"Why can't everyone teach like Claire?": a theoretical approach to understanding teacher differences

Vivien Townsend

Manchester Metropolitan University

This paper reports findings from my recently completed doctoral study into the ways in which three Year 6 teachers approached the task of teaching new fractions content in the 2014 National Curriculum. Their different approaches to teaching led me to explore theoretical tools to understand why they taught as they did. The first of these tools, 'history-in-person', enabled me to understand teachers' identities as both ever-forming and complex, and as informing action. And the second, 'internally persuasive discourse', brought insight into how the teachers orchestrated discourses including those of teaching and accountability. Theory led me to a sympathetic and nuanced understanding of my teacher participants and enabled me to realise why teaching like Claire is simply not an option for everyone. I will close by drawing out potential implications for anyone wanting to (in any small way) influence the work of teachers.

Keywords: history-in-person; internally persuasive discourse; social theory; insider research; policy enactment.

Background to the study

Following a "PISA shock" (Wiseman, 2013, p.304), education ministers in England ordered a review of the statutory National Curriculum. Ministers were keen to emulate teaching from high performing jurisdictions, and through a policy borrowing approach, hoped to improve England's position in international tests (DfE, 2012). In many aspects of the resulting curriculum (DfE, 2013), the expectations had been raised to be in line with teaching overseas, and this was particularly true of 'calculating with fractions' which had previously been taught in secondary schools but now would be a requirement at primary level. 'Fractions' is a topic that is notoriously hard to teach and learn (Nunes & Bryant, 2007), and as 'calculating with fractions' would not have been part of primary school teachers' own pedagogical training, this became an obvious focus for this study.

I chose to focus on the practices of Year 6 teachers because the year of data collection coincided with the first year that they would be statutorily required to teach from the new curriculum. This was also the first year that pupils in Year 6 would sit the renewed National Curriculum tests (SATs) in May. These tests, taken by pupils age 10-11, are one of the high-stakes mechanisms used to hold schools in England to account. Under pressure to ensure that their pupils perform well in SATs, I became interested in how Year 6 teachers would teach 'calculating with fractions'.

Methodology

Being an expert-insider-outsider researcher

My professional background has a bearing on my research. I worked as a primary school teacher before becoming a Local Authority adviser and most recently a freelance primary mathematics consultant. As part of the latter role, I run courses and deliver in-school training for teachers, lead subject leader network meetings, and work as the mathematics tutor on a primary PGCE programme at a local SCITT. Through the period of curriculum reform, I was chair of the joint ATM-MA primary group and coordinated responses to each consultation on curriculum changes. In short, I might be considered an 'expert' in primary mathematics teaching and policy implementation. Following Sikes and Potts, I can also be considered an 'insider' as I had "an attachment to, or involvement with, the institutions or social groups in, or on, which their [sic] investigations are based" (2008, p.3). And yet, I was also an 'outsider' as I was not actually working as a teacher or in a school, and I had never taught 'calculating with fractions'. I combined these three into the phrase 'expert-insider-outsider' as this seemed to best describe my position as researcher.

In my professional work I promote and model a connectionist approach to mathematics teaching (Askew, Rhodes, Brown, Wiliam, & Johnson, 1997). Skemp (1976) describes two forms of mathematical understanding – relational and instrumental – and I advocate for the former, encouraging the use of resources, pictures and talk in mathematics lessons so that pupils understand mathematical concepts rather than simply being able to reproduce an algorithm. I hoped to see relational teaching of 'calculating with fractions' in Year 6 classrooms.

Collecting data

Three Year 6 teachers from contrasting schools were recruited from my various professional networks to take part in the study during the 2015-16 academic year. Anna (age 20-29) was in her second year of teaching and I came to know her when she stood in for her Deputy Headteacher at mathematics subject leader network meetings. Bernard (age 40-49) was also in her second year of teaching having been a Teaching Assistant for many years at the school where she now works. I was Bernard's PGCE mathematics tutor during her teacher training year. I have known Claire (age 40-49) for more than 15 years from my time as a Local Authority adviser and she was a subject leader. We are members of the same professional associations and have a shared interest in mathematics pedagogy.

During the year, I observed each teacher during all of their lessons on 'fractions'. I sat at the back of the classroom taking notes, and tried to be unobtrusive in order to minimise "observer effects" (Robson, 1993, p.208). I also video recorded the lessons. At the end of each school term, I carried out a thematic analysis (Saldaña, 2009) of my observation notes for each teacher. These then provided the topics for discussion in termly interviews and I selected video extracts for us to view together "in accordance with a narrative structure that [was] emerging" (Derry et al., 2010, p.11). Interview transcripts were analysed – again, using thematic analysis – and these became the main source of data as it was in interviews that teachers told me about their decisions; they authored themselves.

Ethical dilemmas

At the end of the first term, I came to recognise that whilst I had completed 'official', (external) university ethics documentation, I was encountering issues of internal ethical engagement relating to:

> … the deeper level ethical and moral dilemmas that insider researchers have to deal with once 'in the field': the below-surface, murky issues that arise during and after the research process linked to ongoing personal and professional relationships with participants, insider knowledge, conflicting professional and researcher roles, and anonymity. (Floyd & Arthur, 2012, p.172)

A number of "murky issues" arose. In particular, I noticed that rather than treating my participants equally, I was favouring Claire (whose pedagogical approach most closely matched my own) and viewing Anna and Bernard negatively. When I looked back on the data collected, I noted that in my field notes, the detail of the lesson was supplemented with my judgements on their teaching; I was noting not only what they did, but also what I wished they had done instead.

My challenge as a researcher was to find a way to think about Anna, Bernard and Claire so that they were valued equally. I reflected that they had each volunteered and so I had a duty to treat them well. I also reflected that in the act of volunteering, the participants were most likely claiming that there was something 'good' in their practice that they wanted to show me and tell me about. I needed to look more closely at them as teachers; to understand what led all three to teach as they do, which I hoped would result in a more sympathetic view of Anna and Bernard.

The case for social theory in understanding teacher difference

I wanted to understand, *Why can't Anna and Bernard teach like Claire?* I sought tools from social theory to support an exploration of teacher difference and landed on the *Figured Worlds* theory of Holland, Lachicotte, Skinner and Cain (1998). Two tools from this framework were particularly useful: 'history-in-person' and 'internally persuasive discourse'. These are described below and exemplified using Claire.

History-in-person

Holland et al. work with personal biographies through the idea of history-in-person:

> One's history-in-person is the sediment from past experiences upon which one improvises, using the cultural resources available, in response to the subject positions afforded one in the present. (1998, p.18)

We are shaped by our history-in-person, and the "sediment" of our experiences influences: how we see the world; how we interpret what we see; and how we act today. For teachers of mathematics, this may include "sediment" from both their experience as learners or 'do-ers' of mathematics and as teachers of the subject.

Claire conveys her history as a mathematics teacher to me through a short pen portrait. Here she describes herself as having recognised early in her career that she "had no idea how to teach maths at all" which led to her embarking on a career-long self-motivated programme of professional development in relation to teaching mathematics. Significantly, she was a leading maths teacher, she studied for the Mathematics Specialist Teacher (MaST) qualification and now works with the local Maths Hub to learn about and disseminate 'mastery' teaching. She describes herself

as an expert mathematics teacher with a "teaching methodology" borne from the "sediments" of all of her past experiences.

Internally persuasive discourse

Holland et al. (1998) borrow internally persuasive discourse (IPD) from Bakhtin (1981). They suggest that we encounter multiple discourses and the only way for an individual to orchestrate these is by taking a stance towards them. For example, mathematics teachers meet multiple discourses of how the subject could be taught (relationally, instrumentally, through problem solving, with concrete resources, using the outdoors, in mixed attainment groups etc) and must orchestrate them; they decide which to pay attention to and which to ignore. Orchestration is not always straightforward as some discourses are dominant and therefore less easy to take a stance towards. The discourses with which one has become aligned could be described as internally persuasive:

> Internally persuasive discourse—as opposed to one that is externally authoritative—is, as it is affirmed through assimilation, tightly interwoven with "one's own word." In the everyday rounds of our consciousness, the internally persuasive word is half-ours and half someone else's. (Bakhtin, 1981, p.345)

If internally persuasive words are "half ours and half someone else's" then these are external discourses that we have approved of and taken on, perhaps because they complement our other existing beliefs and values. Our IPD is akin to beliefs and values, and it determines the stance we take when encountering new discourses.

In Claire's teaching, she shows me the different pedagogic ideas she has encountered – especially those of John Mason and Jo Boaler – and in interview tells me how she has made these discourses her own, coherently bringing together complementary pedagogies in what she describes as her "teaching methodology". Her pupils are encouraged to use manipulatives, and regularly they are challenged to make and test generalisations. Claire's "teaching methodology" – or her IPD – places pupil learning and understanding mathematics at the heart of teaching. In interview she acknowledges that her own perspective (IPD) is counter to the "school perspective … the perspective is results, isn't it in Year 6?" and while her colleagues experience the "school perspective" as dominant – and teach instrumentally in order to get correct answers quickly – Claire takes a stance towards this because her IPD is so secure. I come to think of Claire as a *good learning-focused teacher*.

A more sympathetic view of Anna and Bernard

Using these tools, I came to understand each teacher according to their histories and according to how they orchestrate discourses through their IPD. I stopped being disappointed that Anna and Bernard didn't teach like Claire, rather I came to understand Anna as a *good results-focused teacher* and Bernard as a *good welfare-focused teacher*.

Anna, the good results-focused teacher

In interview, Anna describes herself as, "an absolute achiever from a competitive schooling environment". She tells me that she was good at mathematics herself and that she now puts pressure on the pupils to achieve highly. She is driven to be successful in her role as Year 6 teacher, and describes wanting "a bit more credit" for the success of the pupils in her class when results are combined across the year group.

Anna teaches in what Skemp (1976) would describe as an instrumental approach. She models the algorithms for 'calculating with fractions', sets practice questions for her pupils and expects them to remember and apply these rules. Occasionally she puts a question into a real-life story (usually about food) but she rarely represents questions pictorially and never with manipulatives.

Anna reports that her Headteacher is keen to introduce more reasoning and problem solving into mathematics lessons across the school. She describes this as being "a wonderful morning of maths but in the build up to SATs is not my priority". Anna here demonstrates that she is aware of other discourses of teaching mathematics but that as a Year 6 teacher, she has no choice but to adopt a "skills-base" approach as she believes that this will maximise results in tests. She also spends more time on topics that have a greater allocation of marks, something she describes as "selfish":

> In the grand scheme of things, just from a selfish point of view, if they don't know translation, they lose three marks. If they don't know how to multiply, they lose a lot more. So selfishly, I've prioritised number.

Anna describes the results as being a judgement of her and feels a great burden of responsibility and a competitive desire to prove that she is up to the job. The way in which she orchestrates mathematical discourses is informed by her history-in-person and her beliefs that achieving results is of utmost importance.

Bernard, the good welfare-focused teacher

In a pen portrait written by Bernard, she describes herself as having embarked on a degree in her thirties because she "always wanted to achieve something; to test myself and my [academic] abilities". Central to Bernard's story is that she is from the community in which she now teaches. She describes how, as a child, she was failed by the community and her teachers, and this provides her with a steely determination to ensure that the pupils in her care are loved and succeed academically so that they have good life chances.

In her mathematics teaching, Bernard shows concern for pupils' welfare, often asking them to indicate whether they feel confident. The pedagogical approach to teaching fractions that she adopts is a hybrid of Skemp's (1976) two forms of understanding. For example, she tries to use pictures to show the children what happens when multiplying fractions but chooses an unwieldy example and abandons her attempt, resorting to encouraging the pupils to follow a list of rules. I reflect that perhaps she tried to use pictures because this is what I promoted in her PGCE programme and she knows this is what I like to see.

Part way through the year of data collection, Bernard's Headteacher purchased some concrete manipulatives for teachers to use when teaching 'calculating with fractions'. Bernard told me about what happened when she introduced the resource:

> [The pupils] asked quite quickly when we did use them if they could [move on] and they were like, "But I can get it without that!" So they liked playing with them to start off with but then they wanted to move on and do it without. They were like, "It's easier to do it in my head!" And I don't want to turn round and say, "Don't do it in your head." Cos when they do the calculation test they're going to have to do a lot in their head and they're going to have to do it quickly.

Bernard is willing to engage with the discourse that using manipulatives will support learning, but keen for the children to be both happy and successful in the tests, she allowed them to abandon the resources and to work as they had done before

(following rules). The way in which she orchestrates this mathematical discourse is informed by her IPD that children's happiness and success are most important.

Conclusion: so, why can't everyone be like Claire?

Anna, Bernard and Claire (like all teachers) are unique; their specific personal histories and particular sets of beliefs lead them to engage with new discourses and policies in very different, personal, ways.

Those of us who are in any small way in the business of trying to change teachers' practices might do well to think of the CPD process as the introduction of new discourses which will be orchestrated by teachers according to their IPD. Understanding something of teachers' personal histories and beliefs about mathematics teaching may help us to identify opportunities to build on existing practice and thus maximise change.

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