Learning to fly: pedagogy in the Foundation Phase in the context of the CAPS reform[1]

Ursula Hoadley

Abstract

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

Introduction

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

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

The broader project: shifts in the form of pedagogy

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

---

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

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

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

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

---

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

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

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

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

Evaluation

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

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

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

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

Analysing evaluative criteria

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

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

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

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

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

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

Empirical indicator 1: In the introduction/explanation/instruction for an activity/task			
F++	**F+**	**F-**	**F--**
Evaluative criteria very clear and explicit	Evaluative criteria quite clear and explicit	Evaluative criteria quite unclear and implicit	Evaluative criteria quite unclear and implicit
The teacher always or almost always makes the evaluative criteria explicit in the introduction, explanation or instruction for an activity or task. She explicitly defines and explains the purpose and meaning of the task or activity and makes it clear exactly how a task should be completed.	Most of the time the teacher makes the evaluative criteria available in an explicit and clear manner through explication or instruction for an activity or task. The requirements for the successful completion of a task are generally clear, although there may be some aspects that remain implicit.	Some attempts are made to make the requirements for the successful completion of a task or activity available to learners, but these are at times unclear or not articulated. There is some ambiguity or lack of clarity as to what is expected of learners in the task or activity.	Generally the teacher does not make the evaluative criteria explicit in the introduction, explanation of instructions of a task. How the task should be completed, its purpose and meaning is not clear. Learners are unclear as to how to proceed, or proceed in any manner they choose.
Example F++	Teacher D tells the learners that the letter of the day is the letter 'p'. She tells learners that she wants them to give her words that start with 'p'. She gives an example, 'pad [road]' and then proceeds to ask almost every child in the class to produce a word.		
Example F-	After reading a short narrative text Teacher N draws lines on the board and writes the instructions for a task. She does not explain what the actual instruction is. One child walks up to her with her books and asks a question, she then tells learners to write in their books. Then she tells learners to identify verbs in the text and write them down. About a third of the way into the activity she defines verbs as 'doing words'.		

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

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

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

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

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

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

Coding procedure

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

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

Table 2: Coding of framing over evaluative criteria

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

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

In a mathematics lesson of Teacher Z, with learners on the mat, the teacher explains that learners must count out 10 beans in front of them, then make equal groups with 10 beans. As they make equal groups with the beans, the teacher writes each representation on the board as a number sentence, first as repeated addition, and then as multiplication (e.g 2+2+2+2+2=10 or 5x2=10). She ends up with multiple representations of the same number (10) on the board and makes sure that learners are aware they are making groups with the same number all the time (indicator 1: $F^+/3$). The teacher uses the number 12 as a second example, which learners also have to break up into equal groups.

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

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

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

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

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

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

Evaluative criteria and evaluative rules

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

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

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

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

---

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

Temporal range and ordering logic

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

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

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

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

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

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

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

Knowledge and pedagogy

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

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

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

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

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

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

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

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

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

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

Conclusion

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

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

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

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

---

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

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

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

References

Alexander, R. (2014, February). *Teaching and learning: The quality imperative revisited*. Paper presented at the Teaching and Learning for Development: the 2013/14 Education for All Global Monitoring Report Conference. 3 February, Oslo.

Bernstein, B. (1996). The pedagogic device. *Pedagogy, symbolic control and identity: Theory, research and critique.* London: Taylor and Francis.

Carnoy, M., Chisholm, L., & Chilisa, B. (2012). The low achievement trap: Comparing schooling in Botswana and South Africa. Pretoria: HSRC Press.

Chick, J.K. (1996). Safe-talk: Collusion in apartheid education. In H. Coleman (Ed.), *Society and the language classroom* (21–39). Cambridge: Cambridge University Press.

Chisholm, L., Hoadley, U., & Kivilu, M. (2005). *Educator workload in South Africa. Final report prepared for the education labour relations council.* Pretoria: Human Sciences Research Council.

Coe, R., Aloisi, C., Higgins, S., & Major, L. (2014). *What makes great teaching? Review of the underpinning research*. Report prepared for the Sutton Trust. Accessed 1 May 2015. http://www.suttontrust.com/wp-content/uploads/2014/10/What-Makes-Great-Teaching-REPORT.pdf

Davis, Z. (2005b). *Pleasure and pedagogic discourse in school mathematics: A case study of a problem-centred pedagogic modality*. Unpublished PhD thesis, University of Cape Town.

Ensor, P., Hoadley, U., Jacklin, H., Kuhne, C., Schmitt, E., & Lombard, A. (2009). Specialising pedagogic time and text in Foundation Phase mathematics classrooms. *Journal of Education, 47*, 4–30.

Ensor, P. (2015). Regulative discourse, ritual and the recontextualising of education policy into practice. *Learning, Culture and Social Interaction 6*, 67–76

Fisher, A. (2008). Teaching comprehension and critical literacy: Investigating guided reading in three primary classrooms. *Literacy 42*(1), 19–28.

Fountas, I.C., Pinnell, G.S., & Le Verrier, R. (2012). *Guided reading.* Heinemann.

Hall, K. (2003). Effective literacy teaching in the early years of school: A review of evidence. In N. Hall, J. Larson & J. Marsh (Eds), *Handbook of early childhood literacy.* London; Thousand oaks; New Delhi: Sage Publications.

Hattie, J.A.C. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. London, UK: Routledge.

Henningsen, M. & Stein, M.K. (1997). Mathematical tasks and student cognition: Classroom-based factors that support and inhibit high-level mathematical thinking and reasoning. *Journal for Research in Mathematics Education 28*, 524–549.

Hoadley, U.K. (2005). *Social class, pedagogy and the specialization of voice in four South African primary schools*. Unpublished PhD thesis. Cape Town, University of Cape Town.

Hoadley, U. 2007. The reproduction of social class inequalities through mathematics pedagogies in South African primary schools. *Journal of Curriculum Studies 39*(6), 679–706.

Hoadley, U. (2008). Pedagogy and social class: a model for the analysis of pedagogic variation. *British Journal of Sociology of Education 29*(1), 63–78.

Hoadley, U. (2012). What do we know about teaching and learning in South African primary schools? *Education as Change 16*(2), 187–202.

Hoadley, U. (2017). *Pedagogy in poverty: Lessons from 20 years of curriculum reform in South Africa*. Routledge.

Hoadley, U. & Galant, J. (2014, August). *Pedagogy and performance: Establishing links in a large sample*. Paper presented at the SAERA conference, Durban.

Lubienski, S. (2004). 'Decoding mathematics instruction: A critical examination of an invisible pedagogy. In J. Muller, B. Davies & A. Morais (Eds), *Reading Bernstein, researching Bernstein*. London: RoutledgeFalmer.

MacDonald, C. (1990). Crossing the threshold into standard three. Main report of the Threshold Project. Pretoria: Human Sciences Research Council.

Morais, A., Neves, I. & Pires, D. (2004). The what and the how of teaching and learning. In J. Muller, B. Davies & A. Morais Eds, Reading Bernstein, researching Bernstein (75–90). London: RoutledgeFalmer.

Muller, J. & Hoadley, U. (2010). 'Pedagogy and moral order'. In P. Singh, A. Sadovnik & S. Semel (Eds), *Toolkits, translation devices and conceptual accounts: Essays on Basil Bernstein's Sociology of knowledge* (161–176). New York: Peter Lang.

Muller, J. (2007). On splitting hairs: Hierarchy, knowledge and the school curriculum. In F. Christie and J.R. Martin (Eds), *Language, knowledge and pedagogy: Functional linguistic and sociological perspectives* (65–86). London: Continuum.

Phelps, G. & Schilling, S. (2004) Developing measures of content knowledge for teaching reading. *The Elementary School Journal 105*(1), 31–48.

Pretorius, E. & Machet, M. (2004). The socio-educational context of literacy accomplishment in disadvantaged schools: Lessons for reading in the early primary school years. *Journal for Language Teaching*, 45–62.

Reeves, C. (2005). *The effect of 'Opportunity to Learn' and classroom pedagogy on mathematics achievement in schools serving low socio-economic status communities in the Cape Peninsula*. PhD thesis, University of Cape Town.

Shalem, Y. (2015). Scripted lesson plans – What is visible and invisible in visible pedagogy?

Shalem, Y. & Slonimsky, L. (2010a) Seeing epistemic order: construction and transmission of evaluative criteria, *British Journal of Sociology of Education 31*(6), 755–778.

Shalem, Y. & Slonimsky, L. (2010b). The concept of teaching. In Y. Shalem & S. Pendlebury (Eds), *Retrieving teaching: Critical issues in curriculum, pedagogy and learning*. Cape Town: Juta.

Spillane, J.P. & Hopkins, M. (2013) Organizing for instruction in education systems and school organizations: how the subject matters. *Journal of Curriculum Studies 45*(6), 721–747.

Taylor, N., Muller, J. & Vinjevold, P. (2003). *Getting schools working.* Cape Town: Pearson Education South Africa.

Van der Berg, S., Meyer, H., Reeves, C., Van Wyk, C., Hoadley, U., Bot, M. & Armstrong, P. (2010). Grade 3 Improvement Project: Main report and recommendations. Unpublished report produced for the Western Cape Treasury.

Venkat, H. (2013). Using temporal range to theorize early number teaching in South Africa. *For the Learning of Mathematic 33*(2), 31–36.

Westbrook, J., Durrani, N., Brown, R., Orr, D., Pryor, J., & Boddy, J. (2013). *Pedagogy, curriculum, teaching practices and teacher education in developing countries*. EPPI Education Rigorous Literature review. London: Institute of Education.

Appendix A: Dimensions of pedagogy and axes of variation

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

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

Ursula Hoadley
School of Education
University of Cape Town

uk.hoadley@uct.ac.za