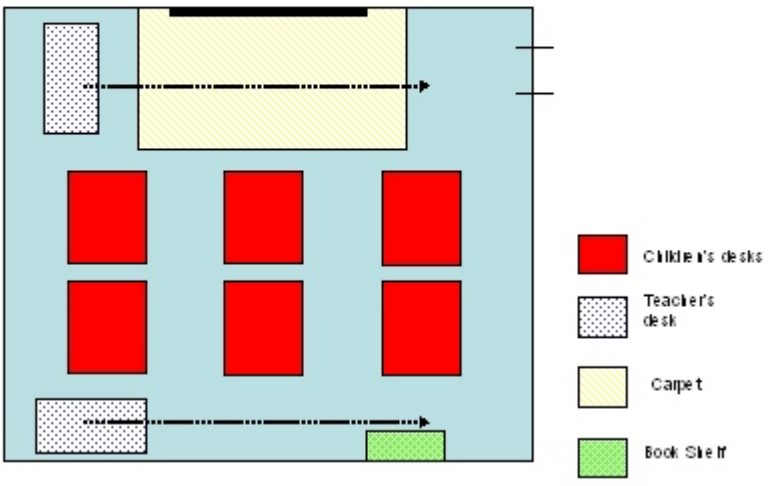


Figure 5: Spatial Map of Grade 1 and 3 classrooms



The teacher's desk was barely utilised at all in Grade 00 because the teacher spent her time with the children who needed constant attention. It was a restricted space for the children. Her movements were fluid and influenced by the daily routines. In Grade 0 the teacher's desk was used for administration and marking of children's work. Behaviour for being in the teacher's space

was prescribed and children were not allowed to crowd the desk but line up. This is an indication of children learning the rules for being in different classroom spaces. The Grade 1 teachers spent more time at their desks often marking and preparing books. Space is now made for children who need individual attention and to read aloud. The Grade 3 teacher spent the most time at her desk and there is a correlation between this time and the time children are confined to their desks. These children are more independent and do not require the same attention as the younger children. The first shutting down of space is evident here as the fluid movement of the Grade 00 teacher diminishes across each year.

The reading corner is a space that is systematically shut down. In Grade 00 as a functional site it is designed for children with shelves that store books with their covers facing the reader, and cushions to sit on. It is utilised when play time is scheduled in the curriculum although it is not as popular as the open carpet as a play space. In this space children begin the process of becoming readers in an exploratory way, learning to handle and hold the books and read images and 'read'/tell stories. They know not to 'hurt the books'. This is a space for a solitary reader or space to read with friends. Observations show that children mimic the reading aloud they have seen modelled by the teacher using common story phrases ('One day the. . .'). The design of the Grade 0 reading corner does not encourage reading. There is no place to sit and read the books at the back of the class and it was infrequently used. Reading is a teacher-controlled group activity on the carpet. In Grade 1 the reading corner is no longer a functional site but a shelf to store readers. The Grade 3 bookshelf had battered books and annuals that were seldom used by children. The development of this space was hampered by an increase in the number of children but the spatial configurations of the reading corner in these classes worked against their proper utilisation.

The carpet is the most functional of all sites. Observational data reveals it is used for sanctioned and unsanctioned play and performance, whole class and small group teaching, story time, reading, playing teacher directed games. It is also used as a place to sleep, a waiting area, a place of surveillance and discipline, and for some children a space to fight. The Grade 00 and Grade 0 day begins and ends on the carpet. It is space where a large amount of literacy learning took place. The Grade 00s have been ranked into groups that reflect ability and are taught to sit in straight rows. The Grade 0s are allocated a space on the edge of the carpet making a 'square' circle. Preschoolers internalised daily routines and behavioural norms – this is evident from an incident when several Grade 0s were absent. Rather than reorganising the circle, the children

remained in their spaces leaving gaps for the absent children. The circle as a means of spatial distribution is an effective means of targeting the body in the exercise of power. Facing inwards means that everyone can see everyone else. The closed nature of the circle works to create a sense of unity. The Grade 0 teacher often went round the circle asking for the identification of a letter, word, or suggestion for a song. The literate subject constructed in this space is one who forms part of a group who learns to work together with others. 'Correct' socialisation was demonstrated by an ability to be with, work together with other children, and follow institutional regulations in these classrooms.

By Grade 1 the carpet is more highly regulated. It is no longer a place to play. The majority of activities consist of whole class reading, group reading, individual reading and story time. The two Grade 1 teachers used the carpet differently. The teacher who used it more implemented a routine for children to get to the carpet 'on tips of toes' and where children sat 'boy girl, boy girl' and shortest to tallest so that everyone fitted into the space and could see her. The management of bodies through space created less chaos. By Grade 3 the carpet was used for children to eat their lunch before the first free play session.

The Grade 00 class stands in stark contrast to all the other grades in relation to the way desks are used. The children sit at their tables in their allocated groups, ranked by ability. But, once they have completed the task at their desk, they are expected to move on to each of the other tables to complete all the other tasks. In a day they may colour in, paint, build puzzles, string beads and build blocks on the carpet. Sometimes these tasks are punctuated by an unsanctioned 'play break'. By the end of the lesson the children have completed all the tasks, in their own time, and worked with a variety of other children. This again works to develop a collective. In the other grades movement becomes increasingly restricted as children are allocated a space to work and are expected to spend greater lengths of time there. Although the desks are configured in groups most of the work is individual. Children are expected to work quietly (or in the words of the Grade 0 teacher "lock your mouths and throw away the key") and independently. The bodily training required to sit at a desk is far more complex than the carpet, and this is where the control of activity cannot be separated from the space it happens in. This is illustrated quite graphically by Parker (2003: no page number):

> Sitting at a desk involves a complicated break up of patterns, i.e. flexed ankles, knees and hips with an extended spine and controlled flexion (to look down at your book) and extension (to look up at the board) of the neck. This needs to take place against a

> background of unconscious postural stability. In addition to this you need to be able to free your arms from your body in order to perform fine motor tasks such as writing, move your eyes independently of your head and to organise your desk. As if that is not enough, the child is also expected to listen to information, process it and remember it.

This leads me to the final section of this article that considers the amount of movement across and time spent in these classroom spaces across the day.

Movement flows across time and space in early literacy classrooms

This section considers children's movement across the day. Using the two previous sections it maps children's movement in terms of the spaces they are located in each day in relation to their timetable as well as the time spent in these spaces. These movement flows are intended to present broad patterns of movement across the day as a way of seeing how space and time are used across early schooling. They are not intended to track individual children and cannot reflect movements of children who resist classroom norms. The allocation of time spent in each space is a rough estimate which is used as a general point of comparison. Other researchers have tracked movement flows in individual lessons (Sheehy, 2004) but these are more nuanced detailed analyses with a different focus. These diagrams use arrows to show which spaces the children move to. Arrows with a circle attached indicate the beginning of the school day. Arrows with broken lines indicate play or free time within curriculum time. The numbers next to arrows indicate the order through which children move through space and the related activity is explained in the discussion below.

Figure 6: Movement flows in space and time: Grade 00

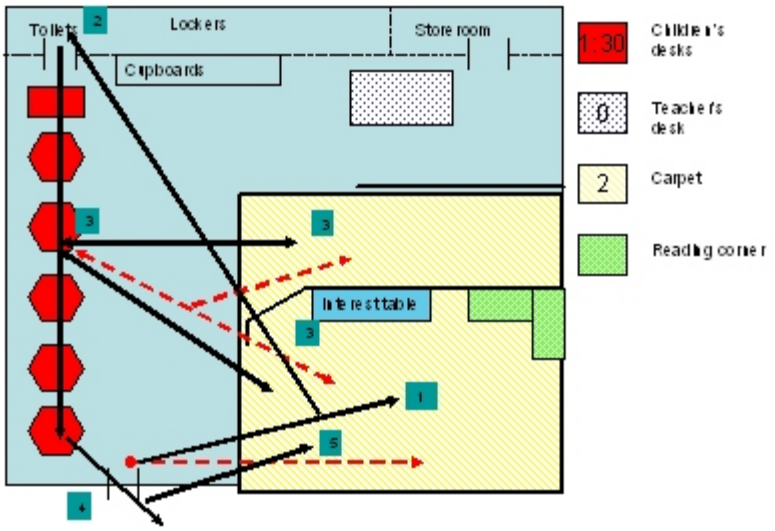
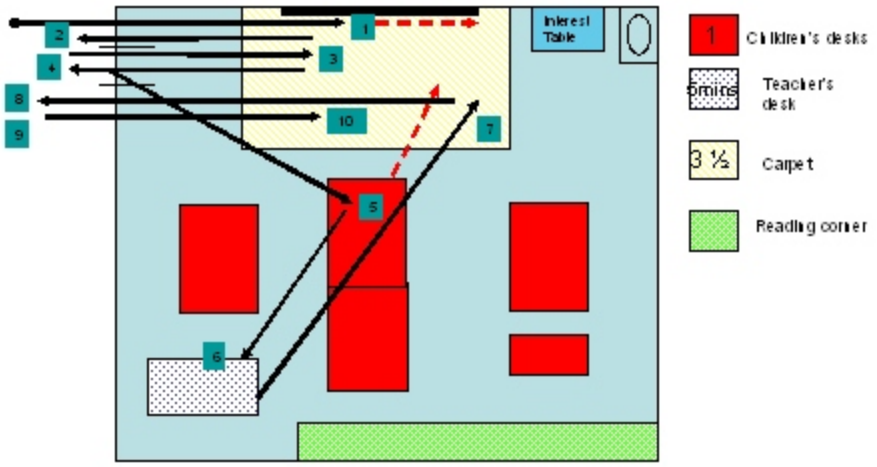


Figure 6 shows the movement flows in the Grade 00 classroom. The three and a half hours of curriculum time are divided between an hour and a half at children's desks and two hours on the carpet. Movement is managed carefully and in the preschool classrooms; it is essential that children conform to routines. Unlike the other grades the Grade 00s often play in the classroom before the school day begins [1], this 'before school time' is predominantly spent on the carpet. When the school day begins, some children may come in from the outside playground, then children are required to tidy up before they sit in allocated groups in rows on the carpet [1]. The morning activities include discussing the weather, counting, singing, a discussion of the weekly theme, the reading of a bible story, and Show and Tell on Friday mornings. If a child brings a book to class then the teacher will read it aloud. The next movement is carefully controlled as groups are sent to the toilet [2] and then move to their tables [3]. Each group is assigned a different task designed to develop and build emergent literacy skills (e.g. painting, drawing, colouring in, puzzle building, cutting out, fantasy play) and each child is required to complete all the tasks over this period of curriculum time. Children are not beholden to the pace of their group in order to move to the next task. Individuals move tables, sometimes guided to new tasks by the teacher. Some of this time may be broken with a spontaneous 'play break' [3] on the carpet before they return to complete a new task. This may be in the reading corner, the fantasy play space or the open carpet. The children then eat lunch and go

outside to play [4]. On returning from their free play they return to the carpet for story time and sleep there until the end of the school day [5].

The literate subject here has some control over producing and designing texts, is able to work with peers or as an individual. The feedback children get from others a their desks is valuable to literacy learning (Dixon, 2007). The fact that literacy is not a linear process and punctuated with play, both sanctioned and unsanctioned, creates an environment where there is no pressure to complete assigned tasks, but where these are fun. This is an environment where the literate subject is one who experiments. The teacher knows that over time children become more disciplined in completing tasks. These literate subjects learn to self-regulate and move independently from task to task taking responsibility for their learning. But, reading is not taught formally, discussion of texts is limited, and the fact that the reading corner is set up as a space children choose to enter, means that the reading subject may not be developed as fully as they could be.

Figure 7: Movement flows in space and time: Grade 0



The routines of the Grade 0s are similar to the Grade 00s. But of the four and a half hours of their curriculum time, three and a half are spent on the carpet, one hour at children's desks and children may line up at the teacher's desk to hand work in or have it marked. It is clear from figure 7 that the carpet is at the heart of learning and teaching in this class.

The Grade 0s also begin the day on the carpet and sit waiting until daily administration is done (e.g. collecting lunch money) [1]. They have learnt to play or talk quietly amongst themselves here. Their first ring time includes activities like singing, counting, identifying letters and short words. The reading subject that emerges here is skilled at repetition (chanting numbers, letters), and the identification of decontextualised words, but is not required to make meaning beyond this. The children are accompanied by the teacher to the toilet down the corridor [2]. On their return they eat lunch on the carpet and then leave for their first scheduled free play [3] [4]. After this play break they move to their desks which are arranged in groups [5]. As with the Grade 00s, but with far greater pedagogical control, the correlation of the body and the gesture, an understanding of the body-object articulation and the exhaustive use that come from daily practice are required for the Grade 0s to complete perceptual exercises that are deemed necessary for emergent literacy: "we'll do perceptual worksheets…drawing lines from the left side to the right side, drawing lines from up to down, doing dot to dot". The writing subject is being skilled in mastering the spatial arrangement of the page when they will need to form letters and words in Grade 1. This is a predominantly drilled subject rather than a creative one. Although there are times made for free drawing and they are taught in a supportive, caring environment. Once the children finish they may go to the teacher's table to have work marked [6] and then go to the carpet to wait until everyone is finished. If they are not too noisy then they can play with each other. They engage in a second ring time [7] where they play games (memory games) and after the second free play period [8], end the day on the carpet with story time [10].

Figure 9: Movement flows in space and time: Grade 3

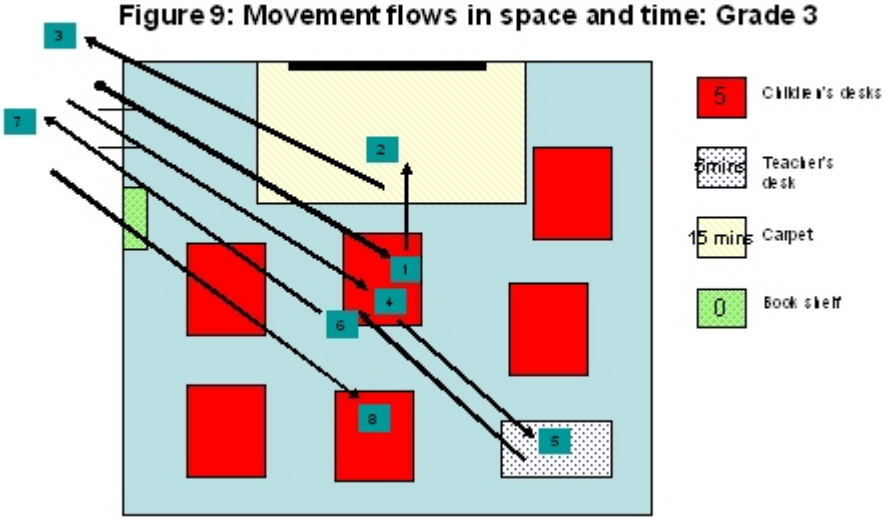
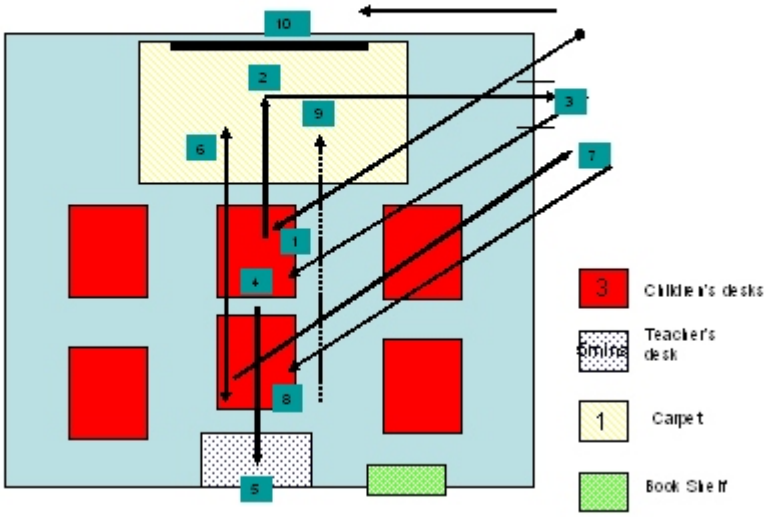


Figure 8: Movement flows in space and time: Grade 1



The predictable regularity of preschool tasks begins to disappear in the primary school although occupations are still imposed. Tasks are no longer sequenced linearly as several events often take place simultaneously. The primary school subject is one who can complete a greater number of tasks, can interrupt one task for another (leave a numeracy exercise to read aloud to the teacher), and return to complete the original task. The subject is expected to work as an individual rather than part of a collective which is illustrated by the greater time spent at children's desks (figures 8 and 9).

Grade 1s now spend three hours at their desk in a five hour day, and Grade 3s are restricted to theirs for five hours in a five and a half hour day. Both grades may spend a short time at the teacher's desk reading aloud although this is not always a daily practice. Time at the carpet is reduced from three and a half hours in Grade 0 to one hour in Grade 1 and 15 minutes in Grade 3 for children to eat their lunch. The Grade 1s begin the day at their desks [1], eat lunch on the carpet [2], leave for free play [3], return to their desks [4], read at the teacher's desk [5] and possibly go to the carpet as a class or group for a teacher-led reading activity [6]. Reading is regulated by the Letterland phonics programme. The tasks are about recognition, blending letters and the reading subject is an extension of the Grade 0 subject. Children return to their desks, leave for free play [7], come back to their desks [8] and possibly end the day with story time [9]. As the year progressed though, this became less frequent. The only sanctioned times the Grade 3s left their desks was to eat lunch [2], read aloud [5] or leave for free play [3] [7].

The movement flows in the spatial diagrams show the increasingly restricted movement of children across early schooling and indicate the greater amount of time that children are required to sit in one place. A particular conception of the schooled subject emerges. The greater concentration of time spent on the carpet in the preschool grades works to construct a cohesive collective. Children are required to talk, listen, look, sing, move, and read together. As time goes on children are required to sit for longer periods on the confines of a chair and complete work individually. Although all these classrooms' desks are configured into groups very few tasks require group work. Rather than completing a number of tasks like the Grade 00s, the primary school children after receiving whole class instruction complete given tasks. These tasks predominantly develop recall and skills. With Grade 3s spending so much time in their desks, the question that arises as to what they are doing there. What is evident is that when children's literacy training is limited to one space, and the activities are restricted to a skills based model of literacy, then the literate subject that emerges is rather limited.

Conclusion

While all these teachers' conceptualisations of literacy are deeply influenced by a skills based paradigm, the potential to develop other aspects of literacy is present in the practices of those teachers who utilised more classroom spaces. The use of space reflects the 'space' for experimentation in Grade 00 and a

collective Grade 0 group identity. This is compared to immobile Grade 3s confined to their desks and a phonics influenced reading and writing programme with little space to develop as readers and writers where pleasure, play, and creativity were fostered, or for that matter reading and writing texts with a real purpose.

What is clear is the relationship between space, access to spaces during the day, and discipline. When literacy as a body of knowledge is conceived narrowly and children are subjected to this over a number of years then the ways in which social control is maintained is affected. The Grade 3s who spent so much time at their desks with few opportunities to read and write in ways that engaged their interests, often displayed their frustration and challenged the disciplinary power of the teacher. There were several occasions where the teacher was required to use a whistle to bring the noise level down; where children slipped from their desks to sharpen pencils and 'borrow' items at the slightest provocation. This was in contrast to the Grade 1 teacher who through rigorous routines moved children out of their desks to the carpet for different reading activities. The children learnt what was expected of them and far less time was wasted in trying to regain their attention.

It is of course paradoxical that a greater amount of (controlled) movement leads to greater discipline in the classroom and better possibilities for literacy learning. Teachers' conceptualisations of literacy impact on the spatial and temporal configurations that in turn have an impact on the construction of the literate subject. If these teachers' understanding of literacy was broadened then it would be interesting to examine the ways in which time and space are reconfigured in their classrooms.

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Kerryn Dixon
University of the Witwatersrand

kerryn.dixon@wits.ac.za

School as cultural practice: Piaget and Vygotsky on learning and concept development in post-apartheid South Africa

Azwihangwisi Muthivhi and Yvonne Broom

Abstract

Contemporary South African schooling, founded on progressive educational ideals such as learner-centeredness, teacher as mediator and respect for cultural diversity, calls for a close examination of the assumptions underlying these concepts and their associated pedagogical approaches.

Piaget and Vygotsky's theories respectively offer an interpretive and conceptual framework suited for elaborating on the nature of curriculum and the ensuing pedagogical practices of the post-apartheid educational setting in South Africa. The paper, informed by Piaget and Vygotsky's framework, examines concept learning and development as simultaneously involving individual, self-regulatory processes on the one hand and the socio-culturally mediated processes on the other hand.

This paper posits that learners manifest, during the experimental task performance, both the structure of the processes of self-regulation (individuality) and other-regulation processes of their society and culture. These pluralist, heterogeneous forms of cognitive development and functioning suggest a unique socio-cultural context of learning and development – with important implications for curriculum organisation and the design of classroom instruction.

Introduction

Piaget and Vygotsky were concerned with a common unit of analysis; namely, the processes of thinking of a subject located in society and culture. They proceeded from a common ontological assumption that knowledge is actively constructed and that it is the product of the actions of an individual rather than an imposition by society and culture (cf. Stetsenko, 2008). Individual activity as a central mechanism that accounts for knowledge was explained by Piaget (1964; 1981) through the concept of *equilibration* while Vygotsky (1978; 1981) used the concept of *internalisation* to account for the same process. Both processes suggest adaptation through transformation of self.

It is in the account of the formal operational processes and their genetic basis that the analytic emphases of the two frameworks diverge. Piaget emphasised the internal structuration of thought while, from Vygotsky's point of view, such structuration has to be considered against the background of how the sociocultural context within which it arises has, in turn, been structured. These differences have been conceived as dividing the two approaches. However, this diversity in analytical emphasis in the respective frameworks should allow them to be brought into some kind of dialogic relationship. The different analytical foci of the two theoretical traditions should motivate for their complimentary application in empirical research to facilitate a more comprehensive interpretation of observations.

The application of this novel interpretive approach to subjects' experimental task performance in the present study renders their complex cognitive performance meaningful in relation to the specific cultural context of its manifestation. The subjects' spontaneous developmental processes and their culturally mediated processes are explainable in terms of a single interpretive framework that takes into account both the *organism* and the *tool* through which action becomes possible. In this way, the human organism changes its culture at the same time that culture is changing it. The subjects' organismic potential is viewed from the perspective of what Shayer (1997, pp.36 and 38) argued is a "genetic programme" supporting the assumption of a "genetic potential for cognitive development". The same organism, making use of culturally mediated tools, elaborates and sometimes transforms itself as it simultaneously transforms its culture.

Schooling as a sociocultural practice is progressively changing in the course of new discoveries positing new social relations, at the same time that learners are expected to learn new knowledge from this institution and transform their existing ways of thinking. Piaget, for example, anticipated a mode of teaching and learning in school that is premised on symmetrical relations with no unequal, authority-based social relations that often result in learners feeling the pressure to adopt the point of view of the adult (cf. Labouvie-Vief, 1996). Contemporary schooling in South Africa seeks to provide learning conditions of equality where the teacher is a 'mediator' and 'life-long learner' rather than the 'source of knowledge' (Department of Education, 1996; Department of Education, 2004).

This approach, on the part of South African teachers, would involve a change of their existing cultural practices to those demanded by their new schooling and curriculum policy. These processes of social relations, necessary from

Piaget's framework to bring about formal operational forms of thinking and problem solving, were anticipated by Vygotsky in the formulation of his theory; as processes of culture and society that are temporally prior to individual activity but not reducible to it (Wertsch, 1995). As a result, South African schooling could be considered from the Sociocultural perspective as providing a cultural context characterised by rapid change from the authoritarian, apartheid schooling to the contemporary, post-apartheid dispensation. This is a unique sociocultural context of learning and development that demands close examination regarding its consequences for learners' learning and development as well as the learners' (and teachers') contribution to changing the cultural-psychological processes of school learning and development.

The present study shows how an understanding of the commonalities and differences between the Piagetian and Vygotskian frameworks can illuminate how the subjects' specific schooling and culture shape their learning and development in the South African context. The theoretical approaches of Piaget and Vygotsky were based on the assumption that to understand a phenomenon is to understand the process through which it has been produced, "its developmental construction" (Duveen, 1997, p.68). Vygotsky (1978) has proposed that the appropriate methodology for the study of human psychological processes involves the reconstruction of the genetic (historical-developmental) basis of the phenomena, its course of development, to its present manifestation. In a similar vein, Piaget (1995, p.278) argued that "human intelligence is subject to the action of social life at all levels of development from the first to the last day of life". A theoretically informed analysis of the subjects' responses to the experimental task questions that considers the genetic basis of such performance from the subjects' context of learning and development in their schooling is carried out with a view of illuminating on the sociocultural structuration of the subjects' task performance.

The experimental task

The task performance of Grade 7 learners (mean age of twelve years) provides an appropriate focus for the analysis. The full report of these experiments was presented in Muthivhi (2008a; 2009). Schooling for learners in Venda was dominated by rote-based transmission modes of teaching and learning, with little critical engagement with knowledge. These are practices that derived,

and had evolved, from the missionary traditions on which Venda schooling was predicated. Within this system of schooling, the authority of the text was venerated and learners were taught to accept the text without question and critique. These modes of classroom practice were later replaced, but not superseded, by the schooling traditions of the repressive apartheid political regime. Under this system of schooling, learners where also encouraged to accept the authority of the text without question and teachers were trained for uncritical reproduction of the apartheid ideology (see Muthivhi, 2008a for a detailed discussion). These were the conditions of schooling and classroom teaching and learning in which the learning and development of the learners in Venda took place and that constituted the cultural-institutional context of formal schooling.

The experimental tasks required the subjects to demonstrate understanding of *possibility* through hypothesising about possible colour values that can be made from the given situations that involved a tinfoil covered half circle and a red uncovered half circle. The tinfoil covered half is assumed to be either red or green and its colour value is presumed not to be knowable in advance. As a result, proceeding from the hypothetical position regarding the covered half, it should be possible to make an (i) all red circle and a (ii) red and green colour circle but it would not be possible to make a green colour circle since the uncovered half was already red. Adding another uncovered green colour half circle into the task (for Situation Two) makes it possible to make (i) an all green circle, (ii) an all red circle and a (iii) red and green circle (see Muthivhi, 2008; 2009).

Although these procedures were explained to the subjects, who participated in the experiment one at a time, and they seemed to understand and agree with the explanation given by the experimenter, the subjects did not stick to the principles agreed to at the demonstration stage during their responses to the task questions. For example, their responses to the task questions revealed that they did not consider the tinfoil covered element as not knowable in advance since they responded to the questions on the basis of an assumption of a definite colour value pertaining to the covered element.

The following were the task questions the subjects responded to:

Table 1.1. Situation 1 questions[1]

- (1a). If we remove the foil, will it be possible to make an all-red circle?
- (1b). If we remove the foil, will it be possible to make an all-green circle?
- (1c). If we remove the foil, can the full-circle be red-and-green in colour?
- (1d). If we remove the foil, will the circle be of one, or two, colours?
- (1e). If the circle that is made out of these two halves is one colour only, what colour does it have to be?
- (1f). A few minutes ago, another child made a one-coloured circle using the same halves as these in front of you. What colour do you think it was?
- (1g). What colour can all the circles that can be made out of these halves be?

Situation 2. questions

- (2a). Can we make a red-and-green colour circle?
- (2b). Is there another way in which a red-and-green circle can be made from the half circles in front of you?
- (2c). With these half circles, will it be possible to make an all-red circle?
- (2d). If the tinfoil is removed, will it be possible to make an all-green circle?
- (2e). If the foil is removed, can we make a one-coloured circle from these halves in front of you?
- (2f). If we want to make a one-colour circle, by these halves in front of you, what colour will it be?
- (2g). If the foil is removed, what are the different-colour circles that can be made from the half circles in front of you?
- (2h). If the one colour circle that is made from these halves in front of you has to be one colour only, that is: all-red, or all-green, it has to take the colour of one of these three halves. Can you say which one this half circle is and why do you think so?

Results

The results of the Grade 7 subjects are of particular interest for the present discussion. From a theoretical perspective, twelve year olds have just attained formal operations and are therefore expected to perform competently on the task. The comparative results of Pieraut Le-Bonniec (1980) and Macdonald (1987) have shown that the children were able to solve all the task problems by Grade 5 (ten years of age). In contrast Muthivhi (2008a; 2009) showed that

[1] Tables reproduced from Muthivhi (2009) with permission.

children in disadvantaged, rural and non-industrialised sociocultural settings failed to address all the task problems competently even by twelve years of age.

Grade 7 subjects obtained an average performance of 84 per cent, only 15 per cent more than the Grade 5 subjects who managed 69 per cent. The Grade 7 subjects' performance was not statistically significantly different from that of the concrete operational Grade 5 subjects (See Muthivhi, 2008a; 2009 for details of the statistical analysis of the performance). These results suggest that the performance of the Grade 7 subjects was still dominated by the concrete approach to problem solving. They did not apply the rule regarding the formulation of a hypothesis about the covered element consistently to address all the task questions. The explanation for this dominance of a concrete approach to problem solving can be found in the subjects' dominant modes of learning in their schooling. Their school learning did not emphasise formal, abstract modes of problem orientation and task engagement. Empirical studies of classroom teaching and learning activities confirmed this assertion (cf. Muthivhi, 2008b).

Culturally shaped modes of learning and development are internalised into the dominant problem orientation and task engagement strategy for solving formal problems by the subjects. For example, when addressing situation (1f): "A few minutes ago another child made a one-coloured circle using the same halves as these in front of you. . .", the subjects often interpreted the hypothetical statement in concrete terms, giving it a literal interpretation. The notion of "another child" tended to be interpreted as referring to a real person who had earlier on participated in a similar experiment. For example, Mulalo[2] responded to question (1f) that the other child could have made a red circle. To the follow up question: "How did she do this?" Mulalo responded: "She could have used a red half from these (pointing at the elements that were placed outside)". To the experimenter's further suggestion that the red colour circle was made using the two elements in the game, Mulalo argued: "This (the covered element) is green and the only one that could have been used by the other child is the one outside as she could see that its colour was red". Mpho responded to the same question with: "It depends on what colour halves the other child has used", while Dakalo said: "I cannot say what colour it was because I did not see what the other child did". While proceeding on the basis of an assumption of a definite colour value for the covered element, the

[2] Not real name. All names have been changed to protect the identity of the subjects.

subjects interpreted this question as referring to a real event that happened earlier on, and sometimes thought of the participants who had gone before them as "another child" the statement referred to. For example, Livhu retorted after the question was asked her: "Which child? Tshifhiwa?"

This response pattern suggests that the subjects resisted the information provided at the beginning of the experiment and the assertion that this task would involve hypothesising about the colour value of the covered element to think about possible states of affairs. The notion of possibility the subjects emphasised was tied to the concrete materials of the experimental tasks while the scope of the materials to be used for the purpose of task engagement was also extended arbitrarily (against initial agreement) to include the elements that were placed outside the experimental activity. This approach to task problem suggests a mode of problem orientation that is concrete and functional. Solving the task problems for the subjects was not conceived, primarily, as an act of adhering to the rules of engagement that had now become the subject of thought in abstraction but a matter of addressing a real and immediate problem using all available contextual information. This approach to problem solving and problem orientation seems to be embedded in the culture of learning and schooling of the subjects, where tasks are often linked to, and make direct reference to concrete phenomena in the subjects' immediate surrounding.

In the case of situation (1g), as in questions (2g) and (2h) that required the formulation of a double hypothesis about the covered element, most subjects did not perform competently. This was probably due to the subjects' tendency to think of 'the possible' as also involving 'the real'. That is, once the subject posited that it was possible to make a red, or red and green circle, he or she ignored the fact that it should 'simultaneously' be possible to make an alternative colour circle. For example, Kundi (K) responded to question (1g) posed by the experimenter (Exp):

Exp: "What colour can all the circles that can be made out of these halves be?
K: "Red and green".
Exp: "Only a red and green circle? What other colour circle could also be made?"
K: "Red and Green".
Exp: "Will it be possible to also make a red circle, all red circle, from these halves in front of you?
K: "No".
Exp: "Wouldn't it be possible to make a circle that is red all over?"
K: "No"
Exp: "Why do you think so?"
K: "(After a long pause) This (pointing at the covered element) is red".

Fhatu (F), in responding to question (2g), only suggested two instead of three possibilities:

Exp: "If the foil is removed, what are the different-colour circles that can be made from the half circles in front of you?"
F: "We can make a red and green circle (pointing at the relevant uncovered elements) and a red circle if this (pointing at the covered element) is red when it is uncovered".
Exp: "Is it possible to make a green circle, a circle that is all green from the elements in front of you?"
F: "No".
Exp: "Why do you think it is not possible to make a green circle form these halves?"
F: "Because we will find this (pointing at the covered half) to be red when we uncover it".
Exp: "How do you know this?"
F: "I just know".

Question (2h) seemed to confound the subjects by its content. The subjects did not appear to be used to engaging with long and complex verbal statements. This question had to be repeated for most subjects. The incorrect responses involved pointing at the red uncovered half. Most of these responses were not clearly defended as the subjects often said that they "just knew", or that "the circle will be red". Also notable in the subjects' responses to these questions (and this could also be said of most subjects who provided competent responses) was the inability to provide a justification for the initial responses as the question required. Thus, only the first part of the question: ". . .Can you say which one this half circle is. . ." was addressed while the part involving ". . .why do you think so?" was often ignored and only addressed on the experimenter's insistence.

The limitations in the subjects' responses to these questions could be traced to the dominant activities of their classroom teaching and learning, and involved an inability to provide an elaborate account of the processes and procedures involved. That is, explaining how the possible states would result from each of the possible situations, rather than emphasising the answer – usually given as one word or as a pointing gesture. Related to this limitation was the emphasis on 'what is' and the perception of what was possible as involving the 'possible-real'. Thus, classroom teaching and learning in the subjects' schooling context did not foster considerations and discussions of possible states of affairs and knowledge as a property of the mind or rational enquiry (see Muthivhi, 2008a and 2008b). The subjects' experience involved the acquisition of factual knowledge in its ready-made form, not open to further

interrogation and modification. Learners responded to teachers' questions in one word or a short phrase and were never asked to explain their answers. Learning did not emphasise a genuine process of thinking and enquiring about the possibilities regarding the objects of knowing. As a result, such modes of engagement, which were dominant in the subjects' formal schooling, were likely to constrain their performance on experimental tasks that required the application of precisely those categories.

Commonalities in Piaget and Vygotsky's theories

The development of more adequate conceptual systems for a better understanding of classroom processes of teaching and learning and their consequences for learner development through a consideration of cognitive functioning and problem solving modes in experimental situations is pertinent for contemporary, post-apartheid South African education, especially as we seek to understand more effective ways of improving learners' performance and learning experience. The Piagetian and the Vygotskian conceptual frameworks respectively offer a possibility for a comprehensive understanding of the processes of concept learning and development as derived simultaneously from pupils' own activity and the activity of their society and culture.

The Vygotskian view of culture relates to the concrete practices of people and may be applied both to spontaneous, everyday contexts and to the formal school context of learning and development. Culture is "the product of social life and human social activity" (Vygotsky, 1981, p.164). It "creates special forms of behaviour, changes the functioning of mind and constructs new stories in the developing system of human behaviour (Vygotsky, 1981, p.29). The formal practices of classroom teaching and learning, for example, can be viewed as constituting a form of cultural practice of their own which differs from those of the every day, spontaneous contexts of learning and development. Therefore, all everyday spontaneous situations of learning and development would manifest common characteristics that make them essentially the same, irrespective of the specific cultural traditions in which they are manifest. This sets the spontaneous, everyday contexts of learning apart from the formal, school-specific contexts of learning and development (Kozulin, 2003, p.1990). On the other hand, school knowledge and learning, according to this view, would also reveal qualities that separate them qualitatively from the forms of learning and development that characterise non-school, everyday situations.

Vygotsky (1978) argued that learning, as it happens during the child's pre-school years, is qualitatively different from the learning that occurs during formal schooling, which is concerned with learning the fundamentals of scientific knowledge. The introduction of the scientific form of knowledge to children, and the associated methods of its acquisition creates, in learners, new zones of proximal development (Vygotsky, 1978). Thus, learning formal knowledge in school changes the course of development and creates new developmental pathways, which might not occur otherwise. By 'scientific concepts' or 'scientific knowledge' Vygotsky does not only mean knowledge of the natural science disciplines but also of the humanities, languages and arts. This form of knowledge is characterised by its systematicity, abstractness and generalisability (Vygotsky, 1978; 1986). This form of knowledge could be defined as constituting the highest form of 'artificial' human thinking, a deliberate creation by man to master his own world through his or her thought processes.

Piaget avoided questions about the social and cultural contexts of learning. He considered that these were at a different analytic level to the genesis of 'true forms' of thought processes that are unencumbered by the 'authoritarian' adult forms of knowledge and social relations (Anne-Nelly Perret-Clermont, 1997). The social forms of the development of knowledge were of interest only where such forms of knowledge pertained to the development of scientific knowledge through symmetrical, peer interaction, which does not include adult-child relations. Therefore, Vygotsky's framework could be viewed as elaborating on the social aspect of knowledge development, to uncover the specific conditions of the asymmetrical adult-child and peer relations (within specific socio-institutional contexts like formal schooling) in which development takes place. This context of development was posited in Piaget's theory mainly where it involved symmetrical peer relations, probably as it was not deemed to be possible in then, early and mid 19th century educational settings (Duveen, 1997).

For Vygotsky, there are always conditions under which developmental processes would be activated. For example, the mediation (and internalisation) of the knowledge of objects does not occur in isolation of the knowledge of their social uses. As Karpov has argued, object-centred activity deals with:

> [. . .] children's manipulations of objects in accordance with their social meanings and includes, but is not limited to, children's play with toys. As opposed to physical characteristics of objects, their social meanings are not 'written' [. . .] on objects and, therefore, cannot be discovered by children independently. For example, children could

> discover by themselves that banging a spoon on the table will produce a sound, but they would not be able to discover without adult mediation how to use the spoon for eating (Karpov, 2003, p.144).

This example of the social structuration of the knowledge of objects is particularly relevant for elaborating Piaget's concern with the emergence of logico-mathematical form of knowledge as a product of the subject's actions on the world. The importance of considering the subject's discoveries as involving prior activities of society and culture is highlighted by Bryant's (1997) observation about the number concept as a product of prior human social activity. Bryant (1997, p.140) reports on studies that support the importance of cultural structuration of the number system, serving to improve intellectual power and to transform intellectual processes. Bryant argues that the decade structure of the modern number system makes it possible to count generatively, enabling the generation of successive numbers on the basis of the knowledge of the structure of 10s, 20s, 30, 100s, etc. Bryant argues that this decade structure is a cultural invention that cannot be learnt 'spontaneously'; is handed on from generation to generation and therefore serves as a cultural tool. Bryant further reports on Miller and Stigler's (1987) study that found that the Taiwanese children performed better on counting than their American counterparts owing to the cultural-linguistic structuration of their experience of the number system.

While Piaget's apparently inadequate treatment of the socio-cultural factors underlying individual activity would benefit from such an elaboration, Vygotsky's seemingly inadequate treatment of the internal, self-regulatory processes implied by his notion of 'internalisation' would similarly benefit from Piaget's in depth treatment of the internal regulatory processes. For example, Vygotsky's (1978) description of the mechanism through which a reflex, motor movement is transformed through the 'internalisation' of social-relational processes into a socially mediated function for pointing at objects, i.e. the pointing gesture, does not clearly account for the internal regulatory processes that lead to the eventual developmental achievement. There is therefore, from the perspective of the current synthetic approach, a conflict that arises when the internal, individual processes come into contact with the external, contextual and socio-culturally patterned processes. The question becomes how this conflict, from the perspective of the developing subject, is to be overcome. That is, whether it is through the actions of the subject in isolation or whether it is by the joint activity of the individual and society or socially mediated individual actions?

The interpretation of the experimental task performance presented in this paper is informed by these conceptual frameworks, and aims to illustrate the theoretical assumption of the primacy of the individual in the development of knowledge, without reducing the process to *solo* activity by and of the individual. In this way, the contribution of societal and cultural processes in determining, and indeed, co-determining, the subjects' cognitive actions regarding their responses to the experimental task questions becomes explicable. This approach makes possible the assumption about culture and society as never superseding the individual, and the individual as not entirely isolated from his or her sociocultural milieu but not reducible to it. This position informs the view of the concept of 'possibility' as constitutive of both the internal, individual and external, socio-cultural modes. The development of this concept is viewed as proceeding, both from the internal individual self-regulatory processes and from the external, socio-cultural processes characteristic of formal schooling.

'Possibility' as an 'everyday' and as a 'school-formal' concept

The notion of 'possibility' as a psychological category arising out of the formal operational state involving the ability for hypothesising could be related to two distinct developmental 'levels'; the 'spontaneous, everyday, natural, elementary' form, and the formal, abstract-conceptual and theoretical form (Vygotsky, 1986; 1987; Kozulin, 1990; 2003). The former is linked closely to the perceptual processes of the child and arises from the direct relationship the child has with the world, while the later arises from the systematically 'mediated' experience of formal school learning in which the child has no direct relationship with its world of experience. This characterisation of the two distinct forms of conceptual relations is crucial as it sets apart the qualitatively distinct processes of learning and knowledge acquisition pertaining to everyday learning situations on the one hand and to formal school learning situations on the other hand. The formal-abstract aspect of the concept of 'possibility' arises from the sociocultural practices of formal schooling and other related institutional practices of industrialised societies (cf. Tulviste, 1991).

At the level of the everyday, spontaneous learning and developmental context, the notion of what is 'possible' would be closely linked to the 'real', what *can* be done. This notion is qualitatively different from the notion of 'the possible'

as involving an abstract, hypothetical and indeterminate situation or as a category embedded in language-based conceptualisation of the world that formal school knowledge and forms of knowing is primarily concerned with. The possible, as 'the real', the 'can do' or the 'possible-real', that characterises the learning and developmental 'culture' of the spontaneous, everyday life is embedded in the concrete manifestation of phenomena to which it refers. In its manifestation in formal school knowledge and forms of learning, the notion of 'the possible' is embedded in language rather than in the concrete contexts of its application and proceeds from the conceptualisation of an idea involving 'either-or' situations, which is essentially a category of the mind rather than a quality of its referents in the concrete situation of knowledge application.

The notion of the possible that is closely linked to the real and concrete manifestation of objects and experiential world that dominates spontaneous, everyday situations of learning and development is consistent with Piaget's notion of concrete thought processes. Concrete operational thought is tied to the concrete manifestation of phenomena (Piaget, 1964; 1981). Shayer (1997) reports on an international survey of five- to eleven-year-old children, which found that only the top 20 per cent of the children developed as Piaget's theory had described. That is, they attained concrete operations by seven to eight years old and formal operations by eleven to twelve years of age:

> Children below average have not completed the concrete operations stage by the time they reach adolescence, and complete it only by the end of adolescence. This is part of the basis of the claim that Piaget had correctly described the genetic programme – realized in full only by 10 per cent of the population, and in part by a further 20 per cent – but not the general human condition (Shayer, 1997, p.36).

Shayer's observation is consistent with the view that formal operational processes that enable thought to proceed exclusively from its formal, context-free basis is a special human achievement mediated, in particular, through the processes of formal schooling.

Therefore, subjects who may fail to manifest formal operational thought in specific task situations may not necessarily lack the underlying capacity, the "genetic potential for cognitive development" (Shayer, 1997, p.38) to think in that particular way. The apparent lack may result from the fact that such modes of thinking and problem solving are not emphasised in the activities that dominate their learning and development and hence not elaborated to constitute the subjects' consciously available cognitive capacities and problem solving skills. The present study examined the task performance of subjects within a schooling system whose practices of teaching and learning, due to the

specific socio-political conditions of the apartheid schooling in South Africa, has not fully developed formal operational, abstract-theoretical and conceptual modes of task engagement on the part of its learners. As a result, these subjects manifested an apparent lack of confidence and full mastery of the formal operational rule-based, abstract categories that are not reliant on the concrete manifestations of phenomena in their engagement with the experimental task questions.

Conclusion

Piaget's framework emphasises the internal structuration of thought driven by the subject's own activity in the world of her experience (Piaget, 1981; 1964). The subject's activity is motivated by the need to adapt to the external constraints presented by the subject's environment. This results in the internal self-regulatory process of equilibration that produces structural transformation from qualitatively lower to qualitatively higher forms of thinking, with the acquisition of formal operational thought as the pinnacle of development. Development is hierarchical, proceeding from the pre-operational stages where the basic structural foundations are established. The preoperational child (before the age of seven) from the Piagetian perspective is more likely to explain situations on the basis of the characteristics of their configurations rather than on the basis of their transformations or changes leading from one situation to the other. Cognition, at this stage, is still bound up with concrete reality or what events and situations actually look like.

According to Piaget (1964; 1981), concrete operational thought (around 7–11 years-of-age) is characterised by the extension of actual or concrete reality, towards the direction of the potential, or the possible. It is at this stage that the child begins to think in terms of what is possible and proceeds by formulating hypotheses about possible states, instead of thinking exclusively in terms of his perceptions of concrete situations. At about 11 years-of-age, children have developed capacities for formal-operational thinking enabling them to think from what is possible to what is empirically real. Instead of deriving the conclusion about what is possible directly from the empirical data and concrete states, the formal operational child begins with the postulation that certain relations are necessary (Le Bonniec, 1980).

The Vygotskian perspective emphasises the underlying sociocultural context which structures both the social and the natural environment within which the

subject interacts. The activities of society and culture are considered to be prior to that of the individual, although not replacing it. The individual internalises or actively transforms sociocultural processes into personal, intra-psychological processes. This framework has the potential of providing a clearer explication of the social and cultural processes that underlie individual activity in its objective world, and hence of elaborating on the external, sociocultural aspect of the internal, endogenous equilibratory processes Piaget has so exquisitely explicated.

The subjects in the current study manifest the spontaneous developmental achievement of the formal operational thought posited in Piaget's theory while simultaneously manifesting processes that are tied to the concrete manifestation of the task materials and a perception of the possible as the 'possible-real'. The sociocultural structuration of the subjects' developmental learning in their specific tradition of schooling largely accounts for the lack of a consistent application of the formal operational processes in the subjects' responses to the task questions. A tradition of schooling or cultural-institutional context of learning and development that does not foster critical and genuinely inquisitive engagement with knowledge is not likely to generate processes that elaborate on the formal operational thought processes posited by Piaget. This, therefore makes consideration of the sociocultural processes of schooling crucial as constitutive of the mechanisms that generate, and elaborate on, the formal operational thought processes during the subjects' learning and development. The integration of Piagetian and Vygotskian conceptual systems enable a comprehensive understanding of the mechanisms that generate, and elaborate on, development as simultaneously constituted within both the internal, intra-subjective and the external, inter-subjective processes that are not reducible one to the other (cf. Wertsch, 1995; 1993).

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Azwihangwisi Muthivhi
School of Education
University of Cape Town

azwihangwisi.muthivhi@uct.ac.za

Yvonne Broom
Department of Psychology
School of Human and Community Development
Wits

yvonne.broom@wits.ac.za

Grappling with change: case studies from the rural education project

Susan Meyer and Cally Kühne

Abstract

This article reports on research in progress as part of the Rural Education Project (REP), a partnership initiative of the University of Cape Town and the Western Cape Education Department (WCED). The project employs a range of intervention strategies to strengthen literacy and numeracy in 38 rural schools. A major feature of the policy context in which this development work is undertaken is the WCED's strategy to assess learner performance in literacy and numeracy in all primary schools in Grade 3 and 6 in alternate years. This Diagnostic Assessment strategy, which was introduced in 2002, is a source of significant accountability pressure on schools and educators throughout the system.

Using a case study methodology, the article describes and explores the responses and practices of schools and teachers associated with significant improvements in learners' results, and with stagnant or declining levels of learner performance, as measured on the WCED Diagnostic Tests. The data and analysis covers teachers' classroom practices, curriculum management in the schools and external sources of support available to educators in rural contexts that are characterised by geographic isolation and the many social problems typically associated with poverty.

Introduction

In recent years several international assessments and the Department of Education's Systemic Evaluation have shown that the majority of learners in South Africa's public primary schools fail to attain basic literacy and numeracy competencies, especially in rural and disadvantaged areas. These studies demonstrate low achievement levels in, *inter alia,* Language, Mathematics and Science (Soudien, 2007; Christie, 2008) and indicate that, on average, learners leaving primary school lag three grade levels behind their peers in other countries. Only about a third of learners can read independently in the language of learning and teaching (LOLT) and fewer attain required grade level in Mathematics. Several African countries perform better than South Africa in Language and Mathematics, despite spending less on their education systems (Van der Berg, 2005). These studies have also confirmed that learners in urban schools, particularly those serving middle and upper

class communities, perform better than those in schools that serve poor and/or rural communities.

The DoE and provincial education departments have introduced several policy initiatives to improve curriculum delivery in the public school system. These include support for teachers with implementing the National Curriculum Statement (Department of Education, 2002a), the Whole-School Evaluation component of the Integrated Quality Management System (Department of Education, 2002b) and the Foundations for Learning Campaign (Department of Education, 2008).

In 2002 the Western Cape Education Department (WCED) introduced diagnostic testing to monitor learner performance in primary schools, and to assist schools to identify and thereafter address their areas of weakness. Grade 3 and 6 learners in public primary schools write standardised literacy and numeracy tests in alternate years. The schools receive the results in the first half of the following year. These comprise tables that detail the learners' performance in relation to the provincial, district and circuit averages, and breakdowns by grade level, learning outcomes and literacy and numeracy skills. The Diagnostic Test results place significant accountability pressure on schools, teachers and officials in the Western Cape.

This paper explores practices associated with improvement or deterioration in the results of the WCED Diagnostic Tests at two rural schools. It forms part of the Rural Education Project (REP),[1] which aims to identify factors that impact on literacy and numeracy, and develop intervention strategies in 38 rural schools. The overall aim of REP is to contribute to systemic reform, while supporting rural schools to implement education policies.

Research method

We used a case study approach because it allowed us to examine "a wide sweep of contexts: temporal and spatial, historical, political, economic, cultural, social and personal" (Stake, 1995, p.43). This breadth of scope, and the freedom to combine different methodologies, resonates with REP's

[1] REP is a collaborative research and development project involving the University of Cape Town's Schools Development Unit (School of Education), the WCED and donors (the Claude Leon Foundation and the Foschini Group).

holistic approach to school and teacher development. Specialists in research methods remind us that qualitative research should aim at transferability rather than generalisability of findings (Babbie and Mouton, 2006; Guba and Lincoln, 1994; Tellis, 1997). Whereas quantitative research allows for generalisation from samples to populations, qualitative research findings serve to inform theory. This places the onus on the reader to decide whether or not the results are applicable in other similar contexts, through their own evaluation of similarities and differences in contexts.

We employed two strategies to promote the transferability of the findings of this study. The first is 'thick description' of the contexts and teachers' responses to national and provincial policy directives at the two schools. The second is purposive sampling. The two schools in this study were selected because they demonstrated different responses to policy directives. They also have different contexts, despite the fact that they are both rural schools that serve poor communities.

Triangulation was used to boost the credibility and dependability of the research. We used multiple data sources, including internal and external researchers' records and interpretations of the schools' work in numeracy and literacy, observations, interviews and questionnaires (direct self-reporting by schools). The data was collected over two years, which allowed for the collection of sufficient data, the clarification of any issues that were unclear and resolution of any apparent contradictions in the data. To ensure respondent validation, the schools were afforded the opportunity to comment on and adjust where necessary, draft research reports.

The case studies are exploratory in nature. Although we interpret and analyse the data collected in the two schools, the aim is not to determine cause-and-effect relationships between variables. We mostly used content analysis to identify and interpret patterns and/or categories in the data that relate to teachers' actions, and their perceptions of their own practice and broader policy context.

Conceptual framework

To guide our thinking about the ways in which two schools are grappling with external pressure to improve learners' academic performance, we drew on theoretical and conceptual work in the fields of school effectiveness and

school improvement from the United States of America and developing countries, including South Africa (Fuller, 1991; Harber and Davies, 2003; Soudien, 2007; Christie, 2008).

Schools as bureaucratic facades

Soudien (2007) argues that many South African schools "are schools in form only, but not so in substance" (p.191). This point derives from Harber and Davies' (2002), and ultimately from Fuller's (1991) theory of 'fragile states', which he defines as states that have limited legitimacy, and limited institutional capacity to ensure effective service delivery and implementation of policies.

To achieve legitimacy, fragile states need to convince their population that they are progressing towards modernity and better standards of living for all, but because their economies of these countries are typically underdeveloped, employment is often high. This creates a dilemma for schools. Despite being the State's main vehicles to demonstrate development and progress, they must not graduate too many learners. Thus, inefficiency in the school system is not only tolerated but also encouraged. Typically, schools in fragile states present a bureaucratic façade as efficient, modern institutions but in reality they largely fail to fulfil their core functions of establishing numeracy and literacy and preparing learners for the world of work. Harber and Davies (2003) suggest that such failure is often deliberate, as the *status quo* serves some role-players' interests. For example, teachers who moonlight or run their own businesses may resist measures to make their schools more effective because this would entail greater demands on their time. Thus, it is unlikely that managerial interventions and increased external accountability will resolve the complex set of interacting variables that render black schools ineffective (Soudien, 2007). Soudien (2007, p.191) argues there are "deep syndromes of disaffection" among teachers, which he ascribes to the legacy of apartheid, where black teachers were systematically under prepared and underpaid. Furthermore the struggle against apartheid bred "anti-authority and anti-regulation habits" which became entrenched in school cultures.

Schools as authoritarian bureaucracies

Harber and Davies (2002) argue that many schools in developing countries are inefficient 'authoritarian bureaucracies'. They point out that mass schooling originated in industrialised countries during a time when bureaucracy was the prevailing form of socio-political organisation. Weber (1922) observed that bureaucracy is inherently hierarchical and authoritarian. Harber and Davies (2002) comment that authoritarianism inherent in bureaucracy is predominant when schools struggle to cope with socio-political and educational demands; schools in developing countries strive to achieve the efficiency that bureaucratic organisation promises, but often with limited success. The common tendency is for schools to compensate for their inefficiency by becoming authoritarian. In such situations principals and officials emphasise control and order, in an attempt to enforce minimum standards of curriculum delivery, or simply to present the image of an orderly learning environment. Teachers and learners receive imperatives from 'above' and are expected to act upon these unquestioningly. According to Harber and Davies (2002), learners and teachers are discouraged from taking the initiative, and because teachers are excluded from management decisions, divisions develop between school managers and teachers, which results in resistance to initiatives by management to improve the school.

Powerful teaching

Christie (2008) and Soudien (2007) argue that interventions to improve the quality of education in schools that serve poor communities should be informed by an understanding of the social context and policies that frame learners' and teachers' work. Soudien places the emphasis on sociological analysis and understanding the culture of schools, whereas Christie directs our attention back to the central task of schools – teaching and learning. Christie argues that 'powerful teaching' should lie at the heart of efforts to improve quality and make schooling in South Africa more equitable. She suggests that 'powerful teaching' could encompass a range of pedagogical practices, including direct instruction and activity- or discovery-based methods. The point is that teachers should select curriculum content and teach in ways that ensure the material and learning experiences are *meaningful* to all learners. Christie acknowledges that this requires a great deal from teachers, especially in terms of their subject knowledge and pedagogical skills.

Stable and functioning schools

Christie (2008) points out that powerful classroom practices can only be sustained in "stable and functioning schools", which "provide the conditions under which teachers can be motivated to do their work well, and be held accountable for doing so" (p.203). Such schools have adequate resources and learning materials, and provide safe and secure learning environments and predictable routines of learning. They also have effective management and leadership, structures to ensure time on task, good governance and relationships with outside agencies who can contribute additional resources and influences.

Case studies of two schools

School A

This intermediate school is located in a sub-economic settlement 12 kilometres from a minor rural town. It occupies a modern brick building which is well maintained and in a good condition. REP education specialists comment on the school's impressive foyer with striking paintings and photos of learners' past achievements against the walls. The principal has a spacious, well-equipped office and the school administration appears very well organised. Trees surround the front of the school grounds and there is a well-kept flower garden. The grounds are spacious and there is ample space for learners to play. The school has a fully resourced Khanya laboratory,[2] which is used to teach learners computer literacy. The principal reports that some of the school's teachers have written an international computer examination. Teachers have also established an e-mail communication link between learners of their school and a school in the Netherlands.

All the teachers commute daily from various towns in the region, some as far as 50 kilometres away. REP education specialists observe that the principal is very dedicated and with hard work he has gained the confidence of the community and most of the teachers. They also mention that there is some evidence of past conflict among staff and teachers still do not appear to cooperate fully as a team.

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[2] Khanya is the WCED's programme to equip schools with computer laboratories and support their use in curriculum delivery.

According to the principal, 95 per cent of the school's learners come from 65 farms in the area. The WCED subsidises bus transport for those who live more than five kilometres away. Parents who are employed work as farm labourers and seasonal labourers. According to teachers seasonal migration affects a considerable number of learners. Some learners who leave the school between harvest seasons return after a time; others drop out of the school system. Those who return have to 'catch up' because of individual school differences. The principal reports that socio-economic conditions are poor on most farms and only a handful of farmers take an interest in uplifting the conditions of their workers. Housing is a huge problem as people do not own their homes and once they leave the farms to work elsewhere, or if they fall ill and cannot work, they lose their homes. The principal claims that unfair dismissals from work and unfair evictions from homes occur regularly. He works with a trust that aims to provide housing to farm workers, which they can own, so that they would not be solely dependent on the farmers.

Table 1: General information about School A

Distance from Cape Town	130 km	
Distance from nearest town	12 km	
Distance from district office	64 km	
Distance from other schools in cluster	12–78 km	
Facilities in vicinity	Municipal library	x
	Clinic	x
	Crèche	x
	Sports grounds	x
Enrolment, 2008	780	
Grades offered	Grade R – 9	
Learners' home languages	Afrikaans (90%) Xhosa (10%)	
Language of learning and teaching	Afrikaans	
Community poverty ranking	0.83, poorest quintile	
Article 21	Yes	
School fees	No-fee school	
Total number of teachers	22	
School Governing Body posts	2	
Number of instruction rooms	35	
School library	Yes	

Teachers point out that parents are dispersed across various farms in the area, so the school is not located in an immediate community. This makes interaction between people difficult and parental participation is poor. The governing body exists, but according to the principal it does not function properly because most members lack the necessary skills and confidence to participate in meetings. He reports that he mostly has to take the lead, and many decisions are left up to the teachers. Teachers comment that alcohol and drug abuse is common in the community and influences the lives of the learners negatively. The school hosts an Adult Basic Education and Training service provider who offers classes two evenings per week to develop parents' literacy levels.

In 2007 the school became a no-fee school. The principal reports that special events such as concerts, song evenings, sports days, dances and barbecues are also organised to raise funds. He complains that support from farmers and a local business is limited. Sports like rugby, netball and mini-cricket are played at the school.

Curriculum implementation

According to teachers and the School Management Team (SMT), the school has adequate teaching and learning resources. However SMT members note that teachers are not making optimal use of the resources they have available, while requesting new resources. There is sufficient Afrikaans resource material for all the learners and they have a school library. SMT members mention that the school would like to acquire more enrichment programmes and additional resources, but these are mostly available in English.

One post-level 1 teacher has been nominated as co-ordinator for each phase to assist the SMT in co-ordinating specific curriculum aspects. The principal mentioned that he has been advocating the establishment of an Agri-village in the area, so that agriculture can become part of the school curriculum. REP education specialists report that the Foundation Phase teachers make an effort to ensure their classes are conducive for learning, with teaching and learning resources and learners' work on display. They observe that classrooms are spacious and neat and there is enough storage space. They also report that various apparatus and learning materials are available for both Mathematics and literacy.

The school does not have a strategy to deal with Xhosa mother tongue learners who are not conversant with Afrikaans, the language of learning and teaching at the school. Teachers attempt to deal with this issue by matching an Afrikaans-speaking learner with a Xhosa-speaking learner to assist with translations in the classroom. The learning support teacher and the Teaching Support Team assist learners in all the learning areas and two teachers at the school who are conversant in Xhosa are able to help teachers, where necessary.

When new learners are admitted to the school they undergo a baseline assessment to establish their literacy and numeracy abilities. Learners are generally asked to read a text, which enables the teacher to assess their reading levels for the grade they enter. When new learners are admitted in the Senior Phase and they do not understand Afrikaans they are assessed in English. The school does not have any other diagnostic method or instrument to assess the language and mathematical proficiency of learners.

Teachers complain that the school has many policies and strategies 'on paper', which are not implemented because the principal only monitors curriculum implementation before a visit by the Circuit Support Team or when there is a serious complaint from parents.

According to teachers the school receives reasonable support from the district, but more sustained support and guidance would be welcome for curriculum implementation for the Intermediate and Senior phases. Curriculum advisors normally visit the school twice a year in connection with the Integrated Quality Management System and learner progressions. One curriculum advisor has offered extra assistance with planning learning programmes. He also motivates teachers to exchange ideas about lesson planning.

REP support

When REP education specialists started to work with the school in 2006, teachers acknowledged that the school's Diagnostic Test results are very poor and that a serious effort is required to improve literacy and numeracy, so the Foundation Phase teachers had started to work more closely with well-performing schools in nearby towns.

REP's intervention strategy at this school has focused on supporting curriculum management as part of whole school improvement. The principal

and SMT introduced a curriculum monitoring programme in 2006, which consists of a quarterly feedback system. Teachers have to apply a self-monitoring instrument, which the phase Head of Department (HOD) monitors. The phase HOD then reports to the SMT. But according to teachers the curriculum monitoring programme 'only exists on paper' and has not been implemented due to insufficient planning and follow-up. Dates were set during 2006 for the quarterly monitoring system, which were not honoured. Another difficulty was that the national assessment criteria were not used in the monitoring of assessment tasks, which further complicated the system. Now, they say, there is more direction, but the SMT does not monitor all learners' assessment tasks and learner performance. SMT members report, however, that they help teachers to reflect on learner achievement by leading a process at the end of every examination (in June and November) where the results are put on a spreadsheet and discussed.

The REP education specialists conduct training and mentoring sessions for the SMT members to assist them with managing and supporting their various subject departments. The curriculum coordinator is responsible for curriculum management at the grade and phase levels, and teachers complete quarterly curriculum plans and hand in daily planning schedules every Friday.

The specific focus of the school's literacy and numeracy strategy is to ensure that teachers use the daily literacy half-hour optimally. The SMT claims to be monitoring this aspect, with the support of the REP education specialist. The teachers say that they have not received any support from the SMT in the teaching of numeracy and literacy. REP education specialists offered demonstration lessons to introduce teachers to new techniques, for example new ways to teach the alphabet, using colours to teach adjectives and encouraging learners to use the dictionary to check their spelling. Teachers were also shown how to use group work more effectively. They report that they are more aware of their practice and the role they play in literacy and numeracy.

In Mathematics REP has provided a greater variety of teaching resources, which teachers say they do not have the time to implement, such as games to teach Mathematics. In the school-focused support programme that accompanies the ACE, teachers were assisted with developing learning programmes and were given examples on how to use teaching and learning resources in the learning programme. But teachers complain that key teachers (ACE students) have not shared this with other staff members. The two key teachers welcomed the resources and examples of worksheets that they were

given, but say they would have wanted more resources and completed learning programmes.

Nineteen of the school's 22 teachers attended two of the four REP cluster meetings in 2007 and two of the three cluster meetings that have been held so far in 2008. Teachers and SMT members complain that the long distances they have to travel after school to attend cluster meetings is demotivating. But they acknowledge that the cluster meetings do offer opportunities for teachers to share ideas with other schools.

The school's response to the 2007 Grade 6 diagnostic test results

Figure 1 shows the pass rates that School A's learners attained in the six rounds of WCED Diagnostic Tests, compared to those of the province. In 2007 the school won the Foschini award (a jungle gym) for the REP school in the district whose Grade 3 results showed the greatest improvement in the 2006 round of Diagnostic Tests. By comparison the 2007 Grade 6 results were disappointing. The principal ascribes the school's poor performance in the Intermediate Phase to the following factors:

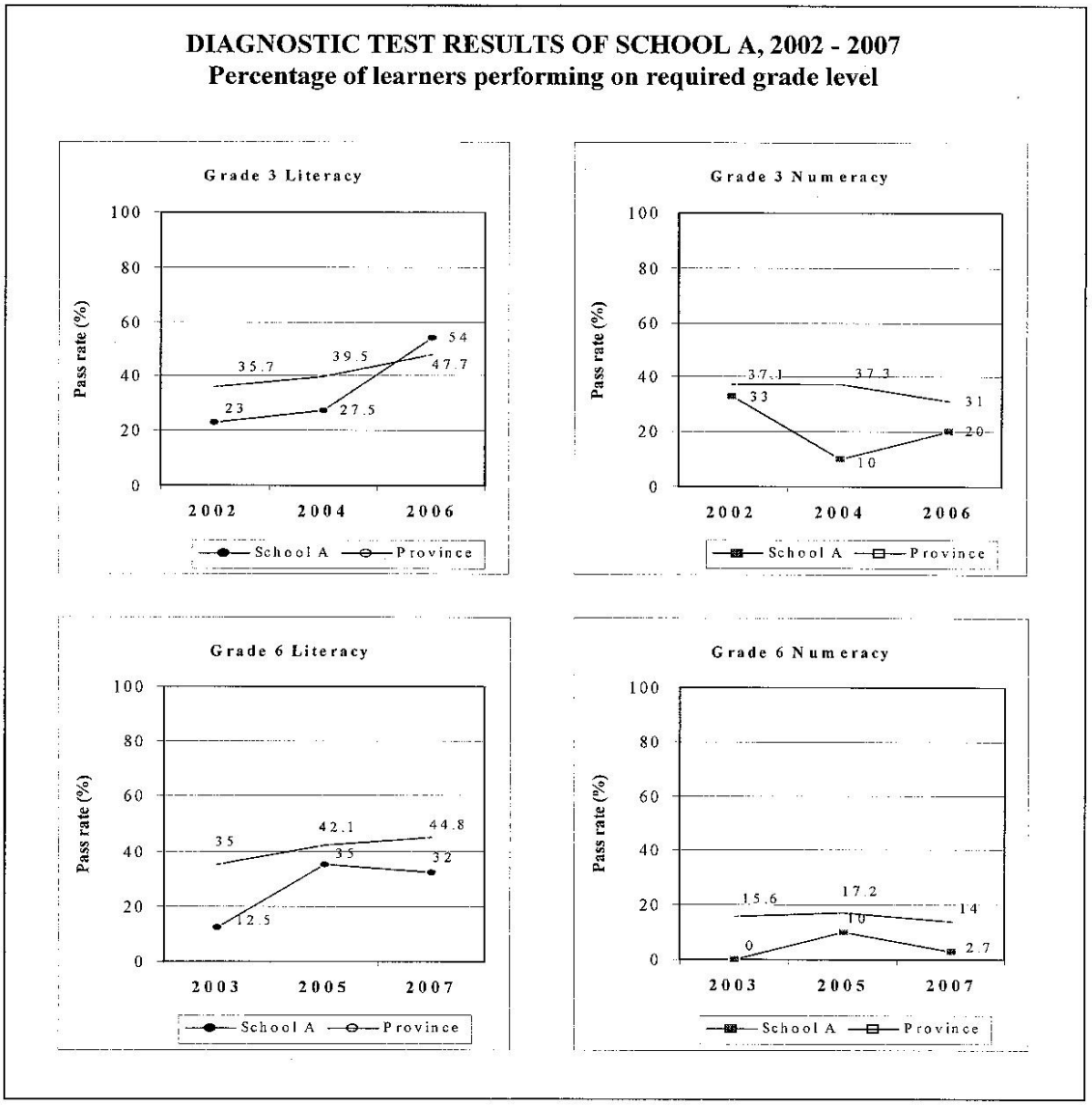
Teachers are still not utilising the literacy half-hour effectively;

- Insufficient monitoring by phase heads, HODs and the curriculum co-ordinator;
- Low morale and poor work ethic of teachers;
- Irregular application of different assessment techniques;
- Lack of parental involvement to support learners' school work; and
- Lack of sustained support from curriculum advisors.

Looking to the future

To help the school address its challenges, teachers have asked for REP to provide continued support with diagnosing learners' literacy and numeracy levels and additional teaching resources. The two key teachers have also asked for guidance on ways to disseminate the knowledge they have acquired on the ACE programme in order to support the SMT's efforts to improve curriculum delivery. Teachers also mentioned that they need support in all the learning areas, not only literacy and numeracy.

Figure 1: Diagnostic test results of School A, 2002–2007
Percentage of learners performing on required grade level



School B

This small school is located in a remote settlement, 27 kilometres from a small rural town. Missionaries established the school 123 years ago. The historic town is a big tourist attraction and boasts an impressive rugby stadium that was built by the Department of Sports. The school consists of a wooden building, three pre-fabricated classrooms and two brick buildings. Built-in cupboards were installed in classrooms and the principal's office at the school's own expense. One room was divided to accommodate the principal's office and the computer laboratory. There is also a fully equipped kitchen. The school grounds include a rugby field, a beautiful flower garden and a large vegetable plot.

Table 1: General information about School B

Distance from Cape Town	450 km	
Distance from nearest town	27 km	
Distance from district office	50 km	
Distance from other schools in cluster	47–67 km	
Facilities in vicinity	Municipal library	x
	Clinic	x
	Crèche	✓
	Sports grounds	✓
Enrolment, 2008	159	
Grades offered	Grade R – 7	
Learners' home language	Afrikaans (90%)	
Language of learning and teaching	Afrikaans	
Community poverty ranking	0.94, poorest quintile	
Article 21	No	
School fees	No-fee school	
Total number of teachers	5	
School Governing Body posts	0	
Number of instruction rooms	9	
School library	No	

Although there is no library in the vicinity and the school does not have a library, each class has a bookshelf with books. The WCED's Khanya project installed a fully equipped computer laboratory at the school in 2007.

Because the staff is so small, there is no SMT. The principal started teaching at the school in 1997 and he was appointed in his current position in 2005. He was formerly a learner at the school, as were the other teachers. All the teachers live in the local community. According to the principal teachers are fully involved in decision-making, although he regards himself as the manager. Teachers emphasise that there is no place for gossiping or discord among staff members; because they are so few they have to work together. They also report that they do not experience disciplinary problems amongst learners.

The learners' parents are bricklayers, municipality workers and homemakers. Educators report that about 10 per cent of the learners live on farms around the town and have to walk distances of at least 2½ km to school. During the rainy season these learners are often absent. The community has an average standard of living, however, there is alcohol abuse and several shebeens exist in the town. High school learners abuse alcohol and drugs. Teenage pregnancy occurs often and many learners are from single parent homes. This is a no-fee school. Fundraising functions include sports days, music evenings, bazaars, braais and weekly food sales. Learners participate in rugby, netball, athletics and mini-cricket.

According to educators the community is very close-knit and there are about 20 parent volunteers upon whom the school can call when the need arises, including a retired teacher. The school organises a formal thanksgiving lunch once a term for the parents who assist with functions and supervising classes. Teachers prepare the lunch and the venue is prepared in the style of a formal restaurant.

Curriculum implementation

REP education specialists observe that the school's classrooms are spacious with old desks arranged in groups. Teaching and learning aids are displayed on the walls and learning resources and apparatus that have been supplied by the WCED are very much in evidence. The classrooms reflect a learner-friendly atmosphere, conducive to teaching and learning.

One of the school's teachers has not been trained in the National Curriculum Statement, but teachers have attended literacy and numeracy courses at the Cape Teaching and Leadership Institute to update their subject knowledge and

teaching methods. Some teachers say curriculum planning is being done per phase, but others disagree and say teachers plan only for individual grades.

This school participated in the Multi-grade Initiative of the WCED, which ended in 2006. Grades 4 and 5 and Grades 6 and 7 are taught in combined classes. The general view among teachers is that it is not desirable to have multi-grade classes in the Foundation Phase. They explain that it is very difficult to combine Grades 1 and 2. To boost the school's performance in the Diagnostic Tests they have also decided to keep Grade 3 as a mono-grade class.

In the middle of 2008 one teacher, who used to commute daily from the nearest large town 67 kilometres away, transferred to a school in town. The principal negotiated with the experienced Grade 4 and 5 teacher to move to the Foundation Phase and recruited a teacher from the local community to fill the vacant post. The new teacher reported to REP that the previous teacher passed her planning documents and other materials on to him, so he was able to continue teaching the class where she had left off with minimal disruption. But the former Grade 4 and 5 teacher subsequently reported to REP that the new teacher discarded all her planning documents, because he teaches from a set of commercially produced curriculum materials that covers all learning areas.

The principal asserts that the school receives good support from the district. The advisor responsible for specialised learner and educator support visited the school regularly to assist teachers with aspects such as curriculum planning.[3] She also participated in REP meetings with the staff, as well as cluster meetings. Interviews with district officials confirmed that the school's teachers regularly attend district training sessions and workshops in a cluster of schools. The school also collaborates with three other primary schools in the region. Teachers report that they receive ongoing support from a psychologist who retired from the district office in 2006. He assists with the implementation of diagnostic and remedial strategies to improve literacy and numeracy.

REP education specialists note that the following priorities are addressed in the school's literacy and numeracy strategies:

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[3] As a consequence of restructuring district offices, this advisor was redeployed to another circuit in the third quarter of 2008.

- Before and after school hours, teachers offer remedial support to learners who struggle with reading barriers.
- Teachers teach and reinforce the most commonly used 1000 words in all grades.
- Learners also have a daily mental maths period, which was introduced as part of the Multi-grade Initiative.
- Another component of the Multi-grade Initiative that teachers still use is a commercial programme to help learners master early reading skills by developing their micro- and macro-motor skills.
- The Foundation Phase key teachers report that they are experimenting with mediative teaching strategies to promote effective learner involvement and independent thinking and reasoning.

The principal and teachers admit that they use informal systems to monitor curriculum delivery. They don't use the Computer-Assisted Mathematics Instruction software supplied by the Department for diagnostic purposes. The teacher who left in the middle of 2008 reportedly had some expertise in this area, but did not pass this knowledge on to her colleagues. All teachers use the software to capture learners' scores on assessment tasks, but they don't use it further to discuss and analyse the results.

REP support

When REP started to work with the school in 2006, the teachers indicated that they would like to expose learners to more number work, and boost the development of number concept, reading, spelling, vocabulary extension and creative writing skills. REP education specialists report that this is the only school out of the 38 project schools that are participating in the project, where teachers expressed a need to address learners' risk taking and problem solving skills.

Teachers claim that they discuss the Diagnostic Test results every year, compare them with previous results and design programmes to address the weaknesses. They have discovered that most of the Grade 6 learners cannot read. But they had not engaged systematically with the analytical feedback provided by the WCED and they were not satisfied that their analysis and understanding of the test results was thorough enough, so at the beginning of

the project they asked the REP education specialists to help them 'unpack the results'.

The main focus of REP's intervention at this school has been to develop the principal's and two key teachers' instructional leadership skills within a whole school development context in order to promote shared responsibility for curriculum management in the school. REP education specialists provide training, coaching and mentoring support to individual teachers and to the whole teaching staff as a group. REP and the school agreed that the intervention would initially focus on numeracy and mathematics, in order to present a demonstration model for effective implementation of the curriculum that can then be replicated in language and other learning areas. In 2007 the REP education specialist and the retired psychologist visited all classrooms together and administered one-minute mental numeracy assessment tasks to identify general problem areas and develop materials to address learner errors and misconceptions. In 2007 teachers asked REP to assist the school in the process of developing a school improvement plan. Education specialists facilitated a school self-evaluation exercise in 2008 and teachers have reflected together and assessed their school's performance in the nine whole-school evaluation focus areas.

All the school's teachers attended the four REP cluster meetings in 2007 and the three cluster meetings that have been held so far in 2008. Teachers report that they value the opportunities that these meetings provide for teachers from different schools to share knowledge and teaching resources such as test items that they have developed for the cluster's item bank.

The school's response to the 2007 Grade 6 Diagnostic Test results

During the third quarter of 2008 the REP education specialist worked through the 2007 Diagnostic Test results with the teachers. Teachers express great appreciation for this assistance and report that the analysis revealed or confirmed aspects of the curriculum that they had neglected in the past. "The WCED just tells us 'You are weak' and the district office never did this [in-depth analysis of the Diagnostic Test results] with us".

Figure 2 shows the pass rates that School B's learners attained in five rounds of WCED Diagnostic Tests,[4] compared to those of the province. The results suggest a steady increase in learner performance. In 2007 the school won the Foschini award (a jungle gym) for the REP school in the district whose Grade 3 results showed the greatest improvement in the 2006 round of WCED Diagnostic Tests. In 2008 the school again received special recognition as the REP school in the district whose Grade 6 results showed the greatest improvement in the 2007 tests. Teachers ascribe the improvements in learner results to REP's support,[5] as well as the following factors:

- Teachers 'putting in extra work' especially to do regular internal diagnostic assessment and to plan differentiated lessons, based on the results that learners achieve;
- Giving learners more frequent formal assessment tasks;
- Placing particular emphasis on reading with comprehension and requiring learners to interpret questions and instructions in formal assessment tasks;
- Drilling the key words and phrases commonly found in test items;
- Improved classroom management to facilitate purposive grouping of learners; and
- Using more 'fun' activities like games (e.g. Bingo and Dominos) to teach curriculum content.

Looking to the future

The school's most experienced Foundation Phase teacher, who had been a key teacher in the WCED's Multi-grade Initiative, retired in the third quarter of 2008, due to serous illness. Teachers report that they have great respect for her work and her departure has been a great loss to the school. They realise they

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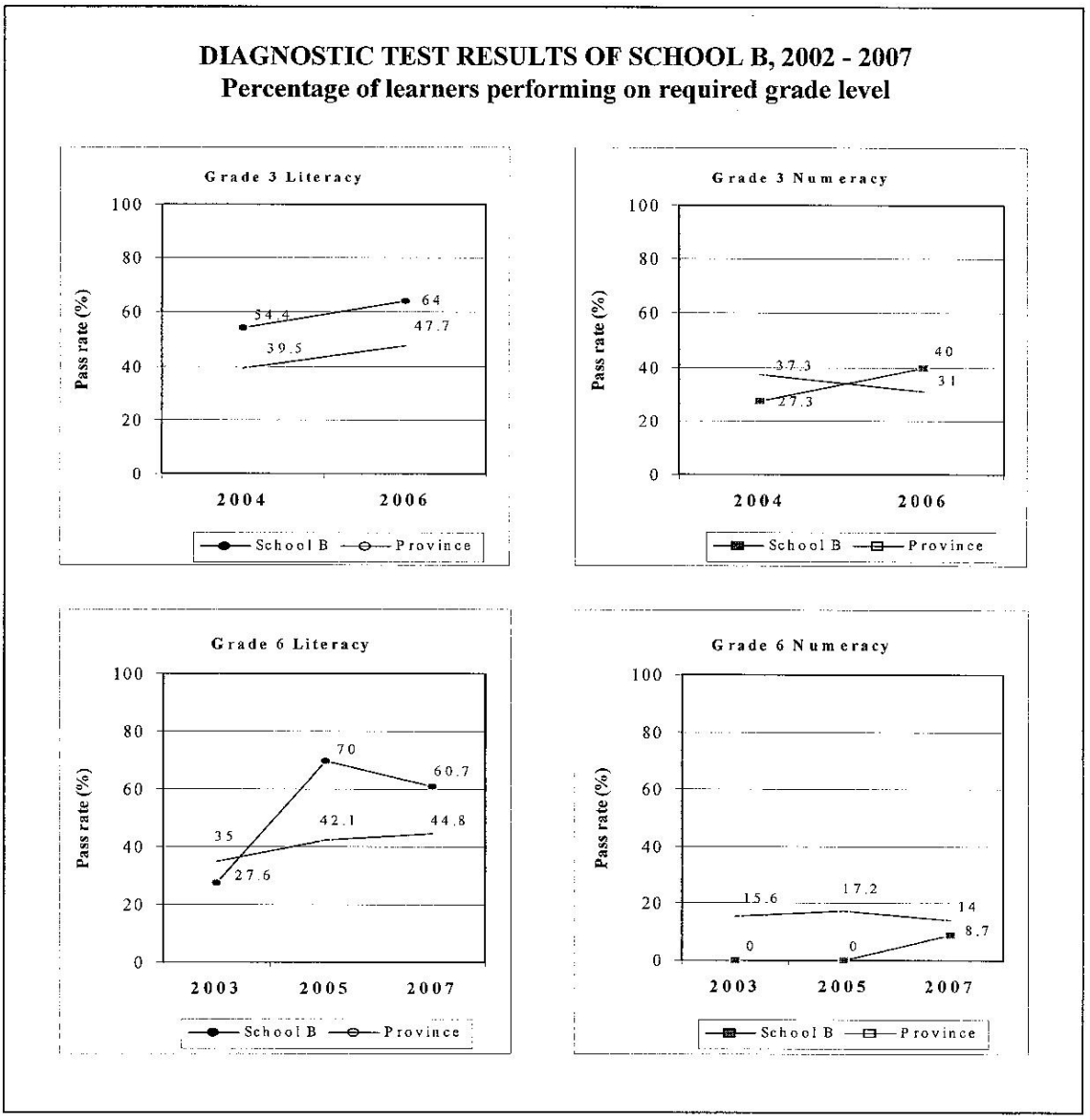
4 The school's Grade 3 learners were not tested in the first round of Diagnostic Tests (2002); only schools with 40 or more Grade 3 learners were included.

5 Teachers' claim that REP's support has contributed to the higher pass rates that their school's learners achieved in the last round of Diagnostic Tests is not supported by the facts. The grade 6 learners were tested in November 2007, when REP had been working with the school for only one year. It was probably too early for the project's intervention to have had a noticeable impact on curriculum delivery at the school.

will have to take special steps next year to ensure continuity and maintain the school's good standard of curriculum delivery. In the school self-evaluation and SIP processes teachers mentioned several aspects for which they are going to seek greater parent and community involvement to make the school's task easier.

Figure 2: Diagnostic test results of School B, 2002 – 2007
Percentage of learners performing on required grade level



Discussion

In this section we put forward our interpretation of the descriptive data presented in the previous section, applying the analytic constructs that provide the conceptual framework that was outlined earlier. This framework assisted us to recognise patterns in the descriptive data regarding schools' use of diagnostic assessment and how teachers were thinking about differentiated lessons, i.e. lessons that are organised to address the learning needs of learners who are in the same grade, but performing at different levels.

Schools as bureaucratic façades

The two case studies illustrate different ways in which schools are grappling with change in the context of a fragile state that aspires to a higher level of development. In terms of Soudien's form/substance distinction, we see School A as placing the emphasis on 'form' issues such as record keeping and various monitoring systems. For example, when REP started working with the school the main step that the SMT took to support and encourage teachers to participate in the project, was to supply each teacher with a file in which he/she could keep all documents related to the project. This suggests that the SMT relies on administrative and managerial measures to bring about development, rather than processes and expanded opportunities for teachers to identify and address specific aspects of their education practice that need to be strengthened. The principal and SMT have also introduced a number of internal monitoring systems in an effort to make teachers more accountable for curriculum delivery. In addition to the system of quarterly reports to monitor curriculum implementation, and weekly checking of teachers' lesson preparation, the literacy half-hour is being monitored specifically. But the principal acknowledges that the decline in the 2007 Diagnostic Test results suggests that monitoring in general and of the literacy half-hour in particular, has so far not resulted in improved teaching practice.

To us, some of the issues that School A's teachers have been involved in appear peripheral, given the evidence that the school is performing poorly in terms of delivering the basics of the curriculum, particularly in the Intermediate Phase. We would argue that something like the e-mail link with a school in the Netherlands is a superfluous activity, given the challenges facing the school in fulfilling its core function. Similarly, it seems of secondary importance that some of the teachers obtained an international qualification in

computer literacy. It appears inappropriate that the school's Khanya laboratory is used only for computer literacy, not to support literacy and numeracy or other areas of mainstream curriculum delivery. We would question the value of teaching learners computer literacy if the majority of them are not attaining basic literacy and numeracy, which are prerequisites for high school study and most skilled and semi-skilled work opportunities. We would characterise these as examples of the school's effort to portray a façade of modernity to mask its poor academic performance.

The evidence suggests that teachers at School B have been focusing more on substantive issues pertaining to literacy and numeracy. This school's literacy and numeracy strategy has several strands, compared to the literacy strategy of School A, which focuses mainly on exhorting teachers to use the literacy half-hour optimally and monitoring its implementation. Whereas School A seems to rely almost entirely on REP's support and input to improve literacy and numeracy, School B's strategy combines elements obtained from several external sources of support – the Multi-grade Initiative, REP, the retired psychologist who assists the school and district officials such as the previous specialised learner and educator support advisor.

The different ways in which the two schools are addressing curriculum delivery are partly due to their own interpretation of their challenges and the strategic direction they wanted to take, and partly due to the momentum of the subsequent REP intervention. Both are whole-school approaches, but School A's approach takes a hierarchical management structure as given, and is more concerned with formal issues such as monitoring and management systems. There seems to be a misinterpretation of the school's core function – learning and teaching. School B's priority has not been management issues *per se*, but aspects of curriculum delivery such as teachers' subject content knowledge and pedagogy within and across the grades.

But circumstantial features of each school's situation could possibly account for differences between the two schools. School A is a larger school and teachers don't live locally; they all commute to and from school every day. This places limitations on the time teachers have available, or are willing to devote to collective planning and professional development. School B is located in a fairly homogenous community and all teachers live in the community. The school is much smaller than School A, so management is less of an issue and the teachers and principal work together as a team.

Schools as authoritarian bureaucracies

Part of School A's preoccupation with formal aspects of school and curriculum management is a great deal of emphasis on mechanisms and systems of control. The concern with monitoring is the most obvious example. Implementation of the school's various monitoring systems seems to reinforce the hierarchical management culture. For example, teachers are required to monitor their own curriculum delivery, which is in turn monitored by phase HODs who report to the SMT and the curriculum co-ordinator.

The situation at School B is more relaxed and collegial. The school has no SMT and although the principal says he regards himself as the manager, the five teachers generally work as a team. The principal acknowledges that the school's curriculum management systems are inadequate. For example, they use mostly informal methods to monitor curriculum delivery. But efficient management systems and procedures have not been their priority. In addressing the school's challenge to improve numeracy and literacy, the starting point has not been management, but the core task of teachers to mediate curriculum content to learners, which requires them to strengthen their own pedagogic content knowledge, to do regular diagnostic testing, and to devote more time to planning differentiated lessons.

It can be argued that the ways in which the WCED head office and district offices have communicated with schools about the Diagnostic Test results have contributed to perceptions of this policy instrument as a managerial (accountability) mechanism, as opposed to a developmental tool for teachers to use. Prior to REP's involvement with these schools, teachers had not engaged with the analytical feedback that the WCED provides with each set of Diagnostic Test results. Teachers at both schools experienced the testing only as a high-pressure accountability measure exercised by the Department. They seem to have been unaware of its diagnostic and remedial potential and were unable to use the feedback that the Department provides as a diagnostic tool. Apart from a discussion with Foundation Phase teachers at School A, neither school had received substantial or systematic support from the district offices to interpret and analyse the test results. Teachers at School B claim that they discuss the Diagnostic Test results every year, compare them with previous results, and design programmes to address the weaknesses. They have discovered that most of the Grade 6 learners cannot read. But they were not satisfied that their analysis and understanding of the test results was thorough

enough, so at the beginning of the project they asked the REP education specialists to help them 'unpack the results'.

Powerful teaching

The central feature of this construct put forward by Christie (2008) is that teachers should create *meaningful* learning opportunities for learners. The data set that was used for this study does not include any evidence from classrooms or examples of teachers' and learners' work. We therefore offer a tentative interpretation of the two schools' situations with regard to powerful teaching practice. We find some evidence that teachers at School B are concerned with ways to provide learners with meaningful learning experiences. A number of examples were mentioned in interviews. With the assistance of REP and the retired psychologist who helps them, teachers have been using internal diagnostic tests regularly to determine learners' needs and plan their lessons accordingly. Teachers are also placing a great deal of emphasis on developing learners' ability to read with comprehension, and in Mathematics learners are encouraged to use a range of methods for solving problems and executing operations, and they must explain how they arrived at their answers. This enables teachers to facilitate the transition from informal methods to more efficient methods of calculating. Teachers have also introduced games into their lessons 'to bring the fun back into learning'.

Compared to School B, there is limited evidence that School A's teachers have been making an effort to develop 'powerful classroom practices'. They have relied mainly on new ideas and methods introduced by the REP education specialist, such as fun ways to teach the alphabet and how to organise group work more effectively. The school has requested REP to provide teachers with information about ways to diagnose learners' performance levels. This suggests that some teachers at the school are concerned about their ability to tailor their lessons to learners' specific needs.

Stable and functioning schools

On the face of things both schools conform to Christie's (2008) characterization of stable and functioning schools. Both schools offer orderly learning environments and efficient management systems and procedures appear to be in place, which seem to ensure time on task. Teachers at both schools also report that they have adequate resources and learning materials.

But some differences are evident in teachers' motivation and accountability for curriculum delivery at the two schools. According to REP some vestiges of past conflicts and divisions among staff persist at School A. In an interview late in 2007 with REP's evaluators, teachers voiced some criticisms of the SMT. They complained that the SMT has not supported them in teaching literacy and numeracy and the quarterly monitoring system has not been implemented in a consistent manner, according to plan. In a questionnaire the principal mentions teachers' low morale, lack of accountability, limited use of assessment techniques and inadequate monitoring by SMT members as factors that possibly contributed to learners' disappointing performance in the 2007 Grade 6 Diagnostic Tests. At School B there is evidence that teachers accept collective responsibility for learner achievement and no one is blamed for instances where the results have been disappointing. Teachers have been building on successes they have achieved in previous rounds of the Diagnostic Tests by identifying areas of weakness and taking specific steps to correct those.

The experience of School A suggests that school improvement strategies that consist mainly of managerial interventions do not necessarily bring about improvements in learner achievement. Teachers acknowledge that the school's Grade 6 Diagnostic Test results have been disappointing, particularly compared to the significant improvement in the Grade 3 results in both literacy and numeracy. The test results suggest that the Foundation Phase teachers are increasingly 'getting things right', but it appears that learners lose considerable ground in literacy as well as numeracy in the Intermediate Phase.

School B's Diagnostic Test results don't reflect a consistent pattern of improvement, but it is worth noting that the Grade 6 learners achieved a pass rate in 2007 that is significantly higher than the provincial pass rate. While the increase in the numeracy pass rate cannot be regarded as statistically significant, it was encouraging, given that no learners passed the numeracy tests in the two previous rounds of testing.

Conclusion

We can tentatively point to the following lessons that stand out from our analysis of these two schools' experiences as they grapple with internal and external pressures to change:

- If a school is able to combine and integrate its own resources with inputs from external support agencies, including the Department, the whole can amount to more than the sum of the parts and efforts to change can gain extra momentum.

- Teachers are more likely to use external inputs like the WCED's breakdown of the Diagnostic Test results, if this process is mediated and facilitated.
- Collective reflection and collegial engagement in development processes are more likely to motivate teachers to take action than managerial and administrative measure that emphasise compliance.
- Such change processes can take time and they require agency, collective engagement and extra effort. Teachers, especially school managers, might be tempted to opt rather for 'formal' bureaucratic (managerial or administrative) mechanisms that hold the promise of quick solutions.
- Due to the hierarchical nature of bureaucracy, and its inherent authoritarianism, such managerial measures are often designed to strengthen managers' control, rather than provide practical or technical support for teachers.
- Teachers who commute to school appear less willing to spend time in the afternoons, after lessons on planning and lesson preparation than teachers who live in the community served by the school.

Christie (2008) remarks that it is difficult to change school and classroom factors that impact on learner performance, even if it is relatively easy to predict what they are. The small shifts in the WCED literacy and numeracy results over the six years of Diagnostic Testing seem to bear out policy researchers' caution that it is very difficult to translate policy into action in large education systems, and that it can take years for policy to have an impact on education processes and outcomes. Our research in these two rural schools illustrates the complex interplay of factors that can boost or impede school improvement. School A's experience suggests that managerial measures such as monitoring systems or provision of additional learning resources are not sufficient to improve standards of teaching and learning if teachers are not motivated to improve their practice, or if shortcomings in their subject content knowledge are not addressed. School B has been able to demonstrate incremental improvement in learners' performance, which seems to be associated with a collective effort among educators to strengthen and coordinate various aspects of curriculum delivery at all levels.

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Susan Meyer

smeyer@telkomsa.net

Cally Kühne
Schools Development Unit
University of Cape Town

cally.kuhne@uct.ac.za

What really matters: aspects of pedagogy linked to access to and achievement in specialised knowledge for learners in differing social class contexts

Heidi Bolton

Abstract

What do high levels of learner achievement at school signify, if not access to and successful participation in, specialised knowledge? A battery of predominantly Portuguese studies has shown the association of specific pedagogic features with high learner achievement in primary- and intermediate-level school science, and that these pedagogic features differ slightly for learners in different social class contexts. This article draws on some of the findings of a detailed investigation into pedagogy and achievement patterns in art – a knowledge form differing in structure to that comprising science – in the final year of secondary school in South Africa. The message in the article relates to the importance of particular pedagogic features for access to and achievement in, specialised art knowledge, for learners in widely differing social class contexts. These pedagogic features appear to play a significant role in learners' success, regardless of the knowledge form to which they are applied. Further, it appears that teachers can control the features in order to apply them differently in differing contexts.

Introduction

The need to improve current levels of learner performance in South African schools is widely recognised. In the debate on the relative significance of social context and pedagogy for educational success, the effects of social context on learner achievement are generally acknowledged. Further, of the range of contextual features investigated, the social class of learners has frequently been identified as the aspect most strongly linked to differences in learner achievement (Coleman, 1966; Connell, 1974; Domingos, 1989; Morais, Fontinhas and Neves, 1992 and Morais, Neves, Antunes, Fontinhas, Medeiros and Peneda, 1995; Bolton, 2005, and others).

Mechanisms affecting the chances of learners with differing social class origins are less clear. The concept of pedagogic code developed by British

sociologist Basil Bernstein (1971; 1975; 1981; 1990; 1995; 1996) has proved useful as an explanatory tool for analysing what it is that influences these chances. Importantly, there is recognition of the differential performance of socially similar schools as aptly expressed in the following: ". . .schools should not be judged according to raw scores. . .but according to the value they add relative to their socio-economic circumstances …" (Taylor, Muller and Vinjevold, 2003, p.66).

A battery of Portuguese studies using Bernstein's concepts of pedagogic code, classification, and framing focuses on pedagogy associated with this differential achievement. The studies show the association of specific pedagogic features with high learner achievement in primary- and intermediate-level school science, and that these pedagogic features differ slightly for learners in different social class contexts (Morais *et al.*, 1992 and 1995; Morais and Camara, 1997; Morais and Neves, 1997; Morais and Rocha, 1997; Morais, 1998; Ferreira and Morais, 2008).

The study on which the current article reports sought to ascertain whether the pedagogic features associated with achievement in science – a vertical discourse with a hierarchical knowledge structure (Bernstein, 1996) – are also linked to success in art, a horizontal knowledge structure with weak grammar (*Ibid*.). Achievement in art was investigated at matric (final year of secondary school) level – the only stage at which the potential subjectivity of assessments is held in check by independent external examination by small groups of teachers.

This article briefly outlines how data on pedagogy were obtained and analysed in the larger study on which it reports. It focuses on the pedagogic features shown to be linked to success in both the South African art study and the Portuguese science studies, and on other features necessary to facilitate the use of these key aspects when implementing curricula.

Theoretical bases

Three areas are theorized in the larger study on which this article reports: pedagogy; the demographic features of gender, race and social class; and achievement in art (Bolton, 2005 and 2007). The theoretical frames are used deliberately to extend understanding beyond that afforded by individual experience; the two relevant to this article are sketched briefly here.

The body of research on which the study attempts to build utilises Bernstein's theory of pedagogy, in which power and control are theorised at high levels of abstraction and can be used to link macro and micro levels of analysis. It was possible to use the same basic categories used in the science studies by re-categorising sub-categories in art-specific ways in the current investigation.

There is insufficient space to detail conceptualisations of race, class, and gender theorised in the larger study of which this article is a part. Since significant differences were found between the art achievements of Grade 12 learners differing according to particular aspects of social class, and relatively small differences relating to their gender and race categorisations, (Bolton, 2005) the conceptualisation of social class is mentioned briefly. Acknowledging the complexity of the concept of class boundaries, the study selected Wright's (1997) relational typology of 'locations within class relations'. Here, social groups are seen in relation to each other and to different dimensions of inequality. This approach has great potential explanatory power with respect to inequality: it theorises specific advantages that some learners may have. It also acknowledges the need to reflect the 'shared values' implicit in neo-Weberian frameworks as well as the 'conflicting values' of the neo-Marxist paradigm – and incorporates gradations within the relational categories.

In Wright's (1997) typology of locations within class relations, individuals are either owners ('employers') or employees. Owners are categorised on the basis of the numbers of their employees. Employees are divided into nine categories; a grid is created using skill types and levels (semi-skilled, skilled and expert); and second, positions in authority hierarchies (worker, supervisor, manager). Findings showed that Grade 12 learners' mean art grades were not affected by having parents or care-givers categorised as employers or employees, or being in differing positions in the authority hierarchy. (Bolton, 2005). In contrast, the skill types and levels of employee parents (or caregivers) were found to be broadly associated with learners' art grades. Briefly then, the mean grade of learners with parents (or caregivers) with university degrees was found to be higher than that of those with lower levels of academic education or vocational qualifications.

Bernstein's theory of pedagogy

As Muller and Gamble (2009) rightly assert, for Bernstein, "the basic unit of socio-educational analysis is not the individual but the communicative relation and its control". Bernstein's theory of pedagogic (communicative) codes was used in the current study to investigate relations between macro-level features such as social class, pedagogy (the relay), and the micro-level achievements of individual learners. It made possible the linking of empirical evidence and theoretical concepts, and explanation of how power and control translate into communication (Muller and Gamble, 2009). Analysis in the current study was built on the idea that school pedagogic communications comprise differing modalities of elaborated codes (Bernstein, 1995).

Bernstein (1995) developed specialised concepts for use in distinguishing modalities of elaborated code, those of *classification* and *framing*. Classification denotes the degree of specialisation of categories or separation between categories, and generates recognition rules "whereby a context is distinguished . . . in relation to other contexts" (Muller and Gamble, 2009). When classification is 'strong', categories will have clearly distinguishable identities and specialised rules of internal relations. When it is 'weak', categories will be less easily distinguishable with less specialised internal relations (Bernstein, 1995).

Framing comprises control of pedagogic communications. According to Bernstein (1996, pp.27–28), framing regulates both the "rules of the social order" (rules relating to "conduct, character, and manner"; the extent of the hierarchical relation between the teacher and learners), and "the rules of the discursive order" (rules relating to specialised knowledge to be transmitted and acquired). Framing refers to the selection and sequencing of the content of the communications; pacing, and "evaluation criteria" by means of which learners' texts (any aspects attracting evaluation) are evaluated (*Ibid*.). With strong framing, the transmitter has explicit control over these aspects; with weak framing, the acquirer has more apparent control.

Earlier criticisms of the apparent determinism of the concepts (Harker and May, 1993) have been refuted by the many findings relating to differing realisations of elaborated codes (Morais *et al.,* 1995). For Bernstein, the codes were mechanisms of social production and also carried possibilities for change (Bernstein, 1990). The current study following the Portuguese studies, suggests that teachers could be taught to vary aspects of pedagogy at will; it

provides some thoughts as to possible mechanisms for this variation. The view is put forward that teachers (transmitters) can *selectively realise* differing pedagogic codes: they are not confined to any particular codes.

Pedagogy associated with learner success in science

Several studies use Bernstein's (1996) concepts of classification and framing to describe pedagogy at the level of the school (Daniels, 1988; 1989; 1995; Sadovnik and Semel, 2000), and the relation between pedagogy, social context, and learners' orientation to meaning (Daniels, 1989; Hoadley, 2005), and outcomes (Daniels, 1995; Sadovnik and Semel, 2000). Most relevant for the current research however is the cluster of Portuguese studies which consider learners' complex cognitive competences in science in relation to their socio-economic status, race, and gender, and pedagogy at the level of individual classrooms (Domingos, 1987; Morais *et al.*, 1992 and 1995; Morais and Camara, 1997; Morais and Neves, 1997; Morais and Rocha, 1997; Morais, 1998; Ferreira and Morais, 2008).

In these studies classification and framing values are assigned to comprehensive ranges of components of pedagogic practice (pedagogic features) (Bolton, 2005). In a cluster of science studies over time, five differing but particular pedagogic practices were taught to practicing teachers; the resulting pedagogy was observed and monitored and learners' associated performance relating to specific cognitive competences in science was analysed. Results of these studies show that specific pedagogic features are linked to high learner performance in science by learners in general, and disadvantaged learners in particular.

The science studies however focused on science lessons at intermediate and lower school levels only (Morais, 1998). Further, there are few studies detailing *how* classification and framing values have been or could be weakened or strengthened (Morais *et al.*, 1992 and 1995; Morais and Miranda, 1996; Hoadley, 2005; Reeves, 2005; Ferreira and Morais, 2008). There is a need for further study of relations between pedagogy and learners' achievement in other school subjects, where learners' social contexts form an integral part of the analyses. The current study attempts to address these gaps.

Questions for the current study

Taking into account the need to improve learner performance in South Africa, the role potentially played by pedagogy in this performance, and the need for research into subjects other than science, the research question here is:

> What, if any, are the specific pedagogic features associated with achievement in matric art by learners in general, and disadvantaged learners in particular?

In order to ascertain whether specific pedagogic features were associated with high levels of achievement in art, and if so, whether these features were similar to those linked with success in science, a two-part design was needed. One part involved a survey of 752 matric art learners for gathering information on their final art grades, and social class, race, and gender. Since social class, and within that the education and training types and levels of learners' parents were found to be the factors most closely associated with learners' achievement patterns – the sample of school classes selected for detailed study was chosen according to these aspects (Bolton, 2005, pp.76–83).

The second component of the study comprised a multiple case study for detailed exploration of pedagogy in *six* school classes. Two school classes were selected at each of what were defined as upper middle-class, lower middle-class, and working class social class levels (*Ibid*., pp.84–85).

This article goes on to discuss the set of specific pedagogic features found to be associated with high levels of performance in both art and science by learners in general, and disadvantaged learners in particular. It starts by sketching how two of the most important features in the set were analysed and coded.

Describing pedagogic features

Data on pedagogy was gathered in the six selected school classes, via at least 30 hours of classroom observation for each school class. During these periods all teacher-learner dialogue was recorded and transcribed; detailed notes were made to capture non-verbal detail; and interviews were conducted to obtain additional information.

Using Bernstein-based theoretical categories denoting power and control enabled comparison of pedagogy in the art classes to that in the science classes already studied, without constraining description of the categories in art-specific ways.

After much to-ing and fro-ing between the theory and data to develop an "external language of description" from the "internal language of the theory" (Bernstein, 1996, p.135), observed pedagogy was categorised in terms of 27 pedagogic features (see Table 1). Two of the features were found to be key for success in art for all learners – *regulative mode* and *elaboration of evaluation criteria* – and they are elaborated in the remainder of the article.

Table 1: Categories used for analysis of pedagogy

Power Relations
CLASSIFICATION OF DISCOURSES Classification between 'consecrated' and 'unconsecrated' art discourses, as seen in 1a. classroom displays 1b. stored visuals 1c. references to consecrated art 1d. gallery exposure 1e. art history Classification between styles or 'languages' within 'consecrated' art, as seen in 2. art 'languages'
CLASSIFICATION OF SPACE 3a. teacher-learner space 3b. length of individual teacher-learner interactions 4a. learner-learner space 4b. learner-learner materials
CLASSIFICATION OF AGENTS 5. differentiation between learners

Control Relations
FRAMING OF REGULATIVE DISCOURSE 6a. entry to/exit from the classroom 6b. control of communication 6c. regulative mode 6d. initiation of teacher-learner dialogue 6e. control of work focus 6f. balance of sound
FRAMING OF INSTRUCTIONAL DISCOURSE 7a. macro selection (of projects/processes to be carried out) 7b. micro selection (of components within projects/processes) 7c. micro selection (of sources of reference) 8a. macro sequencing (of projects/processes to be carried out) 8b. micro sequencing (of projects/processes to be carried out) 9a. macro pacing (of projects/processes to be carried out) 9b. micro pacing (of projects/processes to be carried out) 10a. explication of evaluation criteria via extension of learner selection 10b. explication of evaluation criteria via elaboration of criteria
ADDITIONAL CLASSIFICATORY FEATURE 11. level of instructional content

Regulative mode

Regulative discourse was encountered in relation to learners' entry to and exit from classrooms (the start and finish of lessons); control of the type and length of communications in the classroom; initiation of teacher-learner dialogue; control of the degree to which learners focused on work or on social interaction unrelated to work, and overall mode of control; during practical lessons. Since the overall regulative mode was found to be key for success, it is the feature detailed here.

In order to describe what was perceived as the *mode of regulative control*, or the *overall way* in which teachers framed their communications with learners, the concepts of 'inter-personal', 'positional' and 'imperative' are used (Bernstein, 1971; Pedro, 1981; Morais and Neves, 1997; Morais, 2002a, Gamble and Hoadley, 2008). As elaborated by Gamble and Hoadley, imperative communications allow no options and give no reasons. Imperative control involves verbal or non-verbal commands or threats: hierarchical relations are explicit. Positional communications provide reasons based on rules linked to particular social categories. They involve the stating or

elaboration of rules, while personal control focuses on controller and controlled as *individuals* – hierarchical relations are masked. Personal communications refer to the personal consequences of individual actions. The framing of regulative discourse is characterised as weak when the teacher does not indicate norms of social conduct previously established, leaving these implicit, and using personal appeals when students transgress the limits of the norms. When using inter-personal appeals the teacher asks students for reasons for their conduct and shows them advantages and otherwise, of their attitudes. Framing of regulative control is categorised as strong when teachers address transgressions with positional or imperative communications.

In the analysis of data in the current study it was found that the extent to which norms were explicated in observed classroom discourse was not necessarily linked to particular types of (inter-personal or positional) communications. Further, differing types of norms were observed – some, such as "stand up straight when you are talking to me!" drew on social status; others, like "we hold the brush like this when we use this paint", related to art-specific norms. In other words, differing kinds of positional communications were observed: one being those issued from the position of secondary school teacher (with status by virtue of the role in the school system); the other being those of a specialised fine-art teacher (with authority by virtue of the possession of specialised knowledge).

The unit of analysis in the present study was the teacher-learner interaction, a single interaction being the sum of all teacher-learner communications (with individuals or groups) until the teacher moved to subsequent learners. Interactions were scanned for presence and type of norms, types of learner transgression, and teacher responses to learners' transgressions. Norms and learner 'transgressions' were categorized as implicit, or explicit art- or social-conduct norms. Teacher responses to learner transgressions were characterised as 'inter-personal/art-positional' ('respectful'), 'social-positional/ imperative'('authoritarian') and 'mixed'. The following extracts are examples of observed regulative communications: categorisations are placed in square brackets. In the first, the teacher addresses a learner working with pencils deemed too hard.

T: You still need your 6B pencils – it's basically all coming out silver now
CML:[1] (nods)

[1] CML: Coloured male learner; CFL: Coloured female learner; WML: White male learner, etc

T: You still need to use your 6B to get your dark colours [a*rt norm, art positional comment*]

In the following excerpt a learner trying to complete a drawing after the teacher had called for all work to be submitted for marking, was addressed.

T: (to a learner after having said that work was due) Okay, what're you doing now Rick?
CML: (indistinct)
T: You give it in as it is. It's time now, if you don't come to school, that's your problem [*social norm, social-positional comment*]

The following comment was addressed to a learner socialising rather than working.

T: (to a learner not working after the start of a lesson) At the back there, can you please get some work done now? [*inter-personal comment*] Put your bag on the floor and get going [*norm implicit; imperative comment*]

In summary, regulative mode is essentially about the degree to which teachers adopt the role of 'teacher' and focus on personal social conduct, general social norms, and imperative communications, as opposed to taking on the role of 'art facilitator' and focusing on art-related conduct, art norms and inter-personal/art-positional communications. With strong framing (F+) of regulative mode, more teachers' comments address general social conduct with social-positional and imperative communications than specifically art-related conduct. With weak framing (F-) of regulative mode, more teachers' comments address art-related conduct with implicit, inter-personal or art-positional communications than address general social conduct. Framing of the pedagogic feature *regulative mode* is thus described as follows.

F + + Personal and social conduct is emphasised with social-positional and imperative communications;
Less than a quarter of interactions feature implicit or explicated art conduct norms together with inter-personal or art- positional teacher responses to learner transgressions.

F + Personal and social conduct is emphasised with social-positional and imperative communications;
Quarter to half of interactions feature implicit or explicated art conduct norms together with inter-personal or art- positional teacher responses to learner transgressions.

F - Art-conduct is emphasised;
Half to three quarters of interactions feature implicit or explicated art conduct norms together with inter-personal or art- positional teacher responses to learner transgressions.

F - - Art-conduct is emphasised;
Over three quarters of interactions feature implicit or explicated art conduct norms together with inter-personal or art- positional teacher responses to learner transgressions.

Instructional (work-related) discourse is defined in terms of the selection, sequencing and pacing of content and skills, and the degree to which evaluation criteria are made explicit (Bolton, 2005). The second pedagogic feature outlined in this article comprises the elaboration of evaluation criteria.

Elaboration of evaluation criteria

The explication of evaluation criteria has been found to be the most important pedagogic feature for success in science (Morais *et al.*, 1992 and 1995). In the current study, the extent to which criteria were elaborated was considered in judgements voiced or shown by teachers to individuals, groups of learners, or the whole class, as the teachers moved around the classroom giving feedback to learners as they worked. Criteria are said to be rendered distinct through change in content or individuals with whom criteria are being discussed. Since the idea is to show degrees of elaboration of criteria, a continuum of clarity is needed.

Criteria are said to be ‘clear’ when presented as specific routes of progression or articulations of ideas by the teacher. The critical feature for defining clarity is the narrowness of options presented to learners: in clear evaluations the teacher presents relatively specific options within which learners are bounded and isolated from possibilities external to this. Criteria are said to be ‘unclear’ when learners can potentially make multiple interpretations.

It is argued that various conditions narrow the possibilities of interpretation by learners and serve to clarify criteria, four of which have been found in the data for the current study and are delineated below.

- Criteria are made clearest when specific principles or features to be evaluated *and* specialised behaviours are explained to learners *together with* the showing of (in this case visual) examples *in the forms required*. Specific features to be evaluated, art-specific conduct and visual examples are indicated in square brackets in the following extract.

T: … what's wrong with this [sketch on blackboard showing overlapping outlines of objects]?
CML: You can see the objects
CML2: It's overlapping
T: . . . What's in front there? . . . Is anyone gonna argue with me … the bone's in front, isn't it?
CFL: Yes
CML3: Ja
T: And the chair shape's behind. . . .Why does the mind tell you that?
CFL2: Because the bone's on top of the chair
T: How d'you know it's on top – it's not, it's chalk on board . . .
It's overlapping
T: . . . It overlaps .. . . Whenever it overlaps it's obvious: this thing's in front of that thing . . . Your mind tells you because of overlapping . . . You must confuse the viewer – [as to] what's in front and what's not [*specific art-conduct*]. If you do this [alters sketch on board, removing lines that provide the illusion that one object is in front of the other] [*visual example in the form required*] you have no idea, you wouldn't know . . . what's in front, what's behind. Broken shapes, broken lines . . . Play with that . . . [*specific art-conduct*]

- If teachers and learners *share* visual models, a second way in which criteria are made explicit in art lessons is through teachers' mention of specific principles or features to be evaluated *or* art-specific conduct, *without* visual examples.

- A third way in which criteria are clearly articulated is when approval is qualified: instead of saying 'good work' or merely awarding a grade for example, teachers specify comments like 'interesting mark-making', 'lovely colours'.

- Lastly, a requirement for conceptual content is made clear when ideas are discussed verbally, as in the following excerpt in which learners were required to make visual commentary on a public sculpture of their choice.

CFL: I found something [subject matter content] . . . It's that lady on top of the fountain. . .

CFL2: She's standing on top of the fountain that was erected by Howard something – dedicated to something. She's serene and like very calm and stuff.
CFL: So I was thinking that, with like a very destructive and grotesque background.
T: The background being here in the Gardens.
CFL3: I don't know where you get destructive and grotesque in the gardens
T: No no no – you could do her in front of the school and you could let the school degenerate into this graffiti-spoilt gang-ridden –

Conversely, unqualified or partially qualified approval such as 'that works well', leaves criteria open to interpretation. Second, when conduct-related comments such as 'play around with shading and texture' and 'get the image to balance' are procedural rather than referring to specific principles, they are also likely to be interpreted in any number of ways. Also unclear are judgments giving principles without specific recommendations for conduct or (in this instance visual) examples, and visual examples without mention of specific features to be understood.

Framing values for elaboration of evaluation criteria are based on percentage counts of teacher-learner interactions containing one or more clear teacher judgements.

F + + over three quarters of interactions give learners clear judgements
F + half to three quarters of interactions give learners clear judgements
F - quarter to half of interactions give learners clear judgements
F - - under a quarter of interactions give learners clear judgements

Relations between specific pedagogic features, the social class of learners, and high levels of achievement

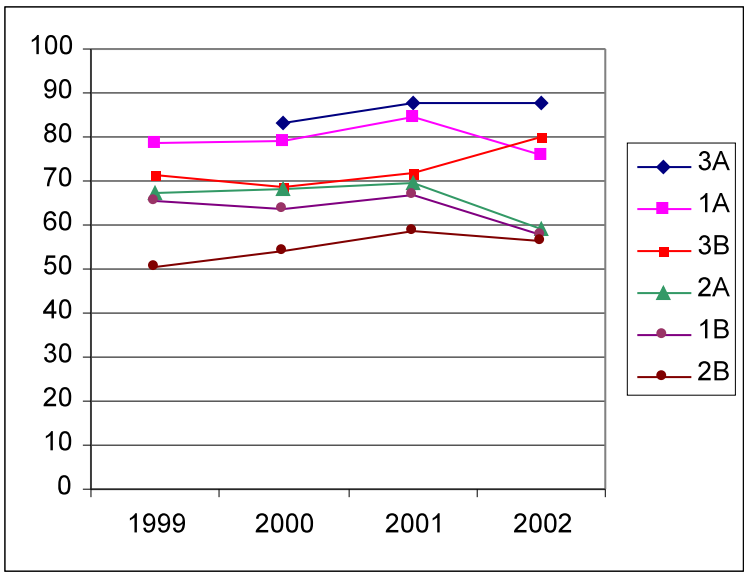
In order to compare pedagogy across the six school classes, their suitability for statistical comparison was ascertained (Bolton, 2005). Since teachers were selected on the basis of patterns in their learners' social class and percentage grades in the first year of the study, analysis was required to ascertain whether patterns within and between school classes remained constant over the three remaining years of the research. Kruskall Wallis tests showed that learners' average percentage grades and the spread of grades were similar within, and different between, the classes of particular teachers over the four years of the

study (*Ibid.*). Since these patterns were constant, it was possible to consider whatever it was that was enduring.

If social class was the feature preserving the similarities within and contrasts between school classes, it would be expected that achievement would run in accordance with privilege. That this pattern was not the case in the detailed case studies suggested two possibilities. Either the relationship between social class and achievement shown in the survey was invalid, or an additional feature such as pedagogic practice was intervening to preserve the patterns. Since achievement was patterned along social class lines in the larger sample of 752 learners, the significance of pedagogy was suggested. It is argued that if pedagogies associated with high-achieving learners differing in social class were found to be similar to each other and different from those experienced by low-achieving school classes, then a feature or features consistently associated with achievement patterns would have been identified.

Further, to contextualise learner achievements associated with each teacher, it was important to consider the achievements of each of the school classes in the sample in relation to all others in the sample, regardless of social class. Ranking the teachers according to the average grades and spread of grades of the school classes showed patterns sufficiently consistent to warrant investigation of pedagogic features as intervening variables associated with achievement (see Figure 1).

Figure 1: Average percentage grades for the six school classes in the study over four years



Key:
3A = school class of learners with high social class
3B = school class of learners with high social class
2A = school class of learners with medium social class
2B = school class of learners with medium social class
1A = school class of learners with low social class
1B = school class of learners with low social class

Relations between specific pedagogic features, and learners' social class and achievement were investigated using conceptually ordered matrices. (Bolton, 2005). Briefly, by entering each pedagogic feature (numbered 1–27) in a separate column, and learners' social class (high, middling, or low) and achievement (high or low) levels in rows, it was possible to identify patterns in the classification and framing of features in a systematic way by looking for:

- Pedagogic features similar within all high-achieving school classes and differing between high- and low-achieving classes;
- Pedagogic features similar within yet differing between the 'high', 'middling' and 'low' social class groups;
- Pedagogic features varying with social class within the high-achieving group of school classes; and
- Pedagogic features varying across high- and low-achieving groups within the social class groups.

Patterns found clearly showed the association of specific pedagogic features with success for particular groups of learners.

Specific pedagogic features linked to success

It is known that apart from teachers' levels of disciplinary knowledge and skill (which need to be high), certain pedagogic features are key for the transfer and learner acquisition of these complex cognitive competences in science (Morais *et al.*, 1995; Morais and Pires, 2002). It was found that despite the differences in knowledge area and school level, almost all of these features were also associated with the acquisition of complex art skills.

Pedagogic features linked to success in art for all learners

Achievement of high percentage grades in art by *all* learners is linked to high levels of conceptual demand and explication of shared criteria, and pedagogic features facilitating the latter. Interestingly, high levels of conceptual demand, although associated with high levels of achievement in both art and science, are on their own insufficient for high achievement.

Explication of evaluation criteria in art occurred in two ways. First, teachers extended learners' selections, verbally or visually or both. Verbal extension in this instance constituted teachers' engagement with learners' ideas and/or visual productions, in all cases involving suggestions beyond those which learners had themselves conceived or created. Visual extension similarly involved teacher-guided development of learners' productions, through the showing of examples by demonstration or from the history of art and other 'consecrated' sources. Second, teachers explicated criteria through elaboration, explaining and correcting aspects of learners' productions, verbally or with visual demonstration when required. Explication appeared to narrow the possibilities for multiple (and possibly incorrect) interpretations by learners, and to increase the potential for their engagement with, and interrogation of, specialised knowledge.

Five pedagogic features that enhanced explication of evaluation criteria were identified in the study, mirroring the science findings (Morais *et al.*, 1992 and 1995; Morais and Pires, 2002). The first comprised continual and extended exposure to – immersion in – specialised discourse. In other words, there was strong classification of discourses, but not without mediation. This exposure included provision of exemplars of 'consecrated' art primarily through continuous classroom displays and critique of work done either by high-achieving past learners, the teachers themselves, or respected practitioners in the field. It was also achieved through tight teacher control of the selection of projects and sources of reference (strong framing of key aspects of selection). Teacher selection of categories of themes and sources of reference showed learners the way and narrowed the possibilities of multiple interpretation.

Explication of sought-after criteria was also furthered by *respectful* (as opposed to *authoritarian*) teacher-learner communication relations. When communication was respectful, it appears that teachers were able to interrogate and shape learners' ideas and productions. If teachers are to help learners to build on their initial ideas, learners need to make substantial contributions to

the dialogue. Dialogue depends on learners' abilities to contribute, and teachers' abilities to understand and extend these beginnings. It appears that social-positional regulative modes stalled this process, while art-positional (specialised-positional) communications furthered it.

A third feature that contributed to the explication of evaluation criteria is weak classification of teacher-learner spaces, where teachers spend most lesson time amongst learners. Importantly, teachers did not only inhabit this space physically; they interacted continually with learners. This interaction appears to facilitate discussion of ideas and thereby elaboration of evaluation criteria.

A fourth set of pedagogic features relates to the sequencing and pacing of content and skills which are described as together comprising the *sizes of steps* learners need to take in order to progress from existing to higher levels of knowledge. In school classes achieving at high levels, learners were guided to differing degrees in their exploration of metaphors and inter-relation of these with technical elements, in complex art projects. Such processes are seldom stumbled upon through use of common-sense. Facilitation of the processes appeared to depend on teachers' knowledge of them, and teachers' extension of learners' ideas and creations through dialogue and the showing of visual examples. It is argued that sequencing and pacing *together* create the sizes of 'steps' learners are required to take in order to realise sought-after criteria. The two features are discussed briefly.

The weak micro (within-project) sequencing associated with achievement in intermediate science (Morais *et al.*, 1995) is not mirrored in matric art teaching. Instead, there was strong micro-sequencing, or strong sequencing of the stages within projects, in all observed classes. It is argued that strong micro-sequencing is necessary in the teaching of art – and possibly science – at Grade 12 level, since mastery of both complex concepts and processes is required. A process for finding material form for visual metaphors is required for example, and consists of several sub-processes, each of which must be followed. Sub-processes could include researching potential imagery, developing personalised imagery from researched images, finding the technical means to realise personalised imagery, and aesthetically manipulating material forms – none of which can be executed successfully without following the process prior to it in this list. It appeared that distances or 'steps' between sub-processes were too large if some of these sub-stages were missing.

Further, there is a sense in which teacher-learner dialogue, when actively opened by teachers and contributed to by learners, *constitutes* micro-steps within sub-processes. It appears that in the absence of open dialogue, the distances between sub-processes can be too large. There are parallel notions in the literature on art teaching: where teachers "scaffold" learners' making of new connections through conversation (Elfland, 2004, pp.771-2); "co-construct" learners' thinking (Eisner, 2002, p.47); "negotiate" understanding (Barrett, 1990, p.302) or act as "discourse leaders" or "connection forgers" according to individuals' needs (Mitchell, 1996). It is argued that open dialogue serves to assist what Muller (2000) refers to as negotiating the crossing of the boundary between everyday and esoteric knowledge.

A fifth and final pedagogic feature consistently associated with high levels of success by all learners comprises weak framing (learner-control) of the selection of components within projects. While teachers selected the *sources of reference* and principles to be followed in high-achieving art classes, it appeared that learners often selected less important aspects, such as subject matter and materials to be used. It appeared that this learner selection increased learners' work-involvement.

High levels of conceptual demand and highly elaborated evaluation criteria, together with the pedagogic features through which they were elaborated, were linked to success for all learners. Nevertheless, some pedagogic features differed across high-achieving school classes in differing social contexts.

Pedagogic features linked to high achievement for particular social class groups

Two pedagogic features differed along social class lines across high-achieving art classes. The first of these was the degree to which teachers differentiated between learners (classification of learners), which increased with an increase in social class. In observed upper-middle class contexts teachers usually dialogued with *individual* learners; in lower social class contexts individuals spontaneously contributed so that communications were built *collectively* rather than between teachers and single learners. It is argued that this collectivity increased the openness of communication relations in situations where they might not otherwise have been as open, thereby facilitating elaboration of sought-after criteria.

Another difference between the high-achieving school classes was the 'instructional-regulative package' in each. In all of the high-achieving classrooms, irrespective of social class context, high levels of conceptual demand and the explication of evaluation criteria were observed. The five sets of pedagogic features appearing to facilitate elaboration of criteria were present. In the high-achieving school classes with high and middling social class however, these features were coupled with strong (whole-class, fast) pacing; strong differentiation of learners (individual engagement with learners); and strong teacher-control of work-focus and sound. The atmosphere in these classrooms could be described as 'businesslike'.

In the high-achieving *lower* middle class classroom in contrast, pacing; classification of learners; and teacher-control of work-focus, movement and sound levels were relatively weak: the character of lessons could be described as 'relaxed'. Learners frequently approached the teacher and initiated work- and non-work related dialogue, to all of which the teacher responded generously.

Worth noting is that these 'businesslike' or 'relaxed' approaches never militated against the operation of *respectful* or 'collegial' modes of interaction with respect to the discussion of work, or against the explication of evaluation criteria. It would benefit learners if teachers could learn to adapt their realisations of these features in relation to the social contexts of the taught.

Pedagogic features varying with social class irrespective of achievement levels

Some pedagogic features varied with social class irrespective of levels of achievement. These features included decreasing exposure to 'consecrated' discourses with decrease in social class. They also comprised time- and resource-based differences: the higher the social class, the faster the pace, and the greater the amounts and sophistication of resources available. Classification of *learner-learner* spaces weakened with decrease in social class: the greater the shortage of materials, the more learners moved into each other's spaces to share.

It is worth noting that while learners in highly resourced contexts appeared to produce greater volumes of work, and to use more sophisticated materials and art vocabulary than those in less advantaged contexts, both sets of high-

achieving learners could be said to have engaged with complex art principles at roughly comparative levels. The lesson here is the importance of teacher-focus on specialised knowledge and pedagogic features known to promote access to this knowledge.

Re-iterating differences in pedagogy linked to success in art and science

It has been argued that pedagogy linked to success in art at Grade 12 level is similar to that associated with achievement in science at primary and intermediate levels, with two notable differences. The first difference related to micro-level selection, or, selection at the level of the everyday lesson. Intermediate science learners in high-achieving school classes were given some control with respect to ". . .selection of examples, materials, and various aspects related to the investigative process. . ." (Morais *et al.*, 1995, p.13). It is not known whether this control would be allowed in science at the level of senior secondary school. However, while learners in highly successful art classes may have had some control with respect to selection of materials, media, and interpretation of topics, teachers consistently maintained very tight control over sources of reference.

The second difference related to micro-level sequencing. In pedagogy linked to high achievement in science by learners in low social class contexts, learners were given some control of ". . .the micro sequences which occurred during the activities. . . .student interventions altered the sequence of some topics. . ." (*Ibid*.: p.14). Again, it is not known whether this sequencing would change at senior secondary level. It has been shown that in successful art classes, micro-level sequencing was highly teacher controlled. Learners followed teacher-set sequences as they carried out projects, and reported back to teachers at each step of the way for advice and feedback.

These differences could relate to differences between art and science as forms of knowledge, as much as they could relate to the fact that pedagogy was considered at differing school levels.

Concluding comments

In summary, the achievement of high percentage grades in art appears to be associated with specific pedagogic features. These features include high levels of conceptual demand and a high degree of explication of evaluation criteria. Further, these features include five other aspects of pedagogy thought to facilitate the clarification of evaluation criteria. The additional aspects are first, immersion in or high exposure to specialised discourses. They include second, weak classification of teacher-learner spaces, where teachers physically occupy the same spaces as their learners and communicate with them frequently if not continually. A third feature comprises *respectful* rather than *authoritarian* regulative relations, where teachers use inter-personal coupled with art-positional modes of communication (based on their superior specialised knowledge rather than the general status conferred by their social positions). A fourth feature constitutes strong teacher control of sequencing and pacing which together create *correctly sized steps* to provide scaffolding for learners from their existing knowledge to positions of increased specialised knowledge. A final aspect comprises learner selection of (non-key) aspects of projects, which appears to enhance their engagement with their work. Teachers need to realise these features in their practices.

This set of pedagogic features was associated with success in matric-level art for all learners. In addition, pedagogy linked to success in upper middle-class contexts was fast-paced and businesslike, with strong differentiation of individual learners, and high levels of teacher control of sound and work-focus. In contrast, pedagogy linked to success in lower middle-class contexts was more relaxed and slower-paced; teachers addressed learners in small groups; and there was apparently high learner regulation of sound levels and work focus. In these classrooms, it appeared that learners' collectivity and learner-learner interaction mediated and assisted in the transfer of specialised knowledge. Teachers need to learn to vary their practice in these respects.

Some pedagogic features were associated with social class regardless of levels of achievement: it is clear that teacher-focus need not lie here. Interestingly, pedagogy linked to success in science and art classrooms was found to be similar. Two features – the stronger micro-level sequencing and selection of sources of reference in successful art classes – may be due equally to the differences in the knowledge forms of the respective subjects, or to the differing levels at which pedagogy was studied.

This article reports fine-grained delineation of pedagogic practice in a theoretically systematic way. Categorisations show that while constructs such as 'code', 'power' and 'control' enable rigorous analysis and comparison of features across a range of contexts and levels, these tools need not in themselves, given the demonstrated different ways in which they have been operationalised, pre-determine the way in which pedagogy is understood.

The study shows that teachers configure sets of pedagogic features in differing ways – each teacher manifesting clusters of features in unique ways. Importantly, key features are linked to success, and there are multiple ways of operationalising these *key features.* These findings could make a crucial contribution to the education and training of new teachers, as well as to the in-service education and training of existing teachers. Teachers can learn how to *vary pedagogic features selectively* in order to maximise the transfer and acquisition of specialised knowledge in specific social class contexts. In other words, teachers can selectively tighten or relinquish control of pedagogic features for accomplishment of curricular goals for specific groups of learners.

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Heidi Bolton

At the time of the research: University of Cape Town;
currently South African Qualifications Authority

hbolton@saqa.co.za

Teaching in the age of AIDS: exploring the challenges facing Eastern Cape teachers

Lesley Wood

Abstract

Since young people often turn to their teachers for information around sexuality and HIV, the latter need to be knowledgeable about these issues and willing and able to integrate them into teaching. Moreover, teachers are increasingly being called upon to respond to the basic physiological and psychosocial needs of their learners. As part of an umbrella study to investigate and promote HIV & AIDS education and support in schools, this article reports on a qualitative enquiry conducted among a purposively selected sample of teachers in urban township schools to ascertain their response to the challenges resulting from the pandemic. The findings suggest that the participating teachers held complex and contradictory views around HIV & AIDS education, that they were constrained by the prevailing social and cultural background, and that their responses were inhibited by the lack of adequate social welfare support systems. These factors combined to make it difficult for them to interpret and implement policy that calls for a 'coherent and collaborative response'. The real and depressing picture that emerged will hopefully be useful to inform professional development interventions to ensure that future teaching and learning is relevant and effective, given the social and educational context.

Introduction

The HIV & AIDS pandemic is not only eroding the capacity of the education sector to meet its core objectives of providing quality education for all, but is placing demands on schools, and ultimately on teachers, with which they are not equipped to deal (Cohen, 2002). In this era of multi-literacies (Cope and Kalanstzis, 2000), HIV & AIDS 'literacy' is becoming an increasingly important determining factor for teachers in their ability to deal with the challenges and stresses facing them, as a direct or indirect consequence of the pandemic. Teachers not only need to be able to understand the bio-medical facts of the virus, but also have to come to a deep understanding of the complex web of related cultural, economic and social causes and consequences of the pandemic (Chege, 2006). Such an understanding is a necessary foundation to enable them to integrate effective HIV & AIDS education into their teaching, and to intervene to ensure that the basic physiological and psychosocial needs of their learners are met. Teachers

operating in such difficult social and educational circumstances also have to develop resilience to ensure that their own mental health is not jeopardised (Theron, 2005).

However, it is questionable whether the majority of teachers have capacity to respond as described above (Theron, 2005). Since of all adults, teachers are the group to which the youth turn for information and advice about sexuality-related matters (Wood, 2009; Zisser and Francis, 2006), it is imperative that they are assisted to develop a high level of competence and confidence regarding HIV & AIDS education. The knowledge, attitude and capacity of teachers to respond should therefore be explored, as a departure for future developmental interventions.

Although there is evidence that education is not an adequate buffer against HIV infection (Berger 2004; Unterhalter, 1999), particularly among women, the reality is that formal education remains a bastion of hope in the fight against HIV (Theron, Geyer, Strydom, and Delport, 2008). Schools and teachers are in an ideal position to positively influence learners to make choices that will lessen their vulnerability to HIV infection and to help them deal with the socio-economic and psychological consequences of being infected or affected (Coombe, 2002). However, the counter-argument exists that the school environment may well become an incubator for attitudes and behaviours that contribute to the spread of HIV (Clarke, 2005). Negative peer pressure and the 'wrong things' being taught could be contributory factors. Teachers themselves may unwittingly work against the goal of curbing transmission out of ignorance, fear or lack of political will (Wood and Webb, 2008).

In order to lessen the probability of such a scenario, I propose that teachers would benefit from training that would help them to approach HIV & AIDS education in a comprehensive and critical manner. To do this, they would need to be able to obtain and accurately interpret information about HIV & AIDS prevention and care from a global and holistic perspective; to use this knowledge to design and implement educational programmes as a preventative measure against HIV infection (Coombe, 2002); to minimise related stigma, providing care and emotional and practical support to those in need (Hoadley, 2007); to create emotional environments that encourage trust and openness (Bhana, Morrell, Epstein and Moletsane, 2006); and to be able to protect their own professional and personal well-being to prevent overload and burn-out (Theron, 2005). Being HIV & AIDS literate also entails the adoption of a

critical stance (Wood, 2009), interrogating whether specific knowledge and/or practices are suitable for specific contexts, rather than just blindly implementing curricula/programmes provided by external 'experts'. It involves critique of prevalent discourses that permeate the view of HIV as an irreversible disaster, a view that writes off the future of learners infected/affected by HIV & AIDS. Although not everyone agrees that teachers should be expected to take on such responsibilities (De Lannoy, 2005), the National Policy on HIV/AIDS for Learners and Educators (DoE, 1999) and the Norms and Standards for Educators (DoE, 2000) stipulate that teachers should be able to fulfil such expectations. In addition, from a critical perspective (Freire, 2004), the development of a high level of knowledge and understanding of HIV & AIDS and its concomitant challenges among teachers could be the catalyst for much-needed change in our education system.

Purpose of study

This article reports on a qualitative study carried out with a purposefully selected group of teachers in township schools in Nelson Mandela Bay to determine how well able they are to offer prevention education and care/support to learners by focusing on their perceptions, needs and insights into HIV & AIDS education. This approach is guided by the belief that the participants in any educational exercise have valuable input to offer and are an important part of the teaching and learning process. It is therefore essential that the lived experiences and needs of teachers are made known, before any steps are taken to help them develop in this regard. The development of knowledge, skills and critical insight into HIV & AIDS education is vital since, left unchecked, the contributory factors to and the consequences of the pandemic threaten to wipe out any progress made towards a socially just and democratic education system.

The research question chosen to guide this study was:

'What are teachers' experiences and perceptions of HIV & AIDS education in their schools?'

Research methodology

A qualitative approach was followed, since the focus was on the perceived needs and beliefs of the participant teachers (Struwig and Stead, 2007). Sampling was purposive to select teachers who would be able to provide rich data about the topic of HIV & AIDS in schools (Leedy and Ormrod, 2005). For this reason, all teachers selected were Life Orientation (LO) teachers, who would be expected to educate about HIV & AIDS. A total of 14 teachers from schools in the Port Elizabeth townships and indigent Northern Areas were interviewed before data saturation point was reached (Nieuwenhuis, 2007).

In-depth individual interviews were conducted by an independent researcher with participant teachers to gather data (Kvale, 1996). The researcher was the main research instrument and facilitated the interviews (Mehra, 2002), while a second researcher acted as observer during the data-gathering process and kept field notes, for the purpose of triangulation (Morse and Field, 1996).

The following interview question was posed:

'What are your experiences of and feelings about HIV & AIDS education and prevention in your school?'

The audio-taped and transcribed interviews were read and analysed according to Tesch's suggested steps as described in Creswell (2005) to identify themes, ideas, emotions and opinions (Lincoln and Guba, 1985). An inductive and descriptive data analysis process was adopted to identify and compare emerging themes, thereby enhancing a more comprehensive and coherent understanding of the data collected (Lincoln and Guba, 1985).

Literature Control

In this study, literature was used to substantiate the orientation to and rationale for the research. It was also used to justify the research design, and to compare, contrast and confirm the interview findings (Creswell, 2005).

Measures to ensure trustworthiness

The trustworthiness of the research was accomplished around the criteria for credibility (truth-value); transferability (applicability); dependability (consistency); and confirmability (neutrality) (see Guba's model in Krefting, 1991; Leedy, 1993). It was attained by means of triangulation, e.g. field notes, prolonged engagement, participant checking, detailed, dense descriptions, scientific distance, the re-code procedure, consensus on the final themes and categories that emerged, preservation of raw material as an audit trail, mastery of the enquiry method, and reference adequacy (Leedy, 1993).

Ethical considerations

To satisfy ethical requirements, the research adhered to the following: informed consent, voluntary participation, anonymity, confidentiality, explanation of the project, and feedback to participants (Lipson, 1994).

Discussion of findings

It was evident from the data analysis that teachers are experiencing a wide range of problems and challenges, all interlinked and in some way connected with the HIV & AIDS pandemic. A lack of coordination among the roleplayers in the school environment in addressing these interconnected issues was also evident. The data analysis revealed the following themes, discussed now in relation to relevant literature and supported by direct quotations from the teachers.

Theme 1: 'I won't be able to do this – you do it.' Teachers are constrained by their own socio-cultural backgrounds.

The above quote from a male teacher who had attended a five-day workshop on sexuality education presented by an NGO contracted by the Department of Education, highlights the tension between teachers' awareness of what they should be doing and what they actually feel comfortable with. Teachers were acutely aware that they played a vitally important role in determining the extent to which issues such as the sexuality of learners would be addressed. However, they stated that, along with most of their colleagues, they found it

difficult to address prevention through sexuality education, to talk about HIV & AIDS openly and to take responsibility for integrating HIV & AIDS education into learning areas.

Teachers are not comfortable about addressing sexuality

The participant teachers repeatedly mentioned that they were hesitant to discuss issues related to sexuality. They attributed this to the fact that traditional Xhosa culture does not encourage adults to speak to children about sex.

> *It* [sexuality] *is a closed subject amongst teachers. It is just not something people are comfortable with, even us* [LO teachers]. *In fact I remember I attended a workshop on HIV/AIDS and we had to come and report back and we find that there was sort of an uncomfortable situation, especially among the males.*

Teachers understandably struggle to implement the Abstain-Be Faithful-Condomise (ABC) approach promoted by the Departmental training programmes. They consequently tend to avoid engaging with learners and potentially embarrassing questions, adopting a teacher-centred type of pedagogy (Chege, 2006; Visser, 2004). Male teachers may also "construct themselves as sexual towards their female students" (Chege, 2006, p.41), making it uncomfortable for young girls in the class to ask questions. In either case, critical discussion and exploration of sexuality and its link to HIV is not likely to take place.

As products of a gendered society, teachers also tend to unquestioningly accept the dominant norms and practices. For example, when the male teacher quoted above said he could not address sexuality issues in class, even after a five-day workshop, a female teacher described her reaction as follows:

> *And then because I am passionate about this HIV/AIDS thing, I said OK, I will learn about it. And I started gradually, gradually introducing this sexuality in school.*

The male teacher was thus relieved of the responsibility to integrate HIV & AIDS education into his teaching, because his female colleague accepted that he *"can't do this"*. Although this response is indicative of the agency displayed by the female teacher, the fact that she did not think of challenging him to do what the curriculum calls for him to do, is suggestive of the prevailing male dominant power relations.

Although it is not easy to change attitudes and schemata acquired over time, raising critical awareness around cultural habits (Bourdieu, 1990) helps provide a theoretical lens in which to address transformation. One male teacher related how he had overcome his culturally embedded fear of addressing sexual matters through conscious effort and practice. Other studies confirm that males can and do change their gender constructs, given the opportunity to critically reflect on them (Wood, 2009; Bhana, Morrell, Epstein and Moletsane, 2006). Much of the current HIV & AIDS literature positions males as aggressive, dominant and sexual predators (Frosh, Phoenix and Pattman, 2002: Human Rights Watch, 2001), suggesting their unsuitability to address sexuality in the classroom. Helping male teachers to become more caring and approachable would open up the way for creating less polarised gender roles, thus contributing in a small way to changing the prevailing gender norms in education.

It is apparent from the responses of the participating teachers that they would benefit from exploring their gender constructs and sexual identities, as a first step in becoming more comfortable in adopting learner-centred approaches that will encourage open dialogue and critical discourse on the link between social norms and high-risk sexual behaviours.

Teachers promote silence and stigmatisation

The participant teachers described the self-generated silence around HIV.

> *I have never heard that one* [teacher] *would admit that he has got HIV/AIDS. I think that it is still, uhm, a very sensitive subject.*

Not only is there silence around being affected/infected among teachers, but there were many references to stigmatisation between teachers.

> *But now what happens here at school, there was a confrontation between two lady teachers, the one accusing the other, skindering* [gossiping] *about the other one that she might be HIV positive, because her boyfriend was HIV positive.*

One teacher indicated that this non-accepting attitude may be a product of their own fear:

> *Because people seem to entertain themselves about other people's problems, to shy away from their own problems. Because I can skinder about someone who has HIV, meanwhile I am the one, I am also HIV positive, you see, or I don't even know my status. It is quite a big, big problem here at school.*

Cohen (2002) suggests that teachers' refusal to acknowledge the existence of HIV & AIDS in their own lives, given that the pandemic is associated with sex, promiscuity, lack of education and poverty, is an unconscious attempt to protect their own self-image as a socially elite group within the community. Such thinking is hard to reconcile with the message that teachers are expected to convey to learners, namely one of acceptance, tolerance and care for those who are HIV infected or affected (Department of Education, 2003). Every teacher interviewed for this study admitted to having lost a family member to an AIDS related illness; in fact, most of them cited that as the reason why they were so passionate about becoming involved in HIV education. Against this background and the national statistics, which indicate that 12.7 per cent of teachers are infected themselves (Education Labour Relations Council, 2005), it is disconcerting that teachers are not more open and are still displaying the very behaviour and attitudes that they are preaching as unacceptable to learners.

Most teachers avoid taking responsibility for HIV & AIDS education.
The LO teachers interviewed, all expressed that they felt overloaded and overburdened by their mandate to provide HIV education and support to the rest of the school – *"we are tired, so very tired"*. The Department of Education in the Eastern Cape has mostly targeted LO teachers to be trained to address HIV & AIDS education, since it is included in this learning area in the national curriculum statements at both primary and high school levels.

However, LO teachers who had been trained, were battling to implement education or prevention initiatives for two main reasons – lack of time and lack of cooperation from the other teachers, ascribed to jealousy.

> *At school, I haven't done anything, because it is difficult, because sometimes you will find it depends on who said, who is introducing this. Because there will be camps, mos* [sic], *at our schools. And if they don't favour you, even if you come up with something that is constructive, they won't listen to you.*

When asked what the main challenges facing HIV education were, one teacher responded as follows:

> *Not being heard, when you are coming up with something that you think is good, something you think might help others, it might help yourself and other people. Because one teacher might think that you want to be seen as THE teacher.*

The perception among the respondents was that teachers in general were scared to *"open up a can of worms"* by addressing certain issues that they felt they could not cope with. For example, when one LO teacher tried to persuade her colleagues to undergo training in Voluntary Counselling and Testing by an NGO, she received the following response:

> *You won't cope, what are you going to do if the child finds out that he is positive and the child thinks that we can cater for that? What are they going to do? What are we going to do when the people [NGO] leave the following day?*

In spite of official policy (Department of Education, 2000) clearly stating that it is the responsibility of every teacher in his/her pastoral role to become actively involved in HIV & AIDS education, the responses in this study indicate that very few teachers are doing so, and then mostly ineffectively. There are indications that their own gendered views, embedded in a discourse of morality, may negatively influence how they approach the subject of gender relations in the classroom, as indicated by the following quotation:

> *It is socially. . . because it is gentlemen that give us all these problems. Because I think if men were very cautious, we wouldn't be in this problem. Most of the time we are at the mercy of men because if the – your partner – doesn't want to practise safe sex. . .Ya, how much more to those small kids, teenagers because even us adults we, we don't want our partners to leave us. Because if you say wear a condom and he says,"why? Don't you trust me or are you being unfaithful to me? – that is why you want me to wear a condom". So I think if men are cautious, infection will be, will go down.*

Theme 1 has highlighted the fact that teachers are not confident about or comfortable with integrating HIV education and sexuality issues into their teaching, and that what they teach is shaped by their own cultural beliefs and practices. This would suggest that there is a need to raise their critical consciousness (Freire, 2004) about how their own views could hinder or promote effective HIV & AIDS education.

Theme 2: "We are waiting. And we are always waiting." Teachers are hampered by structural constraints in their attempt to initiate a coherent response to address the challenges posed by HIV & AIDS.

Although the participating teachers were aware that they could not deal with the challenges that they were facing as a result of the impact of HIV & AIDS on the schools without working together with other roleplayers, they did not know how to begin to build the required cooperation. They complained of a

lack of coordination and cooperation from the Department of Education, and they found it problematic to work effectively with the Departments of Health and Social Welfare, as well as with the various non-governmental agencies and the parents in their communities.

Teachers find it difficult to cooperate with government departments and parents

All of the teachers complained that the training in HIV & AIDS offered by the Department of Education, via the various NGOs that were contracted to do this, had mostly been from a bio-medical perspective. This increased their knowledge about the facts of HIV transmission, but did little to help them address the related socio-cultural issues that impact on the academic performance of the learners and the quality of education in general. Teachers also had other needs that were not being addressed, such as help with stress management:

> *That is one thing the Department is failing us with. You know, the stress that we get from teaching is enormous. You can't believe it because every day there is something new and it is something very stressful. You go home feeling, you know, very tired and very down.*

Training by the Department of Education lacked ongoing support outside of the training experience:

> *There is no support system; we are stuck here with problems, learners who got problems, teachers who got problems.*

All of the schools had HIV & AIDS policies in place, but, according to the participants, these mostly remained unimplemented, apart from the introduction of Universal Precautions and the forming of Health Advisory Committees, the latter perceived as being totally ineffective and simply another administrative burden for Life Orientation teachers.

Interaction with the *Department of Social Welfare* was also problematic. Teachers reported financing food, clothes and medicine out of their own pockets for indigent learners, due to lack of access to external resources. Although this response is to be admired and in keeping with cultural values of *Ubuntu* and care of those less fortunate than themselves, it is impossible for individual teachers to provide for material needs of so many learners on an

ongoing basis. They highlighted the need for each school to have a dedicated social worker to whom they could refer. Under the present system, help was often not forthcoming and the frustration and stress of following official referral routes was adding to their burden, although their compassion motivated them to try to help:

> *My work is to refer these children. But the way to refer* [sic] *takes a long time, for instance, I must have the parent take the learner to the doctor; there must be a doctor's certificate; there must be a lot of things coming from the parent's side, and I feel that we as teachers must be parents to these kids because they are rejected and neglected by their own parents.*

Teachers complained that they could not locate parents or that the parents were expected to travel to the Department of Social Welfare, who needed identification documents before applications for assistance could be made; many parents and children did not have identification documents, so the teachers would hit a dead end in their efforts to access official help. The response from the Department of Education to their requests for assistance often added to their frustration.

> *His* [subject advisor] *answer was: Are you calling the parents? Are you involving the parents enough? I am telling him we do and some of these kids are parents, the learner is staying here with a brother who is also working. You call the brother, you find the difference, the age difference is about five years older, six years. So you really, I don't know.*

None of the schools had systems to accurately identify the learners who were HIV affected/infected or otherwise classed as vulnerable.

> *I don't think there are exact facts. We got some estimations* [sic]*, because people are ashamed to reveal their status and what happens to their families, for instance children who may be orphaned because of HIV/AIDS. So you cannot say that in this area we have statistics, it's all just estimates.*

Although one school had attempted to compile statistical records, the approach they used indicates that they could have benefited from some guidance. They had, with every good intent, circulated a form among learners and parents asking them to identify themselves if they thought they fell into the category of 'destitute children'. Not surprisingly, very few responses to this form were received.

The teachers also expressed a need for training in recognising and dealing with the social problems facing learners, such as sexual abuse, pregnancy and drug abuse. Although referral is the correct procedure in such cases, it was evident

that teachers required help to deal with the repercussions of these social problems as displayed by the learners in the classroom. In many cases, social workers did not respond to teachers' requests for help.

In terms of the *Department of Health*, teachers complained that the clinics were often staffed with poorly trained volunteers, who passed moral judgement on learners who were HIV positive or had a sexually transmitted infection (STI). These volunteers were also perceived to break confidentiality and disclose information to the wider community. As a result, learners preferred to go to clinics in other communities where they were not known. However, they often could not afford the fares or would miss school because they would spend an entire day travelling and waiting in queues. The clinics and school do not cooperate in terms of notifying each other when children have health problems:

> *The clinics will have to work hand in hand with us. But right now I don't know if they can give us those stats without it being a legal issue. We never sort of, how can I say, approached this issue of getting statistics here. We know there are children who have been treated for TB, but we don't know if they are also HIV positive or even if we know of all the children who are ill.*

Teachers repeatedly cited the behaviour of parents as a problem; mainly their refusal to engage their children in discussions around sexuality and the many social problems they faced.

> *Well, the parents here need. . . socially* ***these people*** [my emphasis] *need to be uplifted.*

The words used to describe the parents included 'illiterate', 'drug abusers', 'sexual abusers', and 'neglecters of their children'. Such perceptions are not exactly conducive to the creation of equal partnerships with parents in HIV & AIDS education. While it is clear that teachers would like the help of parents in approaching HIV education, they do not seem to be aware that their attitudes might be working against this.

Teachers experience problems in sustaining relationships with NGOs

Although many teachers did have links with church organisations or other helping agencies, they found that the latter tended to prefer once-off or limited

interventions, rather than working together to come up with a strategic, sustained plan to address issues.

> *Yes, we do have H. . ., but H. . . is not assisting us with the whole school. H. . . is assisting; having a few learners who are willing to be part of H. . .They are just learning how to abstain and how to deal with themselves when they get the boyfriends. Then we take up the difference. So we have H. . . and the NGOs are sometimes calling us for the short courses about HIV/AIDS in different schools here in Motherwell. But it only ends there when they call us, they do not come up here to visit us about the exact things that is* [sic] *happening in the school.*

The programmes offered by the NGOs are 'ready-made' and not geared specifically for the problems facing that particular school, as the quotation suggests. Often, there is no follow-up since no feedback can be given to the teachers, because of the confidentiality aspect:

> *Sometimes they* [specific NGO] *arrange a play around HIV & AIDS and prevention and all that, they do the play. Then they went along, the kids in the classroom. But they said to us that we cannot tell you, but we do get serious cases and things but they begged us not to tell you, their teachers.*

Theme 3: "We are stuck." Teachers are overwhelmed by concomitant social problems.

Teachers felt incapacitated by the vast array of social problems facing the learners, the schools, the parents and the community, especially in terms of prevailing stigma and extreme poverty, often aggravated by traditional cultural beliefs.

How do we overcome the community stigma?

Community stigma was blamed for the lack of disclosure of HIV status, making it difficult for the teacher to identify vulnerable learners:

> *The granny says, when the teacher asks: Where is your mother and father? the granny says, you must not tell that your mother died. So when I ask: Where is your mother? the learner will say, I don't know. Where is your father? Where is he? I don't know where is he*[sic]. *We are dealing with stigmatization. So they hide.*

This is consistent with findings (Gilborn, Nyonyintono, Kabimbuli and Jagwe-Waddaa, 2001; Nagler, Andropoz and Forsyth, 1995) that the stigma

experienced by people affected by HIV & AIDS leads to secrecy, as they attempt to maintain their sense of worth in the face of stringent community ideals and morals. Children, even although they are often not told of the real reason behind a family member's illness for fear of them exposing the 'secret' (Cree, Kay, Tidsall and Wallace, 2004), do pick up on the feelings of shame and tend not to talk for fear of being disloyal to their parents and caregivers (Daniel, Apila, Bjoprgo and Lie, 2007).

Teachers complained of the stress caused by not knowing how to offer support to vulnerable learners without adding to stigmatisation:

> *But we do need their* [DoE] *support, because even if, for instance, even if I form a support group here at school because of stigmatisation, you will find that those kids will be labelled, you see. So I don't know what must be done and how the Department must help us.*

No solutions for overcoming the stigma were suggested by the teachers, indicating that the call for teachers to adopt a humanising and critical pedagogy (Macedo, 2006) to address cultural silence may go unanswered, unless they are helped in this regard.

How can we deal with the effects of poverty?

Teachers felt overwhelmed by the social consequences of poverty. The lack of nutrition, adequate clothing, parental alcohol abuse, neglect and sexual abuse, were all linked by the teachers to the underlying problem of poverty.

> *Poverty is a challenge for all the parents of the school's learners. Poverty and TB. These are really challenges. Because, you can't teach a child who is hungry. As a result, in the first period in the morning, she has stomach aches, you take them, if we don't have the medicine here, take them to the clinic, only to find that she had nothing to eat in the morning.*

Poverty also means that learners and parents cannot access adequate health care and that many students drop out of school, due to lack of funds or the need to work to earn some money. Poverty was regarded as a main reason why girls entered into relationships that increased their vulnerability to abuse, pregnancy and HIV and STIs.

> *Another thing is the family's poverty whereby the females depend on the men for support and then they do everything the men do because they want to get money.*

> *Even then the kids here at school, they depend on men, some of them live at school with men, they do not live with parents, who will support them with their school things. So as a result is that they will do whatever the men want them to do.*

The helplessness felt by the teachers is evident in their voices and points to the fact that they need to assisted to view the pandemic, not as a paralysing catastrophe, but as an opportunity to mobilise community assets and strengths (Ebersöhn and Eloff, 2006) to find workable solutions.

How do we change cultural perceptions?

The teachers were aware that cultural barriers were hampering HIV education, such as the taboo about addressing sexual issues, gender inequalities and the tendency to attribute HIV to something other than a virus.

> *The other thing is the lack of respect, because the boys tend not to respect the girls. They wish to do whatever they feel like doing with the girls. So that is one of our problems, because I would say it is in our culture that the boys are supposed to be superior to girls. So that means that when they have engaged themselves in affairs they don't tend to respect the girls.*

> *There are circumstances in this community and culture, uhm, in their, in their culture that they don't really believe that there is such an illness as HIV/Aids.*

The teachers complained that education did not have any impact on the behaviour of the learners – they still engaged in unsafe sex and displayed gendered attitudes. They were at a loss as to how cultural attitudes and beliefs could be changed towards practices that rendered learners less vulnerable to HIV infection.

Cultural beliefs are indeed hard to change, since they are usually accompanied by cultural silence (Allen and Heald, 2004), that prohibits discussion about issues that underlie social structures that preserve existing power relations. Cultural silence also helps to promote denial, since it is easier to hide behind the 'we don't talk about this in our culture' attitude than to cope with the difficult questions and challenges that critical discussion would entail (Daniel *et al*., 2007).

Conclusion and discussion

The themes emerging from the data provide robust evidence to support literature that portrays schools as spaces where the consequences of the HIV & AIDS pandemic are acutely experienced by teachers (Lessing and De Witt, 2007; Theron, 2007; Jackson and Rothman, 2006). There is also a strong indication that teachers would benefit by interventions to raise their critical consciousness (Freire, 2004) around how their own attitudes and beliefs may influence their teaching. This would be a first step in enabling teachers to break free from culturally imposed constraints to seek more workable, appropriate ways to educate learners to become critically aware themselves of alternative responses to HIV.

The predominant view of HIV & AIDS presented by the teachers focused on the destructive impact of the pandemic on education, ignoring the potential for positive change. This created a vicious cycle of hopelessness, helplessness and despair at schools. Despite previous studies highlighting the need for a response to support teachers to adopt a more critical stance to HIV & AIDS education (Wood, 2009; Bennell, 2005; Simbayi, Skinner, Letlape and Zuma, 2005), it appears that teachers continue to position themselves as the helpless victims of a dysfunctional society, thereby increasing their sense of powerlessness and frustration.

The Department of Education tenders HIV & AIDS training to non-governmental agencies that develop programmes suited to their own particular strategic objectives. These may not take into context the reality of trying to educate in an environment characterised by numerous physical, social and psychological barriers to learning. Policy emanating from the Department of Education exerts additional pressure on the schools to protect the quality of education by mounting a 'coherent response' (Department of Education, 2003,) to address HIV & AIDS; the White Paper for Education (2001) shifts the responsibility for supporting vulnerable learners to the school (Hoadley, 2007); the Norms and Standards for Educators (2000), calls for teachers to take on a pastoral role normally regarded as the domain of social workers and other health professionals and encourages engagement with the community, while the literature calls for schools to become nodes of support and caring for those affected by HIV & AIDS (Badcock-Walters, Görgens, Heard, Mukwashi, Smart, Tomlinson and Wilson, 2005; De Lannoy, 2005).

Based on the picture painted by the participating teachers in this study, such demands for action from teachers and schools are based on ignorance of the current experiences of teachers in trying to deal with the challenges of the pandemic. Schools cannot be expected to become "agents for establishing, promoting and maintaining networks of care and support to protect the rights of children both in and out of school" (De Lannoy, 2005, p.2), when teachers perceive themselves to be helpless, 'stuck' in a hopeless situation, waiting aimlessly to be 'rescued' by the powers that be, and suffering while they wait.

The development of teachers to implement HIV & AIDS education needs to be prioritised. This could be facilitated by a critical pedagogical approach (Freire, 2004), aimed at raising awareness among teachers of the need to interrogate, deconstruct and reconstruct their social and cultural identities in relation to how they educate around HIV & AIDS. Critical consciousness-raising will also serve as the first step in breaking down the culture of dependency that resonates from the thematic analysis, and help to reposition teachers to perceive themselves as agents of social change. Once such insight is nurtured, teachers will be in a better position to critically evaluate existing social, political and cultural structures and practices, to envision alternative realities, and to pass on this vision to learners.

It also needs to be acknowledged that many of the factors identified by teachers in this study that hamper their attempts to care for and support learners, lie outside their control. Given the current dysfunction of many Government departments that are supposed to render a support to people affected by HIV & AIDS, it is also unfair to expect teachers to take on the roles that should be filled by social workers and nurses. This calls for action on the part of Government, to ensure that education, welfare, health and other related departments find a way to cooperate to offer support to those in need.

The findings of this study seem to indicate that HIV & AIDS education for teachers has to be radically transformed both at pre-service and in-service levels. We need to find ways to encourage teachers to critically engage with the causes and consequences of the pandemic; to create an emotionally supportive environment in which to do this; to protect their own well-being and that of the learners; and to view HIV as a catalyst for educational improvement rather than as an unmitigated, unstoppable disaster. This would entail a perceptual shift from *training* to *learning* about what shapes me and my teaching around HIV; from *giving answers* to *asking more questions*, enabling teachers to think differently as a precursor to behavioural change;

from *telling* them what to do, to *listening* what they need, involving them in their own development and encouraging reflective practice; from *prescribing* outcomes to helping them *challenge* instructional and regulative discourses (Bernstein, 2000).

In conclusion, the voices of the teachers in this study need to be heeded to promote the likelihood that teaching around HIV & AIDS is contextually relevant and contributes to a sustainable and just society. It is unfair to expect teachers to deal with the challenges of HIV & AIDS without first helping them to critically explore how the issues emerging from this study could be addressed.

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Lesley Wood
Faculty of Education
Nelson Mandela Metropolitan University

Lesley.wood@nmmu.ac.za

Outwitting, outplaying, outlasting: teachers' survival and resistance in a post apartheid high school

Jacqui Dornbrack

Abstract

Dramatic changes have occurred within education recently with the view of constructing a more equitable education system. However, entrenched practices remain, suggesting that teachers need assistance and support to reflect critically on their own and their institutional practices. While it has been recognised that training is essential, there does not seem to be sufficient conceptualisation of the complexity and difficulty of achieving 'second order change' (Evans, 1996) to shift entrenched beliefs. This paper discusses a case study research conducted at an ex model C[1] high school in which an intervention was designed to encourage teachers to become more critically reflective. Part of the intervention design was the construction of a regular, collaborative space in which teachers could meet and engage with sensitive issues.

Introduction

Significant shifts have occurred within the educational landscape since 1994 in an attempt to achieve equitable outcomes and address racial imbalances of the past. Some of these changes include decentralisation of educational control, redesign of curricula, restructuring of management and administration, introduction of different forms of assessment and the development of the NQF (National Qualifications Framework) (Chisholm, 2004). In addition to this, the South African Schools Act of 1996 as well as policies such as the Language in Education Policy (1997) and the Revised

[1] Model C refers to previously white, well resourced schools that chose the option to convert to semi-private and semi-state schools with partial support from the government and partial support from parents via school fees and fund-raising.

Nowadays the term ex-model C is used in an increasingly derogatory fashion to describe schools who are resistant to full integration and who are bent on maintaining middle-class, exclusive practices.

National Curriculum Statement for Grades R-9 have been developed with the express intention of eradicating discrimination and promoting a culture of equity and human rights. Therefore it can be said that major changes have been instituted at a national level. However, there is a concern with the effective implementation of many of these policies at the school level. Criticism has been levelled at the government for their apparent 'preoccupation' with 'policy struggles' rather than with practice (Chisholm, 2004 referring to Jansen, 2000).

One of the major criticisms about school desegregation is the dominance of assimilationist approaches (Sekete, Shilubane, and Moila, 2001; Sayed and Soudien, 2003; Soudien, 2004; Carrim, 1998) and the lack of transformation of the racial profile of staff especially at former model C schools (Moletsane, Hemson and Muthukrishna, 2004). There is also a growing disquiet over the ways in which the ex model C schools favour a racially mixed middle-class (Fiske and Ladd, 2004; Grant Lewis and Motala, 2004) since the majority of black learners who have access to the ex model C schools tend to come from middle-class homes. Learners who live in more outlying areas (and previous townships) are frequently excluded from attending suburban ex model C schools due to high school fees (although they can apply for exemption), transport costs and the difficulties associated with getting their children home safely from school.

While desegregation has brought about some necessary shifts, the primary change agents, the teachers, have been largely left unsupported in transformational issues. In an attempt to address issues of human rights and racism within education, two specialist forums were convened. One is the *Discussion Forum on Anti-Racism* in the Education and Training Sector and the other is the *National Forum on Democracy and Human Rights Education*. The former, which is no longer active, was hosted by the South African Human Rights Commission in October 2000–September 2002. During the two years of their existence, a number of reports, capacity development, networks and recommendations were provided. The recommendation most relevant to this paper was the need for anti discrimination training and education and the need to provide in service training (INSET) for all educators (Manjoo, 2004). While no level for training was specified by this forum, the development of the *Strategy for Racial Integration* training manual clearly states in its introduction that training needs to be implemented at all education levels (GET, FET, including FET colleges and Higher Education institutions). (Department of Education [DoE], 2006a).

The second forum developed to address racism is the *National Forum on Democracy and Human Rights Education* that was established in 1996 by the South African Human Rights Commission and the Independent Electoral Commission (IEC). Their primary aim is to facilitate and support the institutionalisation of human rights education in the new curriculum and support interests and activities in the field of democracy and human rights education (Manjoo, 2004). They work closely with non-government organisations, civil society organisations, government departments and state institutions to help build a culture of human rights. Membership of the forum includes democracy and human rights theorists and practitioners, lawyers, paralegals, children's rights specialists, chapter 9[2] institutions, teacher unions and provincial and national departments of education (Manjoo, 2004). One of the major achievements of this forum has been the successful lobbying of the formal educational sector to recognise the need for democracy and human rights education and the development of the Standard Generating Body (SGB) to generate unit standards and qualifications on human rights (Manjoo, 2004).

In addition to the above support, a special department (Directorate: Race and Values in Education) within the National Department of Education (DoE) has been established to work with office and classroom based educators to build democracy and a human rights culture. They offer resources and a two-day workshop for teachers. They have recently launched their *Strategy for Racial Integration (2006)* which has been developed to 'assist institutions deal with the challenges of integration' (DoE, 2006). This booklet (also available online) describes the strategic approach as well as provides a framework of action for establishing procedures for dealing with racism and providing support in the form of interventions and evaluations to institutions wanting to improve racial integration. The implementation plan of these strategies spans from 2006–2008 and includes the provision of training of educators, managers and district staff.

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2 'Chapter 9' are organisations developed according to the 'Paris Principles' to further develop the aims of democracy. One such body is the South African Human Rights Commission.

Second order change

However, I argue that while these forums and strategies are useful, insufficient attention has been paid to the hugely complex issue of implementing training which goes beyond the superficial and results in *second order change*. Second order change "requires people to not just do old things slightly differently but to change their beliefs and perceptions", (Evans, 1996, p.2). Central to achieving second order change is the need to acknowledge that implementation depends on the meaning the change has to those who must implement it. If we want teachers and school management to implement changes, we need to address how they understand the changes and how the changes will affect their identities, social investments, attachments, relationships and positioning in the structures. Because change provokes loss, challenges competence, creates confusion and causes conflict (Evans, 1996; Jansen, 2009a) understanding these feelings is vital to the successful implementation of any innovation. In the context of former model C schools, where the majority of the staff underwent their initial training during apartheid, issues of race, class, gender and language are bound to emerge and to evoke strong emotions. These feelings and emotions need to be recognised and managed with sensitivity (Obear, 2000).

Another aspect that needs to be considered when developing an intervention or training is the need to make sufficient time for change to be understood and worked through. Responses to change are so highly personal that individuals need to work through them at their own pace and become familiar with the new ideas and discover the associated costs and benefits. If the process is hurried, resistances are likely to become stronger and old values will resurface therefore training must include opportunities for teachers to "consider, discuss, argue and work through changes" (Evans, 1996, p.15).

Resistance to change

People tend to resist change and to assimilate reality according to existing mental structures; knowledge structures that have been formed over the course of their lives; 'knowledge in the blood' (Jansen, 2009a). Such knowledge, while not unchangeable, is extremely powerful as it has "been gathering since childhood, as well as having been handed down from before" (Macdara Woods in Jansen, 2009a, p. 171). This instinct to hold onto existing forms of knowledge and beliefs needs to be understood and worked with, rather than

seen as a major barrier. Resistance, anger, fear and confusion are inevitable and any purposeful attempt to bring about change needs to address this aspect. Therefore the issue of teachers' identities and shifts in their identities as they work towards achieving reform needs to be recognised as a critical component of change. Van Veen, Sleegers and Van de Ven (2005, p. 918) argue that most research on teachers' reactions to change attend to the rational and cognitive responses and fail to explore the "layers of emotion that seem to be involved".

Pressure is also vital to innovation as it makes the change inevitable. Pressure usually implies the use of power. Power does not only mean coercion it can also mean influencing people to achieve goals. This influence is more likely to be attended to if it comes from above, as in the Headmistress/Master or the Department. In South Africa the policies and structures are in place to exert pressure. However the power historically ascribed to the school management and governing bodies of ex model C schools, has allowed these institutions to retain the status quo and avoid committing to real reform. Therefore it is significant that in the *Strategy for Racial Integration* the need for staff and leaders to reflect the demographics is clearly stated as a primary task. This is an essential aspect of promoting equity within ex model C schools.

Change in South Africa

Having examined general concerns of school transformation, I now turn to a more local context: high school educators in post-apartheid South Africa. I believe that despite desegregation among staff, there are very few spaces in the schools where teachers of different backgrounds can talk openly about their past and critically examine their metaphorical 'knowledge in the blood' (Jansen, 2009). This knowledge has accumulated over years of living during and after apartheid and it impacts directly and indirectly on the ways they go about their daily work of being teachers in a school with diverse learners. South Africans in general do not easily discuss their past because it is painful and "South Africans don't want to go there", so argues Jansen (2009b, p.19). He believes that it is essential to talk through these issues as he claims that "if we don't talk about the past, we cannot go through the past" (Jansen, 2009b, p.19**).** Therefore the intervention that I discuss in this paper was conceived of as the construction of a space to facilitate teachers of different backgrounds, languages, age, gender, class and race to start talking to each other about the institutionalised practices in their school. However, it could not just be a social space for general discussion. It needed to be ontological and epistemological

where teachers could take risks and openly discuss their concerns and understandings about the changes that had occurred in their school over the previous years. It also required of them to commit to addressing practices which were found to be discriminatory. I use the notion of thirdspace[3] (hooks, 1990; Bhaba, 1994; Soja, 1996) to conceptualise this space. Before exploring thirdspace, I provide the reader with some background and methods used to generate and analyse the data for the study.

Background

According to Sleeter and McLaren (1995), the dominant culture of schools mirrors that of the larger society and teachers and learners willingly and unwillingly situate themselves within structures and practices that reinforce and constitute the unjust race, class, gender and cultural affiliations of their societies. Teachers therefore partake in a 'culture of silence' that teaches learners to accept and homogenise in order to 'fit in' and not stand out as 'different'. Rather than transforming the fundamental nature of the school and its rules, its sports and its practices, most schools have simply set in place mechanisms to help accommodate learners who are not white. These mechanisms include using cross-cultural music programmes and multi-faith assemblies (Carrim and Soudien, 1999). Many adjustments made by previously white schools are constructed within a discourse of disadvantage which perpetuates the notion that the black learners are the ones who must change to fit in with the existing norms of the school. These kinds of practices maintain discrimination and disallow equal opportunities for success but have become naturalised in the school. Therefore my primary aim of setting up a dialogical space was to encourage the teachers to become more critical so as to identify events, routines and discourses that served to exclude rather than include all learners.

Methods

I was invited into an ex-model C school in the Eastern Cape (1000 learners, 40 per cent 'black' 60 per cent 'white') by one of the white teachers who had taught there for many years. She was concerned about certain practices in the school which she felt discriminated against black learners. After a discussion

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[3] I use the single term, 'thirdspace' as used by Soja and hooks. Bhaba depicts it as two separate words, third space.

with the Principal and District Office of Education, I addressed the 50 staff, (47 white, 3 black) inviting them to volunteer to join me approximately once a week for an hour, for a one year period to critically reflect on issues relating to difference (race, gender, language, age, class and background). Initially seven teachers volunteered – all were white. Believing that it was essential to have as much diversity in the group as possible, I approached one of the black teachers and asked him to consider joining; he agreed.[4] This meant I had eight teachers, (one white male, one black male and six white females) whose ages ranged from 23–50. There was a variety of subject disciplines and three were Afrikaans mother tongue speakers and the rest were English.

Each teacher was interviewed to obtain biographical and professional details and asked to discuss concerns they had with diversity in the school. On completion of the eight interviews, I set up focus groups where all eight teachers and myself met regularly in the library before school and during the assembly period. Being granted permission to meet during the school day significantly assisted the intervention.

Teachers were given readings and tasks to prepare for the focus group meetings (FGs). The selection of readings/tasks was based on issues that emerged from the interviews and discussions during the FGs. Readings included a summary I had written on the various approaches to multiculturalism; an article on gender issues in education (Dale Spender), and a diversity grid where teachers were asked to tabulate the top and bottom academic achievers in their classes in terms of race and gender. Focus groups were spent either discussing the readings or discussing any concern or issue that teachers raised. Sometimes teachers wanted to discuss incidents or events that had occurred in that week. While I usually had pre-planned some activities, I allowed myself to be led by the needs of the group. During the 13 FGs over the period of 18 months (the initial estimation of one year was insufficient) we spoke, argued, challenged, contradicted each other and became angry and defensive. At times, when the emotions became too intense, some teachers resorted to tears. Since the space was conceptualised within a framework of a 'thirdspace' I was able to make sense of the intensity of emotions and shifting, often contradictory narratives which took place in the library.

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4 Having only one black teacher was not ideal as it meant that he carried the burden of sharing the knowledge of 'the racial other' but I deeply appreciated his participation which was critical in providing alternative experiences of living during and after apartheid.

Thirdspace

Recognising the spatial nature of humanity is essential according to Soja (1996, p.1) who believes that we are, and always have been "intrinsically spatial beings, active participants in the social construction of our embracing spatialities". Rather than having expansive ideas with infinite possibilities, we tend to confine our thinking to established, fixed notions thereby limiting new understandings and the creation of new knowledges. Our thinking often revolves around established binaries of one or the other without a consideration of a third or more possibility. The concept of "neither one or the other but something else besides" (Bhabha, 1994, p.28) contests this narrow thinking.

Employing the notion of thirdspace to construct and interpret the practices of 13 focus groups of the teachers enabled me to see my intervention as a political act, one that deliberately sought to challenge the teachers to reflect critically on taken-for-granted practices that were unjust and discriminatory. This meant that the space I had constructed became, at times, "a difficult and risky place on the edge, filled with contradictions and ambiguities, with perils but also with new possibilities: a thirdspace of political choice" (Soja 1996, p.97). A sense of new possibilities was achieved by the emergence in the space of new discursive constructions. Some of the teachers shifted from talking about learners in essentialised, fixed ways and started to construct alternative discourses that included more nuanced, fluid notions of difference. It is believed that discursive shifts lead to epistemological shifts, which in turn result in transformed notions of subjects and subject positions (Foucault, 1972; Fairclough, 1992).

An important aspect of the space is that the teachers viewed it as a safe space where they could challenge dominant practices and disagree with each other without damaging the personal relationships that had been established. The concept of safe houses is used by Canagarajah (2004, p.121) to capture the *underlife* of students (Goffman, 1961 in Canarajah, 2004) in institutional contexts who resist dominant discourses by taking up alternative identities and practices. He explains that safe houses in academic institutions are sites that are "relatively free from surveillance, especially by authority figures, perhaps because these are considered unofficial, off-task, or extra-pedagogical". While my intervention cannot be regarded as 'underlife', 'unofficial' or 'off-task', it was away from surveillance and it allowed the teachers opportunities to share aspects of themselves that were other than those institutionally desired. The

act of reflecting was legitimated by the Headmaster's approval and he never subjected the reflection to any kind of surveillance or monitoring. Teachers could say things that they felt unable to say in the more formal spaces of the staffroom or staff meetings. Also, it was safe in that the teachers agreed to retain confidentiality of what was discussed and this allowed the teachers to reconstruct and rethink their own assumptions and beliefs in light of alternative histories being shared.

Another important aspect that allowed the space to be safe was its detachment (in terms of space and time) from the institutional practices. This enabled the teachers to have some sense of distance and freedom to explore ideas and imagine previously unthinkable ways of managing difference in their school. It was in this sharing and introspection that the possibilities of thirdspace started to emerge.

Hooks (1990) deliberately positions this space in the margins, "a profound edge" which she admits is difficult, risky but also nurturing. It is difficult because the space requires of one to delve into personal issues and to listen to views that challenge and disrupt. It is risky in the sense that it seeks to challenge all forms of oppression and dominant groups do not easily accept such resistance. It is nurturing because the space is about dialogue, building solidarity and "engaging in critical dissent without violating one another" (hooks, 1990, p.19). This is a space of 'radical openness' where new epistemologies are collaboratively negotiated and ontologically experienced. As hooks explains:

> We are transformed, individually, collectively, as we make radical creative space which affirms and sustains our subjectivity, which gives a new location from which to articulate our sense of the world (1990, p.153).

Particularly useful to my research is hooks' conceptualisation of thirdspace as dialogic, transformative and communal. She conceives of thirdspace as a space in which knowledge can be constructed, debated and transformed and where people themselves are transformed in this process. She also conceives of it as a space of affirmation and sustenance, a space where people, constructed by those in power as the Other or as 'different', can validate and share their ways of seeing the world.

I now present selected data generated from the interviews and 13 focus groups as well as briefly discuss the role that I played in this space and why I considered it be to be a 'thirdspace'.

My role in the thirdspace

The roles and subjectivities taken up by a researcher during an intervention as well as the shifting roles and new subjectivities embodied by the participants is a critical component in a study such as this. However, since it is not the main focus of this article, I discuss it briefly conceding that it requires a far deeper and more complex discussion elsewhere.

I was originally positioned by the Head as an outside researcher coming to look at diversity in the school. Within the data gathering, I took on multiple positions: among others, I took on the subjectivity of a facilitator (to allow various contributions and allow for all to participate freely), mediator, (to manage conflict and strong emotions from becoming destructive), spokesperson for the group (during a meeting held with the teacher volunteers and management where they were silenced by the authoritative stance of the three-man strong male presence), empathic listener, devil's advocate (when they became complacent or uncritical about issues) and therapist (I frequently received emails and phone calls after FGs from participants who needed to talk more or who needed to explain something they had said). I made it clear from the start that I was not a neutral researcher. I was committed to promoting equity and while I encouraged teachers to discuss their views openly, I indicated that I would listen to all views, but contest racist, sexist or overtly discrimatory comments. My status as university lecturer gave me credibility and access to relevant materials and resources.

As the participants in the focus groups became more critical and vocalised more publicly (at staff meetings and in the tearoom) their disapproval of some of the school events and practices, my position in the school became more tenuous. Towards the end of the eighteen months, I was informed by the Headmaster that he did not approve of what I was doing at the school and that my "job as a researcher was not to be critical or ask what could be changed but simply to report on what I found". I was asked to leave.

I was not the only one who seemed to disrupt the established norms; importantly some of the group members started to challenge existing routines and norms. One of the participants took over the contested detention system in the school in the following year and another stood up during a later staff meeting and challenged a comment he found to be racist and insensitive. However, on the whole, the group found it difficult to make any long-term meaningful changes in the school and two of the teachers resigned a few

months later and went to teach elsewhere. The teacher who attempted to change the detention system made significant changes but by the end of the year he was taken off the detention, despite his wishes, and told that his new responsibilities were to be viewed as a 'promotion'. The detention was given back to one of the previous managers. Having provided this brief interlude, I now turn to the data.

Data from the focus groups

Teachers' fears

A significant finding of this research was the high level of fears that the teachers in this school experienced. With such fearful dispositions, it is unlikely that teachers would be prepared to take risks and be outspoken about issues they found uncomfortable or disagreeable. It is far easier to 'go with the flow' and avoid causing conflict. Here are some of the reasons for their fears:

- Fear of the effect that challenging colleagues would have on one's relationships
- Fear of conflict and confrontation
- Fear of disagreeing openly with someone
- Fear of pushing people further away from one
- Fear of standing up in staff meetings
- Fear of confronting management
- Fear of exposing oneself and making oneself vulnerable
- Fear of being seen to be subversive
- Fear of being labelled as troublemakers
- White teachers fear being called racists

It is significant that the teachers felt comfortable naming and discussing their fears which suggests that there was a sense of trust and nurturing in the group and that the participants were able to explore vulnerable aspects of themselves with their colleagues. It is equally significant that a number of their fears related to damaging interpersonal relationships by disagreeing with colleagues. Hargreaves (2002) suggests that the fear of confronting conflict and of destroying friendships among teachers is well documented and that

teachers typically avoid conflict by establishing norms of politeness or non-interference. However, this reduces teachers' capacities to work through differences and disagreements (Hargreaves, 2002). It also reduces teachers' abilities to address issues in their school which may result in unfairness. Hargreaves (2002) argues that trust is required if teachers are going to overcome this fear. If teachers feel uncomfortable challenging and disagreeing with decisions made by colleagues and managers, the chances of transforming unfair practices are minimal.

The huge cost of dissenting with dominant views is clearly illustrated by one of the participants, Mr MM[5], who is relatively new in this school. He decides not to make the same mistake as he did in his previous institution:

> unfortunately the school I come from, uh, if you always speak your mind you are going to make enemies, whether you are speaking the truth or whether you are speaking. . . and uh, I don't know if I am ready to, to spoil certain relationships. I think I get along well with everybody on the staff, and I don't know if I'm ready to put that on the line for something that I don't know, that I might be convinced about but everybody else is not. That I feel strongly about, but everybody else is not. And I can feel strong about certain things, I must be realistic. Also, there are certain things I'm not going to change. Or that might take a very long time to change. So I don't think I've reached that stage and I've had a very, got close to a very in-depth discussion with one of the staff members and I had to stop along the way because I felt if I take it any further that, it might, uh, harm our relationship (pause). Its fine to be honest and to be open and, but I don't know, um.

His hesitation and reluctance to disrupt newly developed relationships in order to change things that are clearly not easy to change are understandable. Disordering established patterns of doing things at any school take its toll on those brave enough to speak out. So while Mr MM is fully aware of routinised practices that are unfair, he is 'realistic' about the sacrifices needing to be made and rather takes a more strategic position of keeping his views to himself and retaining his friendships among colleagues. However he is able to talk about this painful decision to the other participants thereby sharing a personal conflict he has within himself. Such disclosures invite solidarity and deepen relationships.

Likewise another teacher in the school reinforces the need to be selective about what one challenges as there are material consequences for challenging those in power:

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5 All names used are pseudonyms.

> But that is not the ethos of the school. The staff in the school are more, you're my friend and I'm going to favour you and I'm not going to say anything because I'm going to offend you and anyone, but you can't just be like that. You have to be given courage to become like that and you've got to be trained and you've got to be shown and it's a big distinction. And one has to be brave. It takes me saying, "MM, I disagree with you," and you've got to have confidence in me that tomorrow I'm still going to have a cup of coffee with you, and I'm still going to talk to you. It doesn't matter that I disagree because it's the issue, not the person. And that is a big culture in the school that is here, you know, and people are scared to talk up in meetings because they're scared. If I disagree with . . .then she's going to give me six extra periods or I disagree with Mr . . . he's going to cut my budget, you know, you know, there is going to be a way. He's going to stand and, "Ja, okay," but my departmental budget is going to be gone.

This extract reveals, once again, the conflict between retaining friendships versus making professional and moral judgements. This young teacher, Emily, after having taught at the school for two years, has clearly identified the staffroom politics and knows that not only are friendships affected by going against the dominant ways, but that there are also material consequences. If one 'disagrees' with the management one is subtly 'punished' by being given 'extra periods' or 'a cut in budget'. Therefore there are personal and professional consequences for 'talking out'. This teacher aptly identifies that teachers require training and encouragement, as well as 'bravery' to take on those in power. The issue of power and power relations therefore is critical in any kind of training initiative.

Emily, is able to discuss the risky topic of favouritism and unfair treatment among the staff as well as the authoritarian management in the school. It is obviously not easy to challenge management during the staff meeting but she is able to do so in this space which suggests that she has grown to trust her colleagues and trust that her views will be kept confidential.

It is in the space of the focus groups that teachers are able to talk honestly about their reluctance to go against the grain of the school practices. They are also able to criticise the way the school is managed. This opens up a space for others to voice their concerns and to become more critically reflective of the established norms and the imbalance of power between management and staff. So says Mr MM:

> We are not empowered. We are not empowered. We just come to school and do your thing then you go home. You are not involved in decision-making, you are not involved. Your involvement is as far as what management tells you what to do and what not to do, what's acceptable and not, what's acceptable and that. How does that leave you? Teachers' morale in general is low, in this, not as low as in the township schools but in another way. . .

Teachers in this school had few opportunities in which to put forward their ideas or suggest alternatives. The only space provided for them was during staff meetings which, from what they indicated, were highly controlled and regulated. This can be inferred from Emily's comment:

> He [headmaster] decides on what issues he wants to pursue: "Okay, let's wrap it up because we've got enough of what's going on here." That is the flavour in the staffroom. You deal with certain issues and if you raise one it's up to his prerogative whether he allows a discussion. Sometimes he does, sometimes he actually jots it down in a meeting. And at the moment there's nowhere you can raise something on the staff meeting again. Clearly in this school, limited opportunities existed for teachers to have a say in the running of the school and in making a space for new ideas and practices to emerge. Given such rigid conditions, it seemed unlikely that teachers would become change agents and push for change. However being able to collaboratively identify the constraints within the management structures, the participants were able to identify strategies that would allow them to give input and have their voices heard. Knowing that direct methods of challenging management were risky, they discussed alternative strategies. One was *canvassing support* before a meeting, although it could prove risky. As one teacher explained: You basically need to get a support group to canvas, but the danger is you need to challenge with the knowledge that your support group will support you all in whatever way, and I'm not convinced that you are going to have that support.

What this teacher recognised was that while it was relatively easy to commit to supporting a point of view; it was not always as easy to maintain that dissent in the space of authority and power. Constructing a space where committed teachers could share ideas and establish stronger relationships would enable them to form much-needed trust and solidarity.

Another strategy teachers used was to *involve other teachers perceived as powerful and credible* and *bring them on board*. This is what they believed happened at a meeting where it was suggested that the number of detentions given to learners be recorded on their term reports. The teachers, in an unusual show of support of each other indicated that they did not think it was fair to record detention sessions on a term-report. The unusualness of this kind of challenge is evident in one teacher's reaction to this:

> I was, I was, I was, I'm telling you I was shocked, [and] surprisingly, I enjoyed the fact that teachers voiced their opinions and they said no. It was a good feeling, it was empowering.

Discussing further why this particular meeting *worked*, one teacher, discussed the reasons for the success:

> Sorry, you know why that meeting worked? Cause, what you're saying is absolutely right and this is what takes so much energy at this school. It's like playing Survivor, you've got [to] outwit, outplay and outlast, okay. The reason why the meeting worked it's because Mary

> raised the issue. Mary was the one. Mary is perceived, and she is, she's very intelligent and the Head trusts her creditability and she raised the issue and she disagreed with it. She said I don't agree that it should be on and that everyone went (noise of exclaiming). And that's actually, I think, why that meeting worked.

This extract raises the important issue of power and credibility. Certain staff members are afforded more power than others due to a variety of attributes: gender, age, and years of service, personal characteristics, skills, leadership and types of knowledge as well as personal friendships. In addition, certain people are more powerful because of their alliances with those in power or with their perceived acceptance of the authority. Still discussing Mary the conversation continued:

> **Emily:** And Mary works with the reports. So, it was a credible person that stood up. . .
>
> **Alison:** I agree with what Emily is saying and I think it helps a hell of a lot if you are knowledgeable and you can convince people. What you're saying about hmmm, about Mary.
>
> **Emily:** She's also very non-threatening.
>
> **Suzie:** Hmm, yes, ja.
>
> **Alison:** But what does that say? That only non-threatening people are allowed to raise an issue?

Realising that some people had more power than others did, the teachers suggested that they could involve certain teachers whom they believed had the power but also who *felt like they felt*. While this did not directly give the teachers agency, it did allow them to have their views heard. Mary had obviously been able to work with the politics of the staffroom and challenge the headmaster without him feeling threatened. This demonstrates that schools, like most social organisations, are "arenas of struggle" (Ball, 1987 in Gillborn, 1995, p.94) and essential to affecting change is the need to recognise the central role of power and politics that shape the routine interactions inside schools' (Gillborn, 1995).

Discussion

The evidence generated from the case study reveals the complexity of implementing any intervention or training. Two-day training sessions and once-off training are unlikely to develop the 'professional trust' (Hargreaves, 2002) necessary to enable staff to engage in sensitive issues that are required

for the reconstruction of identities and practices more in keeping with equity and human rights. Providing regular spaces over an extended period where teachers can take risks and openly reveal their fears and concerns creates a sense of shared vision and camaraderie. Exposing fears and vulnerabilities allow participants to develop closer and more intimate relationships and friendships. Such relationships are more likely to withstand disagreement and criticism. Another important result of the focus groups was that the single black teacher realised that he was not alone in his concerns and that other teachers were also critical of certain events that had taken place in the school but that they felt disempowered to act on them.

The diversity in the group was essential. Being able to hear input from a black South African who had very different experiences during and after apartheid was a critical component of the thirdspace as it allowed white teachers to hear different knowledges and understand the limitations of their own knowledge. It is important that the construction of such a space should not be allowed to become a whinge space where teachers complain and gossip; it needs to be a space that encourages critical dialogue and enables engagement of critical dissent without violation (hooks, 1990). Rather than simply complain about issues at their school, I encouraged the teachers to identify the conditions under which such issues had emerged and discuss how those conditions could be shifted.

It is significant that during the period of the focus groups, the participants were able, through their dialogue with others, to shift their subject positions. An example of this is where the participants were reflecting on the lack of power and opportunity to voice their grievances; they positioned themselves as disempowered and marginalised. However these positions changed when their discussion turned to the multiple ways in which the school management had been challenged and how teachers had achieved solidarity against something they found to be unfair. Thus it can be said that the communal space allowed the participants to transform, both individually and collectively by re-examining and reforming their dominant epistemologies about each other and about their school as well as shifting their ontological beliefs and values.

A shortcoming of the design of this study was that it excluded the management of the school. The participating teachers started to make significant shifts but the management had not been given this opportunity and were therefore still ‘stuck’ in the same place as before. This led to conflicting views and discrepancies and polarised teachers from the management. A more

constructive design would have been to have parallel focus groups with the management and to have held occasional joint sessions between the two groups.

A second possible limitation of the design was that the transformation had occurred among a small group of staff and the likelihood of it spreading among the other staff was small. Towards the end of the research period, I suggested bringing in more teachers but the group felt that it would disrupt their cohesiveness and trust. So we decided, instead, to give feedback to the rest of the staff to share some of the insights we had learnt. This limited sharing was not ideal. From continued correspondence with the participants via email and phone calls after the research had ended, I knew that some of the teachers had continued to work towards change despite the numerous constraints they encountered. If management had been more involved in the whole process, the continuation of change might have been more significant.

Conclusion

In spite of the limitations, I believe that the construction of regular, safe spaces within schools led by either outside researchers or facilitators can be highly beneficial in working towards achieving more democratic school practices. What was significant about this study was that the teachers themselves identified practices in their school which they wanted to address. I simply facilitated the process and provided them with various theoretical resources and the space in which to reflect on and collaboratively explore these issues. Attempting to impose a predetermined, generic intervention would have not achieved the same levels of commitment and passion. Allowing the intervention to be led by the teachers themselves created deeper involvement and a greater chance of second order change occurring. Thus it can be said that the highly contextualised and situated nature of this intervention was a critical aspect of its achievements. While the exact intervention could not simply be replicated in any context, I believe that certain aspects of the design could provide useful pointers for further INSET for teachers.

I would recommend that the following points be considered when attempting to construct a thirdspace:

1. **The place, time and regularity of the meetings:**

   Changes take time and staff need to meet regularly and often if trust and solid friendship is to develop. Without this, it is unlikely that teachers will be prepared to share vulnerable aspects of themselves and share conflicting views.

2. **The composition of the group**

   The diversity of the group in terms of race, gender, language, subject disciplines, age, rank and experience allows diverse opinions and multiple views on issues. If everyone agrees with each other, the likelihood of growth and knowledge shifts are limited. In the model C school context, it is essential that different race groups are included so as to hear about different lived experiences to disrupt the often entrenched notion of one absolute truth. It is also important that teachers of different age groups are included as despite younger teachers coming from the 'born-free' generation, they still hold onto the knowledge transmitted by their parents (Jansen, 2009).

3. **The input the group will receive**

   The group needs to be guided and to receive both personalised knowledge from the participants as well as theoretical knowledge on concepts such as critical multiculturalism, equity in education, gender and racism in education and the dominance of 'knowledge in the blood'. Reading should not be prescribed and pre-determined but should be available if and when needed or requested. It is essential that participants are allowed to freely discuss their concerns and emotions but that they are presented in a respectful manner so as not to degrade any participants.

4. **The inclusion of an outsider/researcher**

   While an insider can facilitate a thirdspace, it seems that an outsider is more able to provide an 'objective' perspective on the school. An outsider is also protected, to a certain extent, from the internal school politics and is able use her outside position to push for change. However it is essential that this person is skilled, sensitive and ethical to ensure that the personal and professional lives of the participants are not compromised.

5. **The interlink with management**

   If the management of the school does not 'buy into' the proposed transformation, nothing significant can change. Therefore it is essential to allow a safe space for management to work through changes and their own fears and sacrifices in their own time and space. While there should be collaboration between the groups of teachers and of management, it is important to allow them separate spaces as the needs and responsibilities of the two groups are different.

6. **The power relations in the school**

   Since all schools are 'arenas of struggle', it is imperative to acknowledge and work with the power relations in the school. Instead of viewing power as only hierarchical, power needs to be understood as a 'productive force' (Foucault, 1972) which is

> closely linked with knowledge. As Foucault explains, "it is not possible for power to be exercised without knowledge and it is impossible for knowledge not to engender power" (Foucault, 1972, p.52). Therefore teachers should be encouraged to learn about the power networks in their school and to have knowledge of how things work so as to be able to use this knowledge to gain access to powerful spaces. Working with those in power and using one's knowledge of how things work enables one to no longer view power as fixed and inaccessible but rather as power existing in all of us to make a difference.

In conclusion, this paper has discussed the many complex forces that come into play when teachers identify unfair issues in their school and want to challenge them. Teachers need to take on identities as agents of change and be provided with the knowledge and space to publicly voice their understandings, build up alliances and identify strategies to address exclusionary practices. They also need time and safe spaces to work through the losses and difficulties inherent in shifting perceptions and disrupting entrenched, hegemonic practices. Therefore if we are to assist in making real change in schools, we need to provide teachers and management with the resources and time to enable them to identify what needs to be changed in their schools and then equip them with the necessary theoretical and affective support to act on their insights. Generic two-day workshops can never achieve this level of reflection, without which second order change is highly unlikely.

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Jacqueline Dornbrack
Department of Applied Languages
Nelson Mandela Metropolitan University
and
University of the Witwatersrand

jdornbrack@sun.ac.za

A conceptual framework for analysing the selection and organisation of content in teacher education materials

Yvonne Reed

Abstract

Bezemer and Kress argue that all texts are 'potentials of a quite specific kind' which in their specificity constrain the ways in which they can be read (2008, p.4). In distance education materials, the designers'[1] selection and organisation of content on the page or screen contributes to the ways in which their materials can be read. In this article I describe the process of conceptualising a two-part framework for analysing the selection and organisation of content in teacher education materials. I then use the framework to analyse the designers' content and organisational choices for the topic 'Reading' in three sets of South African teacher education materials. I argue that comparing and contrasting these design choices contributes to understanding the subject positions offered to readers as students and as teachers.

Introduction

Morrow (2007a) argues that teacher education in South Africa must be concerned both with formal access to institutions of learning (i.e. access to programmes of study) and with access to specialised epistemology. For more than half the students enrolled in pre-service and in-service teacher education programmes in South Africa, formal access is through distance education programmes (Glennie, 2003). While teacher educators working in campus-based programmes can adapt their teaching to respond to evidence in the lecture or tutorial room of their failure to construct appropriate 'learning pathways' (Moll, 2003), designers of distance learning materials face the challenge of mediating content in ways that anticipate what pre-service or in-service teachers may experience as, for example, 'relevant', 'interesting' or 'difficult' when they engage with course materials.

[1] The term designers includes authors, illustrators, editors and any other professionals involved in the conceptualisation and production of texts.

The designers' selection and organisation of content on the page or screen contributes to the education discourse of the materials. Ivanic (1997) describes discourse as 'the mediating mechanism in the social construction of identity':

> *discourse,* as an abstract noun with no plural, means something like 'producing and receiving culturally recognised, ideologically shaped representations of reality'. The term refers more to the **process** of representing reality than to the product, but encompasses both.
> . . .The term can also be used as a count noun *a discourse*: this means something like 'a culturally recognized way of representing a particular aspect of reality from a particular ideological perspective.'
>
> (Ivanic, 1997, p.17, italics, bold type and quotation marks in the original)

In distance education materials discourse as process, product or both offers readers particular identity positions. Such identity positioning may influence pre-service or in-service teachers' 'investment' in a programme of study (Norton, 2000; Toohey, Day and Manyak, 2007), with the positions offered being accepted fully or ambivalently, contested or rejected.[2] Work in progress towards understanding the identity positions offered in three sets of South African teacher education materials has included reviewing local and international teacher education literature on the selection and organisation of knowledge for teacher education programmes.[3]

In this article I describe how I have used the work of Banks, Leach and Moon (1999), Cochran-Smith and Lytle (1999), Adler, Slonimsky and Reed (2002), Darling-Hammond (2006) and Morrow (2007) to conceptualise a two-part framework for analysing both knowledge selections and the organisation of knowledge in teacher education materials. I then demonstrate how I have begun to use the framework to analyse the designers' selection and organisation of content on the topic of 'Reading' in three sets of South African materials and reflect briefly on the framework's possible value to designers and evaluators of teacher education materials.

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2 Norton (2000) derives the concept of 'investment' from Bourdieu's work on cultural capital and uses it to argue that learners (of English as an additional language in the context in which she is writing) 'expect or hope to have a good return on that investment – a return that will give them access to hitherto unattainable resources' (p.10).

3 Other aspects of the study consider how a range of mediation strategies (e.g. in-text activities, scaffolded readings, visual design and language choices) offer particular positions to readers as students and as teachers

The material on 'Reading' is taken from:

- *Learners and Learning* (2001), a module in the South African Institute of Distance Education's (SAIDE) Study of Education series, designed for use in both pre-service and in-service teacher education programmes, for which the materials consist of a learning guide, a reader and an audiotape

- *Language in Learning and Teaching (LILT)* (2000), a module in the University of Natal's BEd. programme (subsequently a module in the University of KwaZulu-Natal's BEd. Honours programme), designed for in-service teachers with a four-year qualification, for which the materials consist of a two-part course book – a learning guide, followed by a collection of readings

- *Language. Literacy and Communication Umthamo 2* (1999), a module in the University of Fort Hare's in-service BEd. degree offered to 'underqualified' primary school teachers in the Eastern Cape[4]

The framework has been conceptualised in terms of elements of a knowledge base for teacher education and in terms of the orientations to knowledge that are suggested by the organisational design of course materials.

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[4] It is important to note that each set of materials has been recognised as an example of 'best practice' within the local and international distance education community. For example, materials from the University of Natal's BEd. programme in which the module *Language in Learning and Teaching* is located, were highly commended in the inaugural National Association of Distance Education Organisations of South Africa (NADEOSA) awards for excellence in distance education in 2000. The six *Language, Literacy and Communication* imithamo are an important part of the BEd. materials for which the University of Fort Hare won the NADEOSA award for excellence in 2005. The materials designed by SAIDE, of which the module *Learners and Learning* is one example, have received both local and international acclaim. In 2002, Alan Tait from the UK Open University commended SAIDE for its 'fearless work' which has 'lit a torch for educational opportunity for all, in conjunction with the most effective of contemporary approaches to distance education' and for work which has 'not only been notable within South or even Southern Africa, but has a reputation world-wide for the impact it has made' (quoted in SAIDE, 2002, p.4).

Conceptualising a knowledge base for teacher education

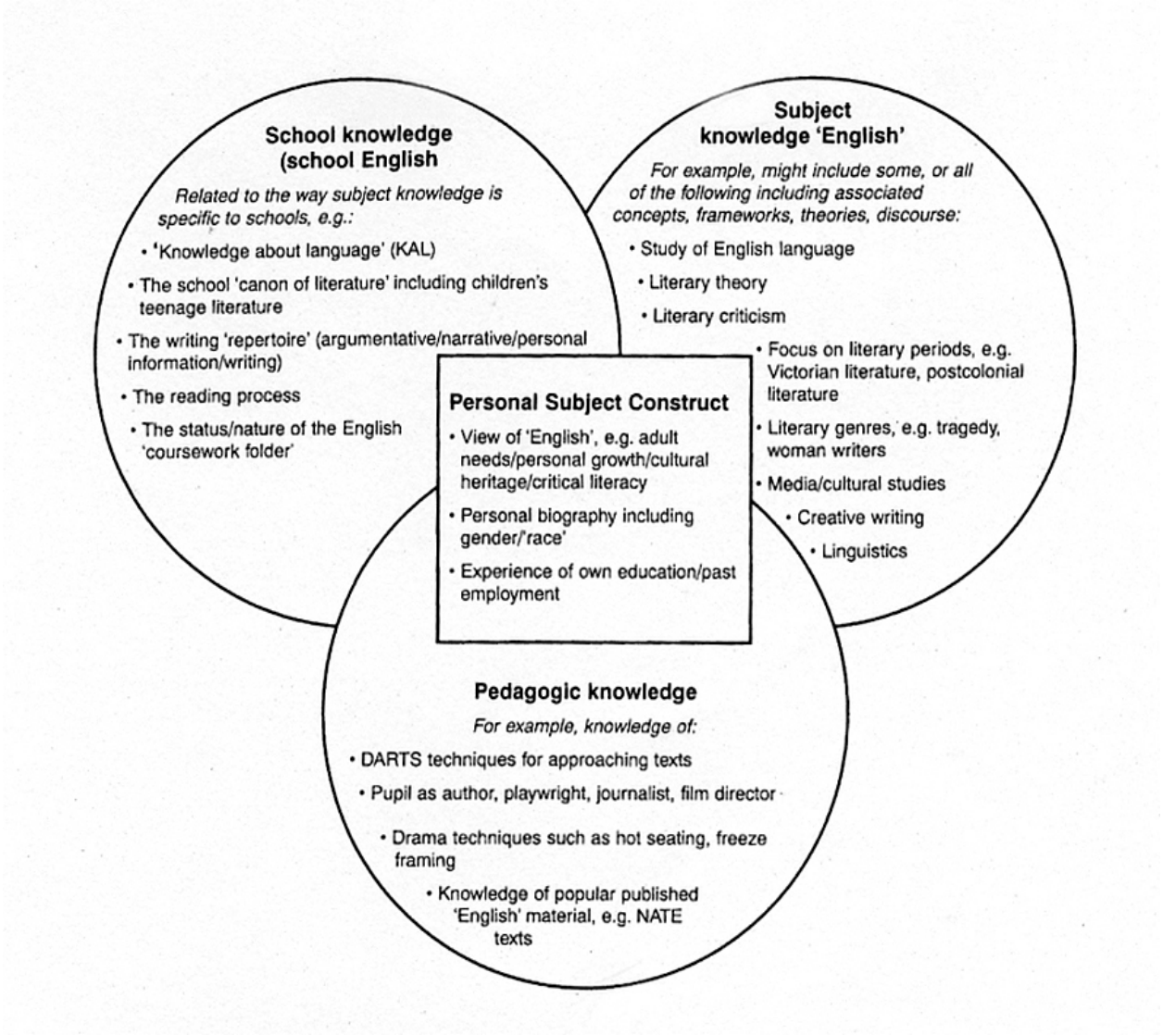
It could be argued that the category 'teachers' knowledge' emerged only in the early 1980s and it is evident that both what counts as professional knowledge and how to conceptualise such knowledge is the subject of ongoing debate. (See, for example, Munby, Russell and Martin, 2001). Since its publication in 1987, Shulman's categorisation of a knowledge base for teaching and, in particular, his work on pedagogic content knowledge, has been widely used to inform the design of teacher education curricula. However, some teacher educators have expressed concern about the 'static' nature of this conceptualisation (e.g. Banks, Leach and Moon, 1999; Tinning, 2007) and about the perpetuation of a divide between 'formal' and 'practical' knowledge through the very attempt to provide a bridge between the two (Cochran-Smith and Lytle, 1999).

Banks, Leach and Moon (1999) draw on a wide range of theorists and on their own research in classrooms in the United Kingdom to develop a model of a knowledge base for teachers in which subject or disciplinary knowledge, pedagogic knowledge and school knowledge (which includes curriculum knowledge) are dynamically interrelated, with teachers' personal constructs of a school subject at the heart of their professional knowledge-making. Pertinent to an analysis of materials designed for pre-service and in-service teacher education, is their view that the model is applicable both to student teachers working out a rationale for their classroom practice and to 'expert' teachers working in times of curriculum and social change (Banks, Leach and Moon, 1999). The diagram in Figure 1 presents subject, school and pedagogic knowledge as dynamically interrelated:

> . . .a teacher's subject knowledge is transformed by his or her own pedagogy in practice and by the resources which form part of his or her school knowledge
>
> (Banks, Leach and Moon, 1999, p.95).

In the diagram, the examples of what could be included within each element were developed by a group of English teachers with whom the authors worked. Banks, Leach and Moon argue that not only is the development of a teacher's professional knowledge a dynamic process, but that this knowledge is brought into existence by the learning context in which the teacher is situated. This argument suggests that each of the elements in the model could be positioned inside an outer 'contexts circle'.

Figure 1: A model for conceptualising teachers' professional knowledge, with examples from a group of English teachers (Source: Banks, Leach and Moon, 1999, p.96)

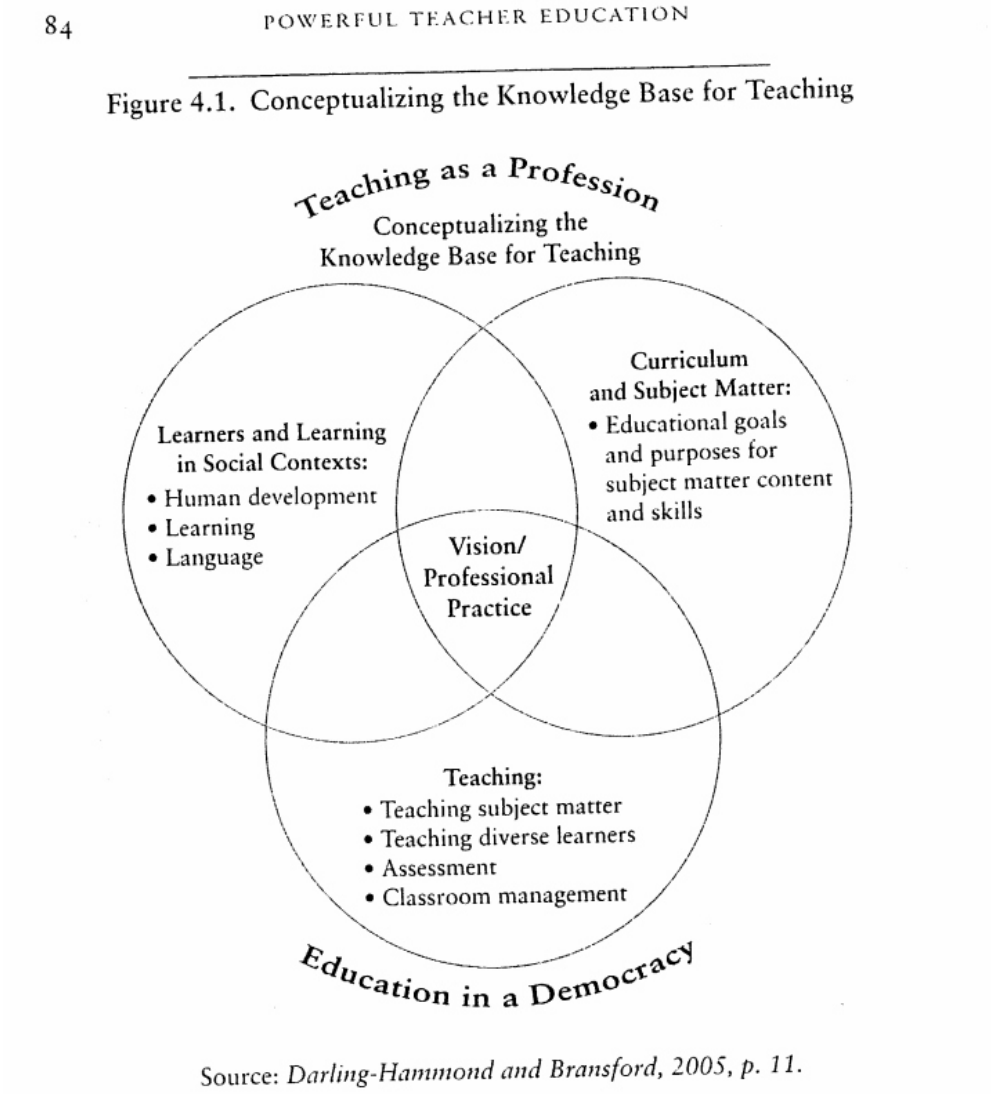


In reporting on an extensive study of 'successful teacher education programs' in the USA, Darling-Hammond (2006) states that '[H]ow these programs conceptualise the knowledge base for teacher education involves a set of ideas about *what* teachers need to learn – the content of preparation – and *how* they need to learn it – the processes that allow teachers to develop useful knowledge that can be enacted in ways that respond to the complexity of the classroom' (2006, p.80; italics in the original). In this study Darling-Hammond and Bransford identified eight elements characteristic of what they consider to be new conceptualisations of knowledge for teaching. These new conceptualisations:

- emphasise understanding learners and learning as central to making sound teaching decisions;
- understand that the subject matters and that subject-specific pedagogical knowledge is important;
- unite the study of subject matter and children in the analysis and design of curriculum;
- see learners, subject matter and curriculum as existing in a socio-cultural context;
- seek to develop a repertoire of teaching strategies and an understanding of their purposes and potential uses for diverse goals and contexts; place extraordinary emphasis on the processes of assessment and feedback as essential to both student and teacher learning;
- seek to develop teachers' abilities as reflective decision makers;
- see teaching as a collaborative activity conducted within a professional community that feeds on-going teacher learning (2006, p.81–82).

Like Banks, Leach and Moon, Darling-Hammond and Bransford use overlapping circles to represent diagrammatically the interrelated elements of a knowledge base for teaching.

Figure 2: Conceptualising the knowledge base for teaching (Darling-Hammond, 2006)



Source: *Darling-Hammond and Bransford, 2005, p. 11.*

With reference to knowledges for teacher education programmes in South Africa, Adler, Slonimsky and Reed have argued that one of the challenges for teacher educators is to 'characterise and articulate "subject knowledge for teaching" and to clarify how its acquisition by teachers lies in the co-ordination of subject, pedagogic and contextual knowledge – or what can be renamed teachers' conceptual knowledge-in-practice' (2002, p.151). In similar vein, Morrow (2007b) lists four fundamental categories of competence which teacher educators in South Africa need to take into account:

- a strong and properly-grounded conception of teaching and an effective grasp of the definitive ideals of the professional practice of organising systematic learning. . .
- the kind of second-order knowledge of content needed in order for it to be possible to teach it. . .
- knowledge of the social, organisational and institutional contexts, and other conditions of the practice of teaching. . .
- competence in organizing systematic learning. . .

(Morrow, 2007b, pp.84–85)

Elements of a framework for analysing knowledge selections in teacher education materials

Though there are some variations in terminology and in examples, the following elements appear to be common to the conceptualisations of knowledge for teacher education programmes put forward by Banks, Leach and Moon (1999), Adler, Slonimsky and Reed (2002), Darling-Hammond (2006) and Morrow (2007b):

- substantive knowledge of the subject or discipline to be taught;
- pedagogic content knowledge (for Banks, Moon and Leach this includes aspects of what they term 'school knowledge' as well as 'pedagogic knowledge' and for Morrow it includes both second order knowledge of content and competence in organising systematic learning);
- knowledge of how learners learn;
- knowledge of the curriculum;
- contextual knowledge

At the heart of the models proposed by Darling-Hammond and Bransford and Banks *et al.* is an 'element' which suggests that teachers' histories and identities are central to the choices they make in regard to subject content and to pedagogy. In the framework below I have included the element 'knowledge of self as learner and teacher'.

While none of the authors referred to above include the development of pre-service or in-service teachers' own academic literacy in their

conceptualisations of a knowledge base for teacher education, some distance learning materials for South Africa's teachers include content and activities which are designed to support their academic reading and writing development. Many of the teachers registered for pre-service and in-service programmes are English additional language speakers whose schooling may have under prepared them for the demands of tertiary study. For this reason I have included 'academic literacy' in the knowledge base.

Thus the framework proposed for analysing content selections consists of the seven elements listed below. Next to each one is an example of content on the topic of 'Reading' which serves to illustrate how I understand the element:

- subject/disciplinary knowledge – material that relates to theories about reading[5]
- pedagogic knowledge – material that relates to methods of teaching reading
- knowledge of how learners learn – material related to what is involved in learning to read, both cognitive processes and sociocultural processes
- knowledge of the curriculum – material that focuses on current curriculum statements about reading and their 'translation' into classroom practice
- contextual knowledge – material that locates reading and the teaching of reading in sociocultural context
- knowledge of self as learner and teacher – at a metacognitive level this includes material that promotes reflection on past and present learning and teaching practices but also on other factors contributing to identity formation, including identity as a reader
- academic literacy – material that aims to extend teachers' academic reading and writing competencies.

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5 What is included in the subject knowledge category will vary according to the 'information focus' of teacher education materials. The examples given by the teachers in Banks *et al.*'s (1999) study indicate what these teachers considered to be the subject or disciplinary knowledge needed by teachers of English in the United Kingdom.

In Table 1 each of the seven elements is listed in the left-hand column. The columns to the right of each element offer a schematic tabulation of three design teams' use of this element in teacher education materials on the broad topic of 'Reading'. As one of the reviewers of this article points out, the elements are not always entirely distinct – conceptually or in their instantiation on the page. For example, the teachers in Banks, Leach and Moon's (1999) study place 'The reading process' within their category of 'school knowledge' but it could also be located within 'pedagogic knowledge' if the focus in the materials is on strategies for supporting learners' development as readers, or in 'subject knowledge' if the focus is on theories about reading. In the unit on Reading in *Language in Learning and Teaching (LILT)*, the article 'Understanding the reading process' includes content on both theories about reading and on learners and the ways in which they learn (or fail to learn) and so I have placed it within both elements in the framework presented in Table 1.

Table 1: Content selected for materials with a focus on Reading by the designers of three sets of South African teacher education materials

Elements of a knowledge base for teaching	***Learners and Learning*, Learning Guide Section 4 pages 113–148; Reader Section 4 pages 131–166**	***Language in Learning and Teaching (LILT)* Learning Guide Unit 2 pages 57–82 Reader Chapter 4 pages 155–168**	***Language, Literacy and Communication, Umthamo 2* pages 1–48**
Subject/disciplinary knowledge	LG: learning to read: pp.114–115; LG: What kinds of reading support school learning? pp.128–132; Different levels of reading: pp.134–135 Reader: The act of study: pp.133–136; The magic of reading: pp.137–144; Guided adventures in learning: pp.145–153	LG: importance of reading/learning to read/reading theory: p.57, 59, 61–62; different genres for different purposes: pp.76–79; Reader: Understanding the reading process: pp.155–168	Whole language: the easy way to language development: pp.38–42
Pedagogic knowledge	Developing active and independent readers: pp.132–134; Reader: Developing communities of reading and learning:	LG: textbook survey: p.58; teaching reading in grade 1: p.65; making reading a focus of content lessons: p.71; designing and using a	classroom management and timetabling: pp.2 and 4–9; collecting iintsomi: pp.16–24; using iinstomi in the classroom: pp.25–36;

	pp.154–166.	reading questionnaire: p.73–75; strategies for teaching/encouraging reading across the curriculum: pp.80–82	Appendix: Making a Big Book: pp.43–48:
Knowledge of how learners learn	LG: Title of module; LG: What happens when we read a book? pp.116–119; Why is reading so difficult? pp.119–123 What makes reading a meaningful experience? pp.124–126	LG: Introduction of metacognition: p.59 Reader: Understanding the reading process pp.155–168	benefits for learners of an integrated curriculum: pp.10–13
Knowledge of the curriculum	LG: Languages Learning Area: p.137; OBE: pp.144–145		OBE: p.2; Languages Learning Area: p.23
Contextual knowledge	LG: EAL readers: p.117; EAL readers' homes: p.126; literacy in Africa: p.127	LG: Refs to EAL readers: pp.60, 64, 66–67; reading contexts in SA: p.68; resource constraints in schools: p.82	oral literature: p.2; collecting an intsomi: pp.16–18 and p.25; an intsomi presented in both isiXhosa and English: pp.19–21; giving status to all languages of the province: p.23
Knowledge of self as learner and teacher	LG: responses to 'half-truths' about reading: p.113; views on differences between spoken and written language: p.115; reflections on own experiences of learning to read/being a reader: p.121 and 125; own views on teaching reading: p.122, 126 and 143. Reader: p.144 and p.150: personal response to ideas in readings	LG: Reflecting on self as young reader and as reader of academic texts: pp.59, 60, 63, 64; reflecting on teaching: p.68; reflecting on views on reading: p.72 Reader: reflecting on self as adult reader: p.155	Reflections on work experiences; position on school timetables: p.4, p.6, p.8, p.12; reflections on experiencing 'whole language': pp.15–16; reflections on story-collecting experiences: p.24, p.26; reflection on using the stories in the classroom: p.28/31 and p.33/35
Academic literacy	LG: note-making: p.115 and 125; turning notes into academic discourse: p.125; understanding text structures: pp.139–14:	LG: surveying study material: p.58; previewing a text: p.59; making notes and scanning a text for specific information: p.68	No references to this in this module

While acknowledging that such a summary cannot adequately represent the content selections made by the designers and noting that it is not always easy to categorise knowledge elements, the table does provide an indication of how three design teams have conceptualised content on a broadly similar topic (in this instance 'reading'). For example, 34 of the 48 pages of *Language, Literacy and Communication Umthamo 2* focus on pedagogic knowledge. The pages describe in considerable detail how to collect isiXhosa moral tales (iintsomi) how to use these tales in classroom reading lessons and how to make reading materials (Big Books). The designers foreground classroom practice within a particular context: under-resourced primary schools in the Eastern Cape. By contrast, and unsurprisingly in view of the module's title, it is subject knowledge 'about' reading and knowledge of how learners learn that are privileged in both the study guide and reader designed for the module *Learners and Learning.* Analysis of the pages on Reading in the study guide and reader for *Language in Learning and Teaching (LILT)* indicates that the designers approach has been to attempt to 'balance' subject knowledge, knowledge of how learners learn and pedagogic knowledge.

Summarising the knowledge selections also enables analysis of similarities and differences of approach to a particular element of the knowledge base. For example, each of the design teams has included activities which require teachers to be reflective but the 'object' of these reflections differs. In *Language, Literacy and Communication Umthamo 2* this object is primarily the teachers' practices of collecting and using stories. In the other two sets of materials it is mainly reflections on one's own experiences as a reader and on the ideas about reading that have been introduced in the text. What I have categorised as 'contextual knowledge' is broadly similar in *Learners and Learning* and in *Language in Learning and Teaching (LILT).* The designers give attention to the challenges of reading in an additional language (English) and in print-resource-poor homes and communities. By contrast, the designers of *Umthamo 2* foreground the use of isiXhosa and English in a reading programme and thus promote South Africa's official language-in-education policy of additive bi- and multi-lingualism.

Identifying and tabulating elements of a knowledge base also enables identification of 'silences' in course materials. For example, in these materials there is very little explicit reference to South African curriculum documents and in the case of the *Language, Literacy and Communication* umthamo, no reference to academic literacy.

Understanding orientations to 'teacher knowledge'

Alongside the on-going debate about the 'what' of teacher education (Wilson and Berne, 1999) has been debate about "the sources of teacher knowledge and the kinds of cognitive processes associated with such knowledge" (Webb, 2007, p.280). For Webb, the essence of this debate is the extent to which teacher knowledge is more appropriately conceptualised as "codifiable and generalizable" or as "event-structured and personal" (2007, pp 280–281). If codifiable and generalisable, then it is assumed that teacher knowledge is propositional and theoretical – termed 'epistemic knowledge' by Loughran (2006) – and that it is learned through a combination of 'knowledge transfer' in the form of instruction, and 'knowledge application' in the form of the teaching practicum. If event-structured and personal, then teachers create knowledge in contexts of practice, in the process developing practical wisdom or phronesis (Loughran, 2006). Loughran argues that teacher educators need to bridge the gap between these two conceptualisations by drawing on both:

> It is not that one is more important than another, both inform good teaching, but it is the manner in which each are called upon and used that dramatically influences the way that each are (sic) interpreted by students of teaching, and therefore ultimately accepted, rejected, understood and valued (2006, p.65).

A framework for understanding teacher learning proposed by Cochran-Smith and Lytle at the end of the 1990s addresses the 'how' of teacher education by conceptualising knowledge-practice relationships in terms of 'knowledge-for-practice', 'knowledge-in-practice' or 'knowledge-of-practice'. I have slightly adapted this framework and used it to design a table which summarises how knowledge, teachers, teaching and educational change are imagined in different ways in each of the three conceptualisations.

Table 2: Knowledge-Practice relationships in three conceptions of teacher learning

Knowledge-Practice Relationship	Subject/'book-based' knowledge for practice	Practice-based knowledge in practice	Meta knowledge of subject and practice in relation to each other and to context
Images of Knowledge	Defined and distinctive 'formal' knowledge of 'subjects', educational theory and pedagogy – produced mainly by university-based academics	Knowledge base is Th what very competent teachers have come to know through their practice; knowledge acquired through reflections on experience – groups/dyads of more and less experienced teachers generate knowledge through working together in and on practice	Through enquiry teachers problematise 'formal'and 'practical' knowledges – knowers and knowledge located in socio-political contexts
Images of Teachers, Teaching and Professional Practice	Teaching involves applying 'received knowledge' in a practical situation – knowledge for use	Teachers generate knowledge through reflection on 'wise practice' – the classroom is a 'knowledge landscape'	Teachers expected to be transformative Teaching as praxis
Images of Teacher Learning and Teachers' Roles in Educational Change	Teachers come to know what is already known and use this knowledge to effect change	Teachers learn through reflecting on their own and other teachers' practices in order to improve these practices	Teachers learn through participation in on-going action research communities
Current Initiatives in Teacher Education, Professional Development and/or Teacher Assessment	Programmes in which teachers learn and demonstrate knowledge for certification purposes	Pre-service teachers learn through 'assisted performance' with mentors; in-service teachers through professional development opportunities supported by external facilitators	School or district-based teacher enquiry communities, teacher conference presentations and publications

Cochran-Smith and Lytle argue that such a framework

> . . . exposes a number of provocative issues about the whole topic of teacher learning and the role of communities. These issues are at once subtle, in that very different meanings are often embedded beneath the surface of similar language and structures, and also striking, in that the differences are enormously significant for how teachers understand and position themselves in various initiatives for school improvement as well as how universities and other educational institutions position teachers and teacher learning in relation to change (1999, p.295).

Some of these provocative issues are raised in the work of Canadian teacher educators Connelly and Clandinin who distinguish between 'knowledge for teachers' and 'teacher knowledge'. They are critical of those who support a 'knowledge for teachers' approach to teacher education, arguing that this view constructs knowledge as a possession:

> In this view knowledge needs continual updating and may lead to the stripping of knowledge, sometimes called deskilling (Apple, 1979), or to the continual accumulation of knowledge which is what the teacher-testing movement is after (2007, p.90).

They support an alternative conceptualisation which they term 'teacher knowledge': "teachers hold knowledge that comes from experience, is learned in context and expressed in practice" (2007, p.90).

In *Developing a Pedagogy of Teacher Education* Loughran argues that teacher education "is where all students of teaching should learn to challenge their deeply held views of teaching and learning; so often implicit in practice but so rarely articulated, confronted and examined" and that teacher educators should 'model' such processes (2006, p.42). In his view 'modelling' must go beyond the traditional notion of demonstration lessons "to focus attention on the dilemmas, puzzles, issues and concerns that comprise the problematic nature of teaching" (2006, p.42) so that students of teaching are encouraged "to learn about and better value the knowledge, skills and abilities that are inherent in good teaching" (2006, p.177).

For teacher educators, modelling a process of interrogating 'deeply held views of teaching' is already a considerable challenge in an on-campus programme but in a print-based distance learning programme it is a much more daunting task when 'unpacking teaching' must be done on the page or screen.

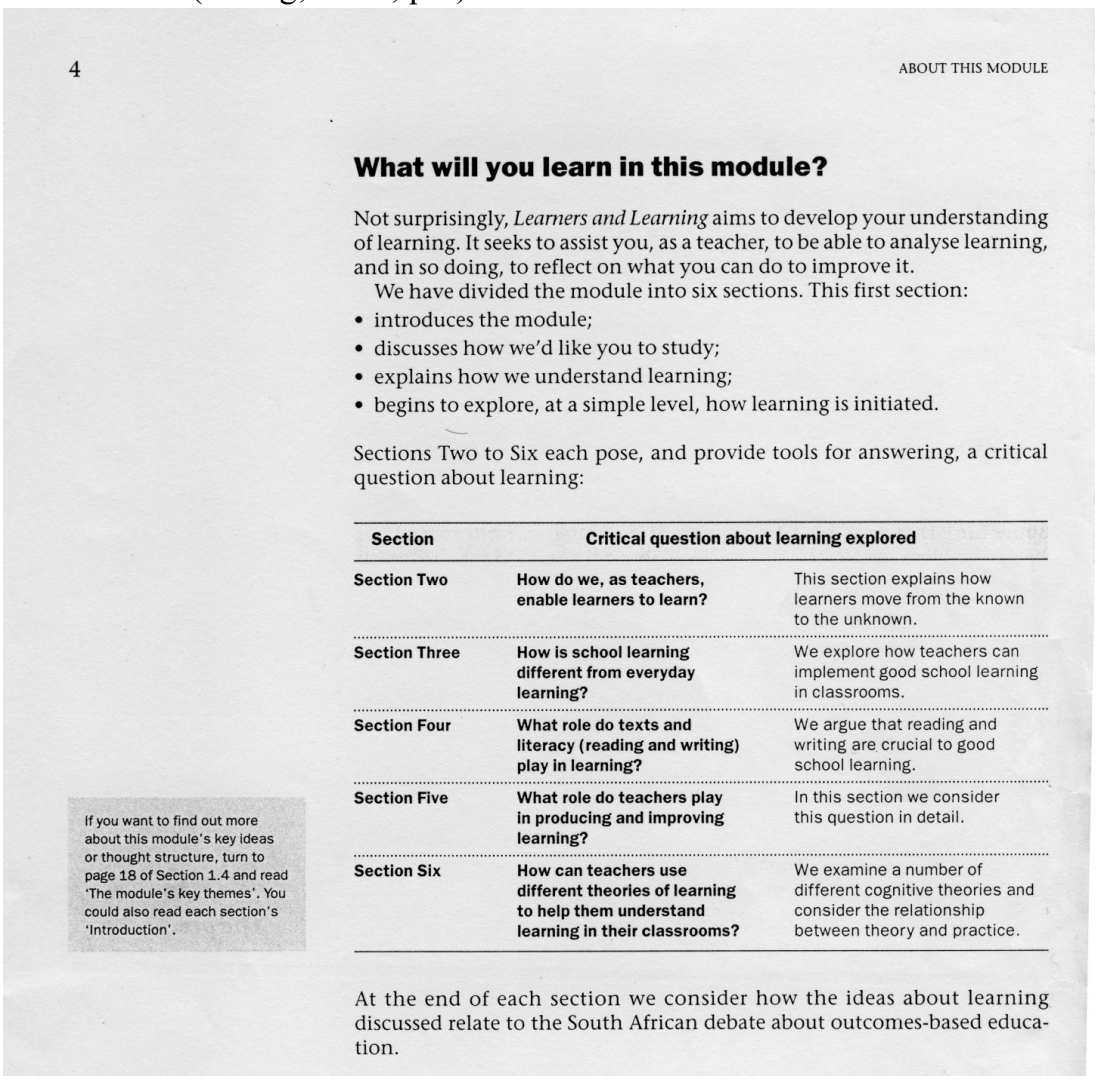
The constraints of an article do not permit a detailed analysis of the full range of organisational strategies used by the three design teams to 'unpack' reading and the teaching of reading in the pages of their materials. For example, I do

not address the role of visual design and layout, though I acknowledge their importance. Instead, I offer a brief summary of findings from an analysis of selections from each set of materials which was enabled by the framework developed from Cochran-Smith and Lytle's work on knowledge-practice relationships. I suggest that, as an analytic tool, this framework offers a way of understanding how the particular organisational strategies selected by designers contribute to constructions of teacher identities and teaching practices.

Learners and Learning

In the introduction, the designers explain in considerable detail how the module is organised and conclude with the summary of its organisation and content that is presented in Figure 3.

Figure 3: Summary of module content from *Learners and Learning* (Gultig, 2001, p.4)



4 ABOUT THIS MODULE

What will you learn in this module?

Not surprisingly, *Learners and Learning* aims to develop your understanding of learning. It seeks to assist you, as a teacher, to be able to analyse learning, and in so doing, to reflect on what you can do to improve it.

We have divided the module into six sections. This first section:

- introduces the module;
- discusses how we'd like you to study;
- explains how we understand learning;
- begins to explore, at a simple level, how learning is initiated.

Sections Two to Six each pose, and provide tools for answering, a critical question about learning:

Section	Critical question about learning explored	
Section Two	How do we, as teachers, enable learners to learn?	This section explains how learners move from the known to the unknown.
Section Three	How is school learning different from everyday learning?	We explore how teachers can implement good school learning in classrooms.
Section Four	What role do texts and literacy (reading and writing) play in learning?	We argue that reading and writing are crucial to good school learning.
Section Five	What role do teachers play in producing and improving learning?	In this section we consider this question in detail.
Section Six	How can teachers use different theories of learning to help them understand learning in their classrooms?	We examine a number of different cognitive theories and consider the relationship between theory and practice.

If you want to find out more about this module's key ideas or thought structure, turn to page 18 of Section 1.4 and read 'The module's key themes'. You could also read each section's 'Introduction'.

At the end of each section we consider how the ideas about learning discussed relate to the South African debate about outcomes-based education.

These designers constitute readers as students of teaching who will benefit from materials in which headings, sub-headings and introductions guide them through the texts in the learning guide, reader and audiotape. The content selections are carefully scaffolded within the overall frame of a series of contentious statements (referred to in the materials as 'half-truths') and organised so that readers re-visit and re-think what has been introduced in earlier sections. In terms of both content selections and organisation the design suggests a 'knowledge for practice' orientation to teacher education. Readers are provided with the knowledge of others as a stimulus for their own thinking and as a starting point for the construction of their own knowledge about learning and teaching – regardless of whether they are pre-service or in-service teachers.

Language, Literacy and Communication

One of the organisational strategies chosen by the designers of the materials for the BEd. degree programme in which the *Language, Literacy and Communication* imithamo[6] are located, was to prepare 32 or 48 page 'mouthfuls' which are 'fed' to teachers at regular intervals rather than a conventional book length learning guide. A second strategy was to design materials to be used in conjunction with fortnightly or monthly contact workshops facilitated by *abakhwezeli*[7] who keep these mouthfuls at just the right temperature. In each *umthamo* content is sequenced to provide support for a Key Activity which teachers are required to complete and bring to a workshop. The conclusion offers either a theoretical text as 'confirmation' of what teachers have been constituted to experience as valuable about the Key Activity and other activities and/or summarises what the designers consider to be key features of the content. In some *imithamo* the conclusion also challenges teachers to continue learning and to take responsibility for providing quality learning experiences in their classrooms.

In both the content selections and the organisational strategies there is evidence of elements of Cochran-Smith and Lytle's 'knowledge-for-practice' and 'knowledge-in-practice' and, to some extent, even 'knowledge-of-practice'. Teacher-learners are directed by the designers to apply theoretically-informed pedagogies in their classrooms (knowledge-for-practice) but at the same time they are encouraged to reflect on their experiences of using 'new' pedagogies, to conduct research and to generate their own theory (knowledge-in-practice). They are also encouraged to be 'agents of change' in their schools (e.g.University of Fort Hare, LLC Umthamo 5, 2000, p.36) and to problematise theoretical and practical knowledge when they discuss the Key Activities with fellow teacher-learners at the contact sessions (knowledge-of-practice).

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6 In isiXhosa umthamo (plural imithamo) means 'a bite-sized chunk'.

7 In isiXhosa umkhwezeli (plural abakhwezeli) means 'someone whose job is to keep the fire burning just right so that the food in the pot cooks well'

Language in Learning and Teaching (LILT)

The *LILT* materials are the most hybrid in terms of content selection and organisational design. The learning outcomes which frame the module are oriented towards teacher-learners' professional development as teachers and academic development as students. With reference to the former, the designers constitute them as interested in "enhancing" their practice as a result of their "thorough understanding" of the content of the module (Inglis, Thomson and Macdonald, 2000, p.4). With reference to the latter, they are constituted as learners with an interest in 'deepening' their understanding of theoretical concepts and findings from empirical research and as able to 'articulate' this understanding both orally and in writing (Inglis *et al.*, 2000, pp.3–4).

The general introduction includes a section with the sub-heading 'The structure of this module' in which the designers explain one of the limitations of print-based distance learning materials:

> One of the problems which we face when writing a Learning Guide like this is that we have to turn information-gathering and knowledge construction into something that appears to be quite linear, when in real life it is not. We have presented this module in defined pieces that follow one after the other, but in reality you can't separate everything as we have done here. However, by referring you to chapters in the Reader, and by anticipating theories that we will cover in later units, and by reminding you of aspects already covered in earlier units, we attempt to show you a less linear process. It is therefore very important that you, as the learner, are active in integrating the parts into a meaningful whole. (Inglis *et al.*, 2000, p.4)

By problematising the organisational design the design team challenges teachers to make personal the knowledge that is offered. I think it can be argued that although a 'knowledge for practice' orientation is dominant in materials designed for students who are studying for a qualification, the designers of the *LILT* material also recognise that experienced teachers bring a range of knowledges to their studies and have the capacity both to problematise knowledge and to work transformatively in their classrooms (knowledge in and of practice).

Conclusion

I have suggested in this article that a review of selected international and local teacher education literature has enabled the conceptualisation of a two-part framework which, despite its limitations (principally in the 'fuzziness' of some elements in the knowledge base), I have found useful for identifying

similarities and differences in the selection and organisation of content and for identifying orientations to 'teacher knowledge' in three sets of South African teacher education materials. I am not arguing that any one of these sets of materials is 'better' than another, especially as they were designed for different readerships, but I do argue that the selection and organisation of content in each set offers different positions to readers as students and as teachers – positions that may affect their investment in their studies and in particular teaching practices. While it is obviously true that positions accepted or rejected by readers (as students or teachers or both) can only be investigated in situations of use, I find persuasive the argument of Bezemer and Kress (2008) that all texts are 'potentials of a quite specific kind' which in their specificity constrain the ways in which they can be read. My main aim in this article has been to offer a framework as a starting point for identifying the potentials which the selection and organisation of content in specific ways offer to readers of particular teacher education texts.

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Yvonne Reed
Wits School of Education

yvonne.reed@wits.ac.za

Journal of Education

Periodical of the Kenton Education Association

School of Education and Development
School of Adult and Higher Education
University of KwaZulu-Natal

The *Journal of Education* is an interdisciplinary publication of original research and writing on education. The Journal aims to provide a forum for the scholarly understanding of the field of education. A general focus of the journal is on curriculum. Curriculum is understood in a wide and interdisciplinary sense, encompassing curriculum theory, history, policy and development at all levels of the education system (e.g. schooling, adult education and training, higher education). Contributions that span the divide between theory and practice are particularly welcome. Although principally concerned with the social sciences, the journal encourages contributions from a wider field.

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.

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Notes for Contributors

Journal of Education will appear at least twice per year.

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 per page fee of R100 will be levied on published submissions. 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!

Articles and review essays are reviewed by anonymous external referees. 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.

Articles and essay reviews (maximum 6 000 words); debate, discussion and research notes (2 500 words); book reviews (2 000 words); and book notes (200 words) will be considered.

Contributors should submit three clear, page numbered copies of the manuscript, and bearing the title of the paper. Manuscripts will not be returned. The name(s) and full address(es) of the author should appear on a separate sheet. Each paper should be accompanied by a 100–150 word abstract. Hard copies should either be accompanied by a 3½ inch diskette bearing the article, or followed by the file sent as an email attachment to the Editor at JoE@ukzn.ac.za. Articles sent by e-mail only are not accepted except in cases where this might be the only reasonable means of communication.

The electronic version of the article should not be formatted, and should 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). 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.

Each author will receive a copy of the journal in which the paper appears.

Referencing style

Journal of Education style of referencing is a requirement. References in the text should appear as follows:

> No country in the world can afford the schooling its people want (Reimer, 1971) and it has been argued that "of all 'false utilities', school is the most insidious" (Illich, 1971, p.60).

The references should be listed in full at the end of the paper in an acceptable standard format, preferably the following:

Books

> Surname(s), Initial(s). Year of publication. *Title: additional title information*. Edition (if other than the first). Place of publication: Publisher.

Chapters in edited or compiled books

> Surname(s), Initial(s). Year of publication. Title of chapter or article. In Surname(s), Initial(s) of editor(s) or compiler(s). (Eds). or (Comps). *Title of book*. Edition (if other than first). Place of publication: Publisher. Inclusive page numbers of the chapter.

Journal articles

> Surname(s), Initial(s). Year of publication. Title of article. *Name of journal* volume number (part number (if there is not continuous pagination)): inclusive page numbers.

Articles and reports in magazines and newspapers

> Surname(s), Initial(s). Year of publication. Title of article. *Name of magazine or newspaper* day and month: inclusive (and additional) page numbers.

Book reviews

> Surname of reviewer, Initial(s). Year of publication. Title of review (if there is one). [Review of] *Title of book reviewed* by Name of author in its most familiar form. *Name of periodical* volume number (part number) or date (if applicable): inclusive page numbers.

Theses and dissertations

> Surname, Initial(s). Year. Title: additional title information. Description of work. Location of university: name of university.

Seminar papers

> Surname, Initial(s). Year. Title: additional title information. Unpublished seminar paper. Location of university: name of university, name of department, programme or unit.

Conference papers (unpublished)

> Surname(s), Initial(s). Year. Title: additional title information. Description of occasion (including the nature and subject of the conference or meeting, name of the society or group, the place at which it was held and the date(s) on which it was held).

Duplicated materials

> Surname(s), Initial(s). Year. Title: additional title information. Description of material. Location of issuing body: name of issuing body.

Interviews

> Surname of person interviewed, Initial(s). Year. Interviewed by initial(s) and surname of interviewer. Place where interview occurred, further details of date (day and month). Details of location of transcript, if available.

Personal communications

> Surname of person with whom communicated, Initial(s). Year. Description of communication, further details of date (day, month).

Microforms, audio-visual material, CD-ROMs etc.

> As for works above but with the addition of the format in square brackets at the end of the reference, e.g. [Microfilm] or [Videotape] or [CD-ROM], etc.

Online sources of information (published or unpublished)

> Surname(s), Initial(s). Year of publication. *Title.* Version (if any). Place of publication: Publisher.
> <Address of web page between> Day, month (and year if different to publication year) of visit to site.

Correspondence should be addressed to:

The Editor
Journal of Education
School of Education and Development
University of KwaZulu-Natal
Private Bag X01
Scottsville 3209

Telephone: +27 033 - 260 6091/6206
Fax: +27 033 - 260 5080
E-mail: JoE@ukzn.ac.za

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 two special issues (one of which will be the Kenton Special Edition).

Most journals now have a per page 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 levy of R75 per page will be applied to successful articles submitted to our office. 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?
Only if you live in a place where submission of three hard copies is inordinately difficult or expensive, please. The norm is three hard copies sent to our office. The electronic version of the article may be sent as an email attachment, or on a disk included with the hard copies.

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 subheading should be clear on the hard copies submitted. 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 2006 and 2007 provide an indication of the pattern of acceptance/ non acceptance:

Year	Accepted with no or minor revisions	Accepted after revisions	Not accepted
2006	2	7	34
2007	3	20	28

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.