

ENGAGING THE LEARNER'S VOICE? CATECHETICS AND ORAL INVOLVEMENT IN REFORM STRATEGY LESSONS

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This case study is set within the context of a national reform strategy that strongly espouses oral involvement of learners through 'catechetic' interactions, i.e. the use of question-and-answer as a means of teaching, and its inverse, the students' use of question-and-answer with their teacher and their peers in order to enhance their learning, and other oral contributions. Fourteen lessons spanning learners aged 4-15 years were observed and analysed with respect to the extent and quality of such interactions. Attention was paid to observing the catechetics of each lesson,. The incidence and nature of students' oral contributions and interactions could be described as 'the learner's voice' within lessons. Data on these lessons, coupled with data gathered from surrounding structured conversations with teachers and pupils, indicates that the espousal by teachers of some key tenets of the reform strategy is not as yet being significantly enacted in their practice. Also, implicit altered expectations of their role within lessons have not been communicated effectively to most students. The authoritarian model adopted by the reform strategy is suggested as a key factor.

INTRODUCTION

The schools hosting this case study were all in or around a small town with a relatively stable population base, so that the majority of students moved between these schools within the three phases of their compulsory education: 'first' 4-8yrs, 'middle' 9-13yrs, 'high' 14-16yrs. They had already worked together as a consortium for at least two years in attempting to understand and implement the national reform strategy. All of the teachers met within the schools, including all those whose lessons were observed, overtly espoused the reform strategy, including specifically, within informal interviews, supporting the central importance of classroom discussion, question and answer interactions, and students' oral contributions. The fourteen lessons to be seen were negotiated as part of a commissioned audit and review of the health of the mathematics provision within the consortium, and as such spanned all ages of students within 4-15 years. All teachers observed were clear about this and indicated that their chosen lesson was intended to reveal their enactment of the national reform strategy. In a previous presentation (Pinel, 2002) the catechetic interactions of these lessons were provisionally analysed: this analysis is reviewed and extended here to include all oral contributions and opportunities to contribute that were observed and recorded. Each lesson was preceded by a short semi-structured interview with the teacher, and followed by a longer semi-structured discussion with a small sample of students. A two-sided A4 observation sheet was used consistently

for recording all lesson observations. Further field-notes were made to accompany the interviews and discussions.

KEY MESSAGES OF THE ENGLISH REFORM STRATEGY

The reform strategy in primary schools is based upon a severely truncated ‘five-year’ project called the National Numeracy Project. This was originally intended to run from June 1996 - June 2001, and then report in 2002, but in practice was required to report in November 1997, so that a Numeracy Task Force (DFEE 1998a,b) could develop the principles upon which to implement a National Numeracy Strategy (DFEE 1999) from September 1999. This also fed into the revised National Curriculum (QCA/DFEE 1999) that came into force in September 2000, and the National Strategy for Key Stage 3 [NSKS3] (DFES 2001), covering the years 11-14, initiated in 2001.

Among the key messages emphasised throughout these reforms, and specifically reiterated within NSKS3 were:

- **Enquiry skills:** these ‘enable pupils to ask questions, define questions for enquiry...’ Pupils are to present concise, reasoned arguments, explaining and justifying inferences, deductions and conclusions (DFES 2001, 21-22)
- **Creative thinking skills:** these ‘enable pupils... to hypothesise...’ Pupils are to conjecture, hypothesise, ask questions – ‘What if...?’ or ‘Why?’ (DFES 2001, 21)
- **Teaching approach:** to ensure ‘a high proportion of direct, interactive teaching’ (DFES 2001, 26) where: ‘high quality direct teaching is oral, interactive and lively... pupils are expected to play an active part by answering questions, contributing points to discussions, and explaining and demonstrating their methods and solutions to others in the class’ (DFES 2001, 26).

This approach leads to: ‘regular opportunities [for pupils] to develop oral... skills’ (DFES 2001, 26). It is based on ‘questioning and discussing’, ‘exploring and investigation’ and ‘reflecting and evaluating’: questioning in ways that... ensure that all pupils take part; using open and closed questions, skilfully framed, adjusted and targeted...; asking for explanations; giving time for pupils to think before inviting an answer; listening carefully to pupils’ responses and responding constructively...; challenging their assumptions and making them think...; asking pupils to suggest a line of enquiry...; discussing pupils’ justifications of the methods or resources they have chosen’ (DFES 2001, 27)

RESEARCH QUESTIONS

Present policy, as expressed in these ways, would appear to treat the classroom as a ‘black box’ (Black & Wiliam 2001), where certain government-sponsored inputs are fed in, making demands upon teachers and pupils by setting raised expectations, while strongly recommending an authoritative-sounding set of strategic guidelines for

how the teacher and the pupils should interact within the classroom in order to meet these expectations. The key research questions therefore are:

- To what extent were these teachers espousing the above messages?
- To what extent, and in what qualitative ways, were these teachers enacting the above messages through their practice in these lessons?
- To what extent were those students who engaged in subsequent discussions, aware of the nature of their intended contributions to lessons implicit within the above messages?

In addition, as Black & Wiliam surmise, there is the question as to whether these inputs are “counter-productive – making it harder for teachers to raise standards” (ibid.) It is questionable whether the strategic guidelines are as evidence-based as they may seem. Several studies (e.g., Brown, M. 1998; Thompson, I. 2000) have challenged claims made by the Numeracy Task Force that they “aimed throughout our work to look at the evidence” and “attempted to learn not only from this country but from achievements (and mistakes) in other countries” (DFEE 1998b, 7).

PREVIOUS RESEARCH

There are as yet few studies of how the intended oral-interactive nature of lessons in this reform strategy is playing out in classrooms. Exceptions include Denvir et al. (2001) and Coles (2001). In contrast, there are several studies on questioning and responding: Nicol (1999) and Wiliam (1999, 2000) both offer significant thought-provoking contributions, while Sullivan (2001) crystallises the reform strategy’s official line. The broader impact of the reform strategy is becoming well documented (Millett et al, 2004) and other studies question its approaches (Brown, M, 2000). Also of direct relevance are studies about belief systems of teachers (Gates, 2001), comparisons of what is espoused and what is planned (Lim, 1997), and how the quality of teaching can be affected by a reform strategy (Shafer, 2001).

METHODOLOGY

Establishing the lesson observations

An e-mail link was established with each school during a delegate meeting. Lessons were scheduled to be observed using e-mail negotiations with school contacts: school headteachers, in first and middle schools; the head of mathematics department, in the high school. Lesson observation visits occurred within one half-term, all being observed by the same experienced observer-researcher. Observed teachers agreed to take part in this audit - school contacts reported that the option not to take part was exercised by a handful of teachers approached. All teachers had notice of the lesson to be observed, the schedule being established at least a week ahead. Reminders were sent by e-mail a few days before visits. Lessons lasted 45–50 minutes and were observed throughout, significant incidents being noted on a proforma of observable

processes, modes and styles, including specific spaces within which to record any verbal interactions (Gardner, 1993, 1999; Nicol, 1999; Wiliam, 1999).

Prior to each lesson, a 5-10 minute semi-structured interview was conducted with each teacher. This focused upon [a] putting them at their ease, while reaffirming the agreed purpose of the observation, [b] establishing what views they espoused (Lim 1997) about the national reform strategy, and how far they saw themselves as having progressed in relation to implementing the strategy, [c] more specifically, what level of importance they currently attributed to the oral-language rich, verbally interactive, mutual questioning aspects of the strategy (Busatto 2004). Notes on this aspect were collected by noting down key points immediately afterwards on a proforma, while the teacher was making final preparations for the lesson.

After each lesson, three students were drawn from the class and involved in a 20-30 minute semi-structured interview. This allowed for more in-depth exploration of their relationship to relevant mathematics ideas, and opportunity to gain insight into the penetration of reform strategy ideas about students' roles in lessons as becoming more active and interactive, as outlined above. Their perspectives and expectations in this area were easier to access against a background conversation that focused upon their current mathematical focus (Wiliam, 2000).

Each lesson observation was summarised into two pages shortly after the visit, and a copy e-mailed to school contacts. This allowed them, in discussion with observed teachers, to correct any aspects regarded as factually inaccurate, and to challenge any interpretations. In the event, no changes to the record were suggested.

Certain improvements to the methodology were suggested by the experience and later reflection. Had it been possible to carry out follow up interviews with the teachers, the methodology may have been strengthened. Had the lessons been audio- or video-taped, some more detail may have been added to the data, though perhaps at a cost – it was notable that almost all of these teachers seemed at their ease with the researcher's presence and many were almost able to forget about it when the lesson was underway. Other than these issues, the approach chosen led to considerable richness of data, while retaining an apparently high level of authenticity.

Catechetic interactions

These are various processes of teaching and learning through question-and-answer. Many forms were observed in at least one lesson. To discuss these, categories of catechetic interaction were established – these are seen as qualitatively different. The categorisation provided is related to other analyses (Bloom, 1956; Sullivan, 2001.) Bloom distinguished between 'higher order' and 'lower order' questions: here a third category of 'middle order' questions is included (Table 1).

In summary, the first key research question: *'To what extent were these teachers espousing the above messages?'* was addressed through the pre-lesson interviews. The second question: *'To what extent, and in what qualitative ways, were these*

teachers enacting the above messages through their practice in these lessons?’ was addressed through the lesson observations. Finally, the third question: *‘To what extent were those students who engaged in subsequent discussions, aware of the nature of their intended contributions to lessons implicit within the above messages?’* was addressed through the post-lesson student interviews.

Higher Order Questions:	
1	elicit responses centred upon reasoning and justifications - these may include implied questions such as statements to be discussed (e.g. see Dillon, 1985)
2	incite those questioned to consider underlying structures in the mathematics
3	ask group / individuals to reflect upon the mathematics they have been studying
Middle Order Questions:	
4	request that strategies be devised
5	require that a range of possible answers be sought
6	require that known facts be used to find derived facts
Lower Order Questions:	
7	direct the group’s attention to specific key features of the topic
8	require that one of a range of possible answers be found
9	require that known methods be recalled and used
10	simply require a specific answer be found
11	require the recalling of a fact

Table 1: Categories of Question.

RESULTS

The teacher-interviews established their awareness of the importance within lessons of oral interactions, of drawing out students’ ideas and methods, and of allowing space for their questions. All the teachers espoused this approach, most with some enthusiasm; in a few this was less evident, or even a touch of cynicism was detected.

Oral elements of lessons

All lessons involved some teacher exposition, but in general there appeared to be insufficient opportunity for students to expose their ideas about their mathematics orally. In only three lessons were there short episodes of student exposition. Overall, there was a ‘democratic imbalance’ re question-answer events, as teachers dominated most of these, orchestrating the ‘discussion’. This appeared profoundly different to the few cases where the teacher provoked, promoted and ‘chaired’ discussion, enabling students to tease out issues between themselves. In the majority of lessons, student-student discussions about the mathematical focus were not obviously encouraged, and in a few cases these were actively discouraged.

Catechetic interactions

Some teacher questions were pre-formalised in written worksheets produced by the teacher, or in published materials. These are only considered if they led to some verbal interactions within lessons. Amongst such material, almost no instances of higher- or middle-order questions were noted, almost all written questions being classified as types 9, 10 and 11. Within reform strategy lessons, there is emphasis on an interactive 'mental/oral starter' involving much catechetic teaching, but even in this aspect some case-study lessons had no such interaction. In only 2 lessons was the inverse-catechetic form observed: i.e. *students* leading question-and-answer episodes.

Examples from three lessons involving higher levels of verbal interaction

In a year 9 lesson, students were drawn into a lively introductory discussion, the teacher prompting and probing with questions that were effectively differentiated and embodied high expectations. Tackling probability ideas practically, using empty number lines and problematic spinners, students were able to expose their pre-conceptions about this topic within a genuine class discussion involving contributions from almost all students. Confidence was maintained through both the authentic respect afforded to each student's views and the careful scaffolding of their evolving ideas. Within the rest of the lesson, student-student discussions about these ideas were frequent and productive.

In a year 3 & 4 lesson, the teacher at first engaged students through lively and imaginative exposition in considering place value and rounding to the nearest 10. This lesson involved students in responding to focused, probing and challenging questions, and to general questions where 'if you have the answer, whisper it to the person next to you'. She used a 'think of a number' approach to inject a strong reasoning and conjecturing emphasis. Despite this, the large majority of the verbalising within the lesson remained with the teacher.

In a year 1 lesson, focused upon odd and even numbers to 20, the introductory whole class phase lasted 25 minutes. The teacher used a quiet clear voice to raise questions, including some of a higher order alongside a range of middle and lower order questions. Attention and involvement levels remained high throughout this quite intense catechetic activity. By encouraging student questions as well, she scaffolded inverse-catechetic episodes too. After a period of small group work, the class returned to engage in a plenary, with students contributing strongly to further catechetic episodes. Finally the issue of 'what happens if... we go on beyond 20?' was raised by the teacher, leading to several students imagining and conjecturing.

DISCUSSION

Student Enculturation

In just four of the lessons, the approach seemed conducive to students as king questions, beyond simply seeking information or clarification. Students may need enculturation to believe that it is their responsibility and right to ask questions within mathematics lessons (Gates, 2001). In those few classrooms, the established 'culture

'appeared to welcome students' questions. In most lessons, it seemed that such questions may have been received as an intrusion into the teacher's space, or as a deflection from the focus and purposes the teacher had decided upon for the lesson.

Reform Strategy: forcing espousal of an authoritarian rhetoric?

It is clear that all of the case-study teachers – with varying levels of enthusiasm – espoused the key messages of the reform strategy. However the 'authoritarian' nature of the reform strategy (Brown M, 2000) appears to have led to a number of these teachers espousing its rhetoric, whether or not they plan to enact, or actually enact lessons that exemplify it. In one acute case at one end of the spectrum, the 'oral starter' consisted of students - in silence - tackling 39 written calculations from the board, and the 'plenary' involved students again in an almost identical activity.

Within the reform strategy, much emphasis has been given to oral and verbal interactions, so it might be assumed that this aspect of lessons would play a significant part in observed teaching. This study suggests that a rather more complex set of practices is in use. Prior practices seem more enduring than out-of-classroom discussions and espousals suggest. All these teachers seemed prepared to use reform strategy approaches in prior conversation and in any lesson-planning documents provided, and stated that their lessons would be following such approaches. However, there were catechetic-rich episodes in only three teachers' lessons, and at the other extreme three lessons contained almost no catechetic activity.

Instances within this study where the enactment of classroom strategies authentically engaged the student's voice, or where students themselves recognised the nature of their intended role, or where significant opportunities existed for catechetic and other rich verbal interactions were relatively rare. Therefore this study tends to support the views of those who have previously expressed concerns about the gap between rhetoric and practice.

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