

# Mathematics pedagogical change: rethinking identity and reflective practice

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**Abstract** This article deals with issues that are central to changed mathematics pedagogical practice. It engages general debates about teaching reflexivity and within that, more specific debates in relation to identity. It uses theoretical concepts derived from Lacanian psychoanalysis as a way of understanding what structures a teacher's narrative about his practice. Thus, the article is both a study of one teacher's reflections on a sequence of algebra lessons at the secondary school level, and an exploration into a range of theoretical issues about identity construction, about knowing, and about effective practice.

**Keywords** Mathematics pedagogical change · Identity · Reflective practice · Psychoanalytic theory

## Introduction

A major focus in mathematics education today in New Zealand, and in many other countries, is the enhancement of pedagogical effectiveness. The focus is based on the realisation that the teacher is a key resource for addressing the long-standing problem of student underachievement and is a critical figure in promoting more egalitarian classrooms (see Anthony and Walshaw 2007). A contemporary interest, centred on the teacher as reflective practitioner (for example, Muir and Beswick 2007), adds a compelling layer to our understanding of effective teaching. Teacher reflection, it has been proposed, provides a way of authoring the teacher's self into an account of pedagogy and, hence, is a way of promoting change. In this article, my objective is to provide a vocabulary and a lens for explaining and analysing shifts in mathematics pedagogical practice. In offering empirical and theoretical insights on what counts as pedagogical change, I magnify reflective

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practice, arguing for the strategic use of concepts drawn from Lacanian psychoanalysis to bring about transformation in the context of the mathematics classroom.

What the literature clarifies is that mathematics instructional practice is informed by teachers' active engagement with processes and people. For example, some researchers have analysed formal structured initiatives that direct and/or facilitate professional development (for example, Boston and Smith 2009; Ferrini-Mundy et al. 2007; Norton and McCloskey 2008). Some have analysed the role of the school/department/state, in teachers' change processes (for example, Lewis et al. 2009; Peng 2007). Others, who work to improve teacher knowledge, premise their work on the understanding that teachers' interpretation of curricula, their enactment of practices, the tasks they set, and their use of curriculum materials, all, to some extent, are influenced by what they know about mathematics and what they know about teaching it (for example, Wallach and Even 2005). In identifying patterns and profiles, research has allowed us to understand what it is that contributes to sustained change in pedagogy.

The ideas expressed in the literature on the reflective practitioner have considerable persuasive purchase in our attempts to understand effective practice. The practitioner's practice, shaped by reflective analysis, reacts "against a view of practitioners as technicians who merely carry out what others, outside of the sphere of practice, want them to do" (Zeichner 1993, p. 204). Specifically, the practitioner's reflections initiate a personal renewal, activating new meanings of self through which new understandings of a professional trajectory emerge. Identity, then, emerges as a key concept in the discourse of the reflective practitioner. In an attempt to address what I see as a shortcoming of the concept of identity, as it is construed within the discourse of the reflective practitioner, I have sought inspiration from psychoanalytical theory and found Lacan's (for example, 1977) arguments about narratives of the self, and Žižek's (for example, 1989, 1998) related examination of how subjectivities are constructed across sites and time, influential.

These psychoanalytic ideas are applied to a research project in which I was involved. In the discussion, in dealing with issues that are central to shifts in pedagogical practice, I attempt to understand why and how change is enacted by individuals. The interest involves first examining assumptions underpinning the contemporary discourse of reflective practice. I then place the practitioner's 'self' under scrutiny, by exploring how intersubjective negotiations, between researcher and practitioner, animate the practitioner narrative generated. Thus, this is both a study of one teacher and his reflections on a sequence of lessons, and an exploration into a range of theoretical issues about identity construction and change processes in mathematics teaching and research. Theorising the connection between narrations of the self and wider processes and events, my story provides a counterpoint to current thinking about researcher reflexivity.

### **Reflecting on identity and reflective practice**

Teacher reflection, formalised through practitioner research, has crystallised into new forms of self-expression for teaching practice. Resulting in part from a heightened sense of awareness of the situatedness of meaning construction, teacher reflection is presented as a counter to the effects of researcher power, privilege, and perspective, and as a catalyst for an empowering dialogue for generating pedagogical change. With its roots in the critical social science of the Frankfurt School, the reflective practitioner discourse is a form of inquiry developed, according to some (for example, Carr and Kemmis 1986), from Habermas's emancipatory category of human interest. However, there are others, for example

Elliott (1987), who maintain that practitioner research descends from the ideas of Gadamer. Whatever source is claimed, reflexivity, in these accounts, has become a methodological resource for authorising the teacher's self into the teacher development story.

The strategy of teacher reflection does seem to be empowering in that it provides teachers with the resources to support a serious deliberation of their work. Creating a space for the experiences of the reflective practitioner does seem to deal with the problem of those whose subjectivity is typically effaced within research stories of pedagogy. Hence, the model of the reflective practitioner, organised as it is around the variable constructions of pedagogical reality, and taking into account the teacher's interests, involvement and investment, assumptions, material, and historical and cultural circumstances, has to be instructive in debates surrounding pedagogical questions. But those questions take us into another realm—the realm of authority and power structures. Upon whose agenda does the reflective practitioner base her assessments? Whose values and ideals tend to prevail?

Personal narratives as experienced and told by teachers about their practice with a view towards development are propelled by assumptions to the effect that 'experience' is self-evident and that pedagogical change is specifiable. Thus, there is a certain level at which the reflective teacher assumes a core true self. Walkerdine et al. (2003) have emphasised that there is no core self; instead, the "self, like those of the research participants, is created as both fiction (in the Foucauldian sense) and fantasy" (p. 180). It is an effect of the experience of interacting with social groups, cultures and institutions. Meanings of the self, they contend, are produced in an ongoing process, through a range of influences, practices, experiences and relations that include social, schooling and psychodynamic factors (see also Brown 2008; Walshaw 2004a). One appropriates different 'selves' in relation to those interactions. In this line of thinking, then, giving the teacher a voice, as a methodological practice, is seen to resonate with Beck's (1992) notion of 'reflexive modernity', in which individuals seek out by strategic means a coherent life story within a fractured landscape. Walkerdine et al. have argued against the claim that reflexive forms of action are demanded from contemporary life, not least because the reflexive self is based on a foundational conception of the human subject, and hence much too cognitive in nature.

Pitt and Britzman (2003) maintain that research that promotes teacher voice, based on a foundational conception of the human subject, fails to engage the very problem of articulating experience—neglecting to ask what is it that "conditions and structures the narrative impulse" (p. 756). In the view of Brown and England (2005), the reflections and changes proposed merely provide "a mask for the supposed life behind it, a life with attendant drives that will always evade or resist full description" (p. 1). Importantly, the discourse of the reflective practitioner underplays "the importance of relationships and forms of reciprocity and obligation that are embedded within them for understanding the identities and practices in which [teachers and researchers] engage" (Thomson et al. 2003, p. 44). Such forms of reciprocity and obligation are never straightforward no matter how 'truthful' a practitioner, and how 'detached' and 'objective' a researcher may attempt to be.

This is not to suggest that teachers should remain invisible participants. Abandoning the practice of researcher reflexivity is not the objective here. However, the point worthy of emphasis is that, whilst mastery and victory narratives of the reflexive self, foreground the teacher's subjectivity in the change process, they signal merely surface understandings about and point to a lack of critical examination of the way in which change, and hence reflections, are actually produced. In particular, the way in which emotions mapping onto a sense of self-as-teacher, tend to be overshadowed. As a transformative strategy, reflective practice fails to theorise how processes of change are lived out 'experientially',

performatively, at the level of the individual, even as it claims emancipation, transcendence and freedom from ineffectivity.

### **Contextualising the exploration**

The project in which I attempt to understand teacher change through practitioner reflection is a two-year investigation into the interactive character of teaching and learning. I couch my investigation specifically within the participation of one teacher, whom I name here as Dave, in a larger project that represented the New Zealand component of the international Learner's Perspective Study (LPS). The project had two main attributes: it provided a platform for exploring the connections between teaching and learning. In addition, it provided a medium for teacher change. Thus, the strength of the overall design of the larger project was that it allowed both pragmatic and highly theoretical issues to be addressed simultaneously.

Data for this discussion were collected through classroom video records, interviews with and classroom researcher observations of the teacher who had been identified by the local mathematics teaching community as an effective secondary school practitioner. Additional data that I draw upon for this discussion are taken from an impromptu interview recorded, at Dave's behest, at the end of the project. In his fourth year of teaching, Dave taught in a large co-educational school, catering for students from, in the main, the middle socio-economic sector. Students in his class of 30 formed one of two extension classes at the Year 9 (aged 13 years) level. This was a class that included "some very top students who conceptually pick things up very quickly" (Interview, post research). The classroom research component focused on 10 consecutive lessons that represented a unit on algebra—specifically, formulating linear equations, substitution, and solving linear equations.

In the analysis of Dave's data, the intent is to unpack the ways in which his identity as a teacher is mobilised, reconceptualised and reformed through his participation in the research project. The analysis involves uncovering and exposing the mechanisms through which he comes to an understanding of his classroom practice (Brown and England 2004). The work of Lacan and Žižek allows me to engage critically with the ideological frameworks through which Dave, as teacher-as-reflective practitioner, produces a narrative of his classroom work. Methodologically, in taking the reflective self to task, the psychoanalytic interest in how Dave produces his narrative acknowledges the interdependencies and the realities that shape not only classroom life but also the research process itself. It will involve looking at the intersection of the teacher's subjectivity, the researcher's subjectivity and intersubjective negotiations and the place of emotions between both.

### **Working with identity and reflective practice**

Understanding who I am and whom you see

In interview following teaching of the ten algebra lessons, Dave explained that his teaching goals for the unit were twofold: (1) that students will learn to use and understand equations to solve problems and (2) that they will develop an understanding of the meaning of equality ( $=$ ). My classroom observations recorded the content of the ten lessons as follows: Lesson 1 revised understanding of basic understanding of algebraic terms and fundamental algebra manipulation. Lesson 2 developed a strategy for writing

simple linear equations and for solving them using a ‘1-step’ approach (for example,  $x + 17 = 29$ ). Lesson 3 proceeded to a 2-step approach to the solution of simple linear equations (for example,  $3x + 5 = 41$ ). The understanding and solution process was further developed in lesson 4 (for example,  $2x + 5 = 19$ ). In lessons 5 and 6, real-world applications of solving simple linear equations were explored. Lessons 7 and 8 investigated the equals sign further and strategies were extended in Lesson 7 in order to solve equations with  $x$ -terms on both sides (for example,  $3x + 4 = 2x + 9$ ) and, in Lesson 8, negative values (for example,  $3x - 3 = -2x + 7$ ) were incorporated. Lesson 9 introduced fraction and decimal solutions (for example,  $3x - 1.5 = 12.3$ ). The sequence of lesson culminated in lesson 10 in which real-world applications of solving equations with non-integer solutions were explored.

In developing his teaching goals and constructing his lesson plans from these goals, Dave was both constrained and enabled by a national curriculum that validated specific algebra content knowledge for Year 9 students: ‘form and solve simple linear equations’. An accelerated programme operating for Year 9 students at his school allowed him to advance his teaching goals to the next level within the national curriculum: ‘form and solve linear equations’. Together, the official curriculum and the school’s acceleration policy, with its scheme of work for mathematics and its set textbook, produced the terms of mathematical content knowledge, and thus the parameters around which pedagogical practice would be created. Within those parameters, the school had allowed Dave a certain ‘degree of freedom’ for teaching within the walls of his classroom.

In his final interview, Dave, reflecting on his lessons during the research process, noted:

...I put a lot of thought into it and it wasn’t always intentional thought, it was just lying in bed at night thinking about these ideas because I am quite involved in it therefore the ideas that I am thinking about are more in the forefront of my mind than some of the other lessons that I am teaching with the other classes....But what I really got out of it was that during that period of time was a heightened sense of awareness of the issues surrounding my teaching: the kids hardly respond, the purpose of what my lessons are and whether I am achieving that or not, how the kids are responding to what I am doing, my ability to change tack if something unexpected happened—and I enjoy all of that. Because on reflection it has made me realise that as a teacher I can invest similar amounts of time and energy into another unit regardless of the class or the topic, I will get something as valuable out of it.

Dave wants his practice to be effective. He has ‘dreamed up’ characteristics that designate the ideal teacher. He makes assumptions about how his teaching intersects with those characteristics. Žižek (1989) puts it this way: The subject ‘put(s) his identity outside himself, so to speak, into the image of his double’ (p. 104). In the view of Lacan and Žižek, identity does not rely on a pre-given and self-transparent subject who is in control of her own thought, but is heavily dependent on one whose ontological status remains permanently unclear. In Žižek’s view, ‘(t)he Cartesian ego, the self-transparent subject of Reason, is an illusion; its truth is the decentred, split, finite subject thrown into a contingent, nontransparent context’ (p. 2). This process is ongoing and has its origins in what Lacan names the mirror stage in which a young child comes to identify with an image outside itself—either her own mirror image or the image of another (see Cotton 2010). This is an important idea because it suggests that reducing reflection to conscious experience has the effect of covering over the complexity in which the reflective person finds herself. In the Lacanian assessment, the self is not “the autonomous source of spontaneous, self-

originating activity” (Žižek 1998, p. 5). Rather, the self is conceived as a fantasy of that self. Crucially, between the identifications Dave and others, have of Dave, there will always be a divide. There is always a trace of mis-recognition that arises from the difference between how one party perceives itself and how the other party perceives it.

How can we deal with these issues systematically? In psychoanalytic theory, the teacher assumes the place from where he is being observed; from where he looks at himself as likeable/acceptable, and worthy of being liked and accepted (Žižek 1989). The fantasy in Dave’s case is built around complex social processes, involving parents, schools and the media, and, in this case, a Ministry of Education specific articulation of teacher effectiveness, that had punctuated educational discourse at the time of the research. Keenly aware that I had a vested interest in the notion of teacher effectiveness, Dave was, it is possible to suggest, endorsing a narrative that was not chosen through rational deliberation. Like teachers in other studies (for example, Brown and McNamara 2005; Hanley 2007; Nolan 2007; Walshaw 2004b), the self Dave is narrating is the self identified with an image outside of himself—a fantasy of who he thinks he should be in this research, in this classroom and with this class. As Dave pointed out:

In hindsight...what I could offer really, hopefully, [was] a rich set of data that you guys study for. I wanted to make sure my intention of the ten lessons, that I carried it out, my expectations for that, so that there wasn’t any waste, if you like, in those ten lessons. I really wanted them to be a quality ten lessons that I was happy with, that you could hopefully use...If you open up your teaching, you do need to be careful that everything is constructive, all the feedback is constructive and it promotes better teaching and learning.

He has, in saying this, assigned a position for me. Yet the self-as-researcher that has been designated for me is merely a fabrication that exists in the space between him and me. What images do I have of myself in this context? What images do I choose to identify with? I wanted to be seen as discreet and unobtrusive in Dave’s classroom. The visual-spatial images (and the illusion) of my place in Dave’s classroom represent what I would *like* to be at this school during this research. However, there is a conflict in this image I hold of myself in that I am still the researcher in this interview and there is no escaping from the symbolic identification assigned to me.

### Understanding the self-in-conflict

In developing students’ understanding of the equals sign, in lesson 2 Dave drew a number of balanced scales, weighing icons that represented the four suits of a pack of cards. For example, in one diagram, the left hand side of the balance scales held five clubs and the right hand side—a diamond as well as five spades. The task was to determine the value assigned to a spade and to a diamond. Dave pointed out to the class: “The puzzle is saying if we have a set of perfectly balanced scales then the left hand side and the right hand side must be the same.” For this and other similarly rich open-ended problems in lesson 2, Dave anticipated a range of possible solutions and accepted a ‘guess and check’ method to find values for a spade and a diamond. He then proceeded to more difficult problems in which writing an equation was a prerequisite for a solution.

As a researcher observing his classroom practice, I formed an impression of Dave’s teaching as immensely effective. I observed the quiet undivided attention he gave to his students and witnessed the kinds of intellectual exchanges and sophisticated mathematical argumentation developed within the classroom. Particularly uplifting was the way he

enabled individual students to appreciate for themselves that the values they had found for a spade and for a diamond were (or were not) mathematically sound. Because of this, I wanted to observe his teaching, and the positive influence his teaching had on student outcomes. I wanted to hear about his lesson objectives and witness their attainment. He said in an interview after lesson 2:

With the balancing of scales, I am trying to sow the seed for later on in terms of manipulating each side...They got the idea that there were scales that needed to be balanced and by manipulating what goes on the sides of the scales was really what it was all about.

I asked him: "So the balance idea, each side must be different?" He replied:

Yes, because later on they are going to need to understand that the equal sign doesn't just mean...and up until now most of them think the equal sign means 'works out to be', or 'I get this', whereas later on I am going to have to adjust their view of what that equal sign means and think in terms of scales. And so later on when I talk about scales, they will have a reference point for it.

In lesson 3, Dave introduced the 'magic box' (sometimes known as the 'function box'). He took a step-by-step approach to solving  $3x + 5 = 41$ , taking  $x$  first, multiplying it by 3, posting the  $3x$  card into a box, then posting a '+5' card into the box, and exiting the number 41. He explained to the students about reversing the order of operations and proceeded to carry out the reversal process in order to find the unknown variable, and hence to solve the equation. Dave then repeated the 'magic box' trick with ' $2x$ ', ' $-6$ '. He asked students to write the first part of the equation, in the same way that he had shown them to do during the first magic box episode. Once the right hand side number had been provided, students then substituted the value obtained for  $x$  in the equation to verify the result. In lesson 4, Dave again used the magic box trick, illustrating the process of solving equations by reversal using two different equations that students had already worked on and solved, one of them being  $2x + 5 = 19$ .

In lesson 7, Dave discussed with his students the meaning of equality and the importance of developing an understanding of 'equals' appropriate for the task at hand. He then used a data projector to show an animation of balance scales for a different equation:  $3x + 2 = 2x + 3$ . Again, using a step-by-step approach, he placed ' $3x$ 's' and ' $2$ ' on the left hand side of the balance scales. Students immediately noticed that the scales became unbalanced. Dave then placed ' $2x$ 's' and ' $3$ ' on the right hand side, to achieve equilibrium. He worked through a solution of the equation, using the procedure of 'doing the same to both sides'. The visual display illustrated that 'doing the same to both sides' guaranteed to produce balance in the scales.

After lesson 7, I remarked to Dave in interview: "In a couple of earlier lessons you used a model of the box where you put in something and a process happened and then got you back to the original. You had to reverse or undo or go backwards. So that is a different way of thinking about equations." Dave replied:

When they arrive they tend to have this idea that that's what an equal sign does. It's a command that gives you an answer after you have done certain things. So I was keeping the traditional view of what an equation is about. You do something to ' $x$ ', then maybe you subtract a number from it and then you get an answer. You push the equal button and out comes this answer. And I was trying to process that if we reverse that idea we can undo what has happened and get back to ' $x$ '.

In lesson 8, Dave used a different piece of software on the data projector to show an animation of solving equations. The representation was of a set of balanced scales, as before, but in this case weights corresponded to the addition of an entity.

T: ...How do you think we could represent for example 'minus 3'. How do I get  $3x$  minus 3 on the left hand side of my scale? Plus 3 is a weight blocks pulling down. What do you reckon minus 3 might be James?

S: Lifting it up.

T: Lifting it up. So what kind of symbol do you think we could use to represent lifting the side up?

S: A helium balloon.

T: A helium balloon. All right let's try it.

The class then watched an illustration on the data projector and the use of weights and balloons for solving  $3x - 3 = -2x + 7$ . More discussion on the process developed and then the class set to work on examples from their textbook. In our discussion immediately after the lesson, whilst watching the video clip of the lesson, Dave pointed out:

...they could picture if you had two balloons pulling one side up and you take them away, the impact is going to be the same as if you put something on it to weigh it down....The idea of having a balanced scale, having them visually see what is essentially working; visually step by step is really helpful. To be able to say right 'we are taking away three from this side and then go to the software and take three away' and see it is not balanced and you need to keep it balanced so what do we do? Step by step process, going from the working to the visual really works very well.

Just before all these observations were made, I had pointed out that it was not entirely clear to me what the balloons and the blocks represented. I was also unclear about the use of multiple representations, namely, the 'magic box', the balance scales, in addition to the balloons and blocks. In response to the balloons and blocks question, he explained: "If I wanted  $3x$ , I had to have three little blocks built up, and if I wanted negative  $2x$  each of the two balloons represented a negative  $x$  so I needed two of them to represent the negative." Reflecting on the lesson, he drew attention to "lots of learning. It was a really packed lesson, the coming together of ideas and putting them in place."

In the final interview—the interview requested by him and which took place a few weeks after the classroom data gathering had concluded—Dave reflected on his teaching:

The one idea that I haven't one hundred percent really settled on is again that 'equals sign'. My approach was 'what do they know, and what knowledge have they brought into the classroom?' and predominantly it was that 'equal' sign...it's 'give me the answer', strike the calculator and give me the answer and write it down on your paper after the work and see what the answer is. And that is what they brought into the classroom, so I used that initially to get them thinking about how to solve the equations, 5 times  $x$  plus 3 equals something and then we will reverse that process to figure out what the original number for ' $x$ ' was. And then later I introduced the idea of 'same'—the two sides of an equation being the same and you can swap the order around. There is no direction from left to right, it's just a set of scales that are balanced and that is when I brought in more complicated equations with variables on both sides. And they responded well to that but I have never really been sure whether I should have brought that idea of 'same' straight away and I am still not sure.



In attempting to understand Dave's reflections on his teaching, it is useful to be mindful of Žižek's claim that "identification is always identification on behalf of a certain gaze in the Other" (Žižek 1989, p. 106). During the weeks that separated the data collection from the final interview, the teacher had reflected on his practice and has attempted to figure out what it is that the Other wants; he desired the Other's recognition. In thinking through and about his practice, he continuously interplayed the presence and absence of those signifiers of practice that he believed determine what constitutes effective pedagogical practice. Gestures, facial expressions, 'slips of the tongue' and specific questions from me and from students or others, had, without our full awareness of them, contributed towards that determination.

At an overt level, the research data foreground the construction of a coherent classroom identity that developed in response to a set of themes to do with pedagogical skills, knowledge and agency. At a more covert level, Dave's talk evoked traces of other events and other interpersonal relations, as well as defences that created a rationale and a sense of cohesion to his interview. Together, these two levels opened up important aspects of his subjectification in relation to being a mathematics teacher. It was not simply the present that factored into the construction of teacher identity: past as well as anticipated experiences, in a wider range of sites, also played their part in how Dave lived his subjectivity as a teacher.

Dave, like any other effective teacher, was constantly trying to close the gap between how he sees himself and how he thinks others see him, always attempting to reconcile what he is with what he might become. It is not an especially obvious procedure, but nevertheless, in its subtlety, it was extremely powerful in establishing the parameters along which his identity as a mathematics teacher will be constituted. It is in this sense that we can understand how the terms that enter into the production of a mathematics teaching identity are "outside oneself, beyond oneself in a sociality that has no single author" (Butler 2004, p. 1). What Dave was looking for is an instance, a moment, or what Lacan calls a 'quilting point', that will provide him with a marker, a strategic place from where he could make his choices about how to close the gap between his own and others' views of him as a teacher. Having secured that marker, Dave was able to begin to act upon his "imagined transformation of status" (Walkerdine 2003, p. 254), and change his practice.

In Dave's case, in the instance of the final interview, a 'quilting point' was, amongst other things, the researcher's element of doubt over the representation of balloons and weights during the data show in Lesson 7. Although immediately after the lesson he had assessed the lesson as productive, in his reflections on his teaching during the final interview, his 'true' sense of self at that moment was betrayed. Fictions and fantasies of practice competed for Dave's attention, operating beyond his comprehension, provided a censoring device as a defence against a set of fears and concerns. They shaped his lived experience, defending against his anxieties, and informing the kinds of interpretations he made about his teaching in the future. It is in this sense that we can understand the psychoanalytic claim that the 'core' inner self is not 'core' at all; rather, a sense of self is constructed through language and intersubjective images projected onto us by others (teachers, students, parents, principals, researchers, and so forth) of how they would 'see' us within a set of given social relations. But it is more than this: Dave's identity as a discursive constitution is also about the "relations between positionings" and the emotional commitment on his part in 'taking up' those positionings when "they are held...in ways which can be quite contradictory and conflictual" (Walkerdine et al. 2003, p. 180).

## Conclusion

In this special issue of JMTE, research on teachers' reflections of practice offers a productive site for exploring questions of identity and change. Contemporary theories of meaning making and subject formation remind us of the inadequacy of language to capture lived experience. In claiming that the narrative of lived experience can never coincide completely with experience itself, these approaches have been an important resource in this article. I have taken particular inspiration from psychoanalytic writing as a means of probing the difficulties of narrating the experience of teaching mathematics, in any straightforward way, and as a way of problematising the use of experience to initiate change. In acknowledging the complexity and complicity operating when teachers engage in reflective moments of their practice, the approach foregrounds the insufficiency of knowledge, the constitutive interplay of subjectivity, obligation and reciprocity and the psychical dynamics at play in narrating oneself. In doing so, the psychoanalytic approach closes the affective-cognitive separation that characterises conventional notions of reflective practice.

There are significant differences between the conventional approach to reflective practice and that developed through psychoanalytic theory. For Lacan and Žižek identity claims can never achieve final or full determination; the past is always implicated in the present. Since memories of practice are constructed from past investments and conflicts, always with a gaze towards the Other, "narratives are not the culmination of experience but constructions made from both conscious and unconscious dynamics" (Pitt and Britzman 2003, p. 759). Those constructions are inevitably destined to miss the mark, continually subverted within a kind of metaphorical space between people, never fully understood and never fully captured by language.

Narratives of pedagogical practice will never reveal a fidelity to truth. There can never be a 'truthful' account of the mathematics teacher's reflections because "the fictions of subject positions are not linked by rational connections, but by fantasies, by defences which prevent one position from spilling into another" (Walkerline et al. 2003, p. 180). However, that realisation does not in any way prevent us from working at understanding how intersections of fictions and fantasies of practice are lived by teachers. To the contrary, exploring how the subjectivity of the teacher is produced at the emotional level is more pressing than ever in any discussion of teacher change. It is pressing in that it alerts us to the fact that teachers' reflections are more than instruments of change; they are also instruments of social reproduction. Paradoxically, then, reflective practice is as regulatory as it is emancipatory. For the politically motivated researcher, the goal will be to make transparent the epistemic constructions that compete for attention about what will count as mathematics teaching in schools. It is in that sense that a psychoanalytic approach operates as a test-bed for innovation, and a catalyst for pushing ideas about teacher change forward.

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