Teaching and Teacher Education 46 (2015) 62–71

Contents lists available at ScienceDirect

Teaching and Teacher Education

journal homepage: www.elsevier.com/locate/tate

Teacher education for social justice: Mapping identity spaces

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HIGHLIGHTS

- The relationship of identity and teacher education for social justice is considered.
- Social justice teacher identity has both determinate and indeterminate aspects.
- The concept of striated and smooth identity space is proposed.
- A study of a group of social justice and beginning teachers in England.
- The need for pedagogies of discomfort, inquiry, compassion and respect.

ARTICLE INFO

Article history:
Received 28 January 2014
Received in revised form
3 October 2014
Accepted 13 October 2014
Available online 12 November 2014

Keywords:
Teacher identity
Social justice
Teacher education
Mathematics teacher education
Striated and smooth identity space

ABSTRACT

Teacher education requires an account of the complex ways that beginning teachers negotiate their relationships to social justice. A determinate view of identity successfully describes relationships to relatively stable social justice positions. This supports the adoption of pedagogies of discomfort and inquiry. However, socio-cultural accounts of identity emphasise indeterminate aspects of identity. The concept of striated and smooth identity space is proposed and illustrated by analysing the responses of four beginning mathematics teachers to the experience of a discomforting and inquiry based pedagogy. This challenges teacher educators to extend their pedagogies to embrace additional principles of respect and compassion.

1. Introduction

Addressing issues of social justice in teacher education is a growing area of concern, enquiry and practice, this is particularly so in the US (Cochran-Smith, 2009; Grant & Agosto, 2008; Kapustka, Howell, Clayton, & Thomas, 2009; McDonald & Zeichner, 2009; Zeichner, 2009), but also in the UK (Boylan, 2009; Farnsworth, 2010), Australia (Mills, 2012; Mills & Ballantyne, 2010), and Canada (Carson, 2005; Philpott & Dagenais, 2012).

Recent scholarship and research has identified the need to explicitly articulate theoretical frameworks that can guide teacher education for social justice (Cochran-Smith, 2009). We view social justice as having relational, distributive (Cochran-Smith, 2009; North, 2008) and participative (Fraser, 2008) aspects, across micro and macro ethical dimensions, and as a form of action rather than a state to be achieved (Griffiths, 2009).

There has also been considerable interest in the role identity plays in teacher development from a range of theoretical perspectives (Beauchamp & Thomas, 2009; Rodgers & Scott, 2008). Discussion of identity is not reflected to the same extent in literature on social justice informed teacher education. However, recently a number of writers have used identity as an analytical concept in relation to social justice and teacher education in different national settings, including Canada (Carson, 2005; Carson & Johnston, 2001), England (Farnsworth, 2010) and the US (for example, de Freitas, 2008; Ma & Singer-Gabella, 2011). This paper adds to these accounts with an empirically informed, theoretical and methodological contribution that examines the relationship between identity and engaging with issues of social justice in teacher preparation. In addition, the empirical study itself, located in England, complements the more extensive literature base on teacher education for social justice that is predominantly focused on the US context. The paper addresses two related questions: how

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http://dx.doi.org/10.1016/j.tate.2014.10.007
0742-051X/

can the identity positions of beginning teachers be theorised and what are the pedagogical implications of this?

We argue that adopting a complex understanding of identity is necessary to theorise teacher education for social justice and to inform pedagogy. We consider literature that implies a relatively stable, determinate understanding of identity in relation to social justice. This is useful and can guide practice. Indeed, it has supported effective social justice teacher education pedagogies, principally focused on discomforting taken for granted beliefs and dispositions through challenge and inquiry. However, a determinate view of identity needs to be augmented by more complex understandings. This is in keeping with the broad agreement in the literature on teacher identity that it is dynamic as well as stable (Beijaard, Meijer, & Verloop, 2004; Day & Kington, 2008) contextual, relational, emotional, multiple and storied (Beauchamp & Thomas, 2009; Rodgers & Scott, 2008). The central concept we introduce to picture this complexity is that of striated and smooth (Deleuze & Guattari, 1987) identity space, the psychosocial arena in which multiple identities are shaped and interrelate.

Research on teacher education beliefs and identity in relation to social justice has supported the development of two important pedagogical approaches: that of inquiry and of discomfort. A further argument we make is that when the indeterminate, more fluid aspects of identity are also considered, two other pedagogical stances are suggested, those of compassion and respect; compassion because the identity work needed to negotiate changing identity is uncomfortable and challenging, and respect because identity is rooted in personal histories and given that some of the underlying fixed positions are deeply held ethical positions. By engaging with these ethical stances a deeper dialogue about social justice may be enacted.

We present the argument as a discussion of literature and theory leading to a reconceptualization of social justice teacher identity, and then the illustration of this with a discussion of empirical data. However, the origins of this paper lie in practitioner research. The starting point was a desire by one of the authors – a mathematics teacher educator – to evaluate and understand the effects of his practice in relation to social justice, a practice informed by a pedagogy of discomfort and inquiry (Boylan, 2009). The initial outcomes of the research indicated that the fixed or determinate typologies that informed both the learning experience and the research design were inadequate for analysing the positions adopted by the participants.

We continue, below, by briefly discussing social justice in education to make explicit the understanding of social justice that informs both our analysis and the experience of the participants in the study. We then consider literature that implicitly or explicitly adopts a determinate view of identity in relation to social justice. We illustrate the meaning of a pedagogy of inquiry and discomfort through discussion of the research participants' course. Following this, a socio-cultural view of identity is outlined and the concept of striated and smooth identity space is introduced. To illustrate the application of this approach, we present outcomes of a study of beginning mathematics teachers' responses to the inclusion of issues of social justice in their programme. After outlining the methodology of the study, we focus on the positioning of four of these beginning teachers. This leads to arguing that it is important to balance discomfort and inquiry with a pedagogy of compassion and respect.

2. Social justice and social justice teacher identity

'Social justice' is an ambiguous and contested term and one that is often not defined or articulated clearly, particularly in relation to discussions of social justice in education (Cochran-Smith, 2009; Gewirtz, 1998; Kapustka et al., 2009; North, 2006, 2008). When used in the context of teacher education it is particularly malleable with multiple meanings (Cochran-Smith, 2003; Kapustka et al., 2009). Moreover, much research and literature that is relevant to a broader concern with social justice focuses on or uses other descriptive terms. For example, in the US research may focus on 'teaching for diversity' or culturally responsive pedagogies, reflecting important issues in that country.

Our understanding of social justice is rooted in the importance of adopting both a distributive and relational perspective (Cochran-Smith, 2009; North, 2008) as well as recognising a participative dimension (Fraser, 2008). The distributive aspect points to the importance of equitable distribution of access to educational goods and to outcomes. Socially just relationality includes the recognition of, and respect for, social and cultural difference (Cochran-Smith, 2009), indeed other authors refer to this as recognitive justice (Mills, 2012). The participative dimension is concerned with the capacity and opportunity to actively participate in decision making (Fraser, 2008). Given that social justice (and injustice) is enacted in and through embodied relationships, attention must be given not only to the social and the macro issues – such as school organisation and societal outcomes – but also to the personal and the micro and the interplay between them (North, 2008). For beginning teachers, the focus may often be on the micro and the ways in which their own classrooms are sites in which more socially-just relationships and practices can be enacted (Boylan, 2009).

Writing in the context of the UK, Griffiths (2009) offers a philosophically rooted yet practical definition that emphasises social justice as action towards "mutual recognition and also on a right distribution of benefits and responsibilities", because recognition is related to changing identities, social justice "could never be achieved once and for all" as "any solutions are provisional" (p. 89).

Attention must be paid to 'social justice in education' – how principles are enacted in education, including the democratisation of classroom relationships – and to 'social justice from education', meaning the effects of education in the wider society such as how it can counter or ameliorate the reproduction of social and economic disadvantage and disconnection (Griffths, 1998). Priorities for socially just actions will vary according to local context; for example, attainment grouping is an important issue for social justice in mathematics education in the UK but not in other contexts where existing practices are more equitable.

We use the term 'social justice identity' to discuss teachers' relationships to social justice beliefs and principles and their interrelationship with a range of issues. An important initial distinction to make is between identification and identity. One way of understanding a teacher's relationship to social justice is as an identification – an affinity identity (Gee, 2001) – a conscious and expressed commitment to social justice in teaching. This implies alignment with a particular set of beliefs and practice and also identification with other teachers for social justice. However, here we are concerned with a much broader meaning of social justice teacher identity, one that supposes all teachers and beginning teachers have a relationship to issues of social justice. This being so even if, for example, the main features of this are lack of awareness, a refusal to engage with, or dis-identification from, issues of social justice.

3. Beginning teachers, social justice and determinate identity

Research on social justice in teacher education has often focused on beginning teachers who have one of two polarised positions: committed or resistant. Some enter teacher education with, or subsequently develop, a strong commitment to social justice. We might describe these as social justice teachers whose identity

involves an advocated set of beliefs, dispositions and knowledge. Some of these are not exclusive to teaching for social justice for example, openness to change (Garmon, 2004) and self-awareness and self-reflexivity (Britzman, 2001; Garmon, 2004; Gay & Kirkland, 2003; Martin & Van Gunten, 2002), or a disposition to inquiry as means to development of practice and as a pedagogical tool (Agarwal, Epstein, Oppenheim, Oyler, & Sonu, 2010; Cochran-Smith, 2003; Ladson-Billings, 1999; Nieto, 2000; Sleeter, Torres, & Laughlin, 2004). In themselves these do not constitute a disposition towards social justice (Mills & Ballantyne, 2010). When these are connected to a criticality in relation to school and its social role (Ladson-Billings, 1999) and a willingness to engage with critical theory (Beyer, 2001) the links to social justice become evident. Some have summarised this range of features in terms of a form of critical epistemology (Chubbock, 2010; Povey, 1997; Sleeter et al., 2004).

As well as intellectual qualities and extended specific pedagogical knowledge (Agarwal et al., 2010; Cochran-Smith, 2003; Garmon, 2004), teaching for social justice variously intersects, interrelates or is intertwined with emotionality (Boylan, 2009). In part, this arises from making a commitment to enacting different social relationships within the classroom and beyond (Boylan, 2009; Chubbuck & Zembylas, 2008; Nieto, 2000) and so informing practice with a concern for student voice and democratic classroom practice (Agarwal et al., 2010). Such practices require an 'informed empathy' (Ladson-Billings, 1999) for those who experience injustice as well as the courage to challenge injustice (Nieto, 2000).

A second significant group are those that are resistant to social justice agendas (Carson, 2005; Carson & Johnston, 2001; de Freitas, 2008; Mueller & O'Connor, 2007). The form of resistance can be more or less active. Carson and Johnston (2001) describe a defensive hostility to consideration of issues of social justice on the part of some Canadian beginning teachers. However, resistance can also manifest as a lack of depth of engagement. For example, entrenched beliefs about cultural groups and dominant belief systems such as individualism have been noted in the US with some beginning teachers 'silencing' material or voices that contradict their assumptions (Castro, 2010; Mueller & O'Connor, 2007).

Thus, a polarity is constructed between the ideal of the teacher for social justice and the resistant or disengaged teacher. This binary model is a key feature of a determinate view of social justice identity and one that acts as a reference point for developing more detailed accounts. Typologies of teacher beliefs and developmental stage models have been used to describe the positions of teachers that do not accord with either of these polarities. Chizhik and Chizhik (2002) take up Tatum's (1992) application of racial identity development theory to analyse teacher attitudes to social justice that traces a path from lack of perception, awareness or knowledge to a commitment to social action to address racism and its roots. A different approach to developing typologies is offered by Sleeter and Grant (1994). They develop descriptions of five different responses of teachers to issues of cultural diversity. Their typology is structured around the polarities of 'Business as Usual', that corresponds to a resistant or non-engaged position, and a 'Multicultural and Social Re-constructionist' teacher committed to social justice. More recently, based on ethnography in an Australian context, Mills and Ballantyne (2010) propose a dispositional typology that moves from self-awareness/self reflectiveness to openness to a commitment to social justice.

These different typologies imply relatively linear models of development in which teachers may progress towards social justice positions. Linearity implies that these identity positions are relatively stable, ordered and sequential. Implicit in this way of understanding teacher identity is to ascribe a level of homogeneity or uniformity to the way beliefs about different social justice issues or about pedagogy and schooling interrelate.

A further significant body of research involves surveys of attitudes and beliefs and the development of scales to measure constructs of social justice beliefs or of related attitudes for example about diversity (examples are Enterline, Cochran-Smith, Ludlow, & Mitescu, 2008; Ludlow, Enterline, & Cochran-Smith, 2008; Pohan & Aguilar, 2001). Such scales posit complex constructs for example 'learning to teach for social justice' (Enterline et al., 2008; Ludlow et al., 2008). To create statistical measures, researchers make choices about the way scale items are formulated and which scale items are included. They aim to develop "an ordered construct comprised of increasingly more complex and in some cases, controversial, beliefs and ideas about teaching, the purposes of schooling, and the meaning of social justice" (Ludlow et al., 2008, p. 278), this describes a linear one-dimensional continuum. Notwithstanding their usefulness for teacher educators and researchers, such scales offer a simplified model of teacher attitudes and beliefs in relation to social justice.

4. Teacher education pedagogies for social justice

As well as the need to develop theoretical frameworks, there is a need for pedagogies that develop teachers for social justice (Sleeter, 2001). Two aspects of practice have been emphasised in relation to this. The first is a pedagogy of inquiry into personal positionality and into the social and economic roots of injustice (Frederick, Cave, & Perencevich, 2010; de Freitas, 2008; Ladson-Billings, 1999; Lynn & Smith-Maddox, 2007; Mueller & O'Connor, 2007; Sleeter et al., 2004). The second can be summarised as a pedagogy of discomfort (Boler, 1999; Boler & Zembylas, 2003). Different degrees of discomfort are possible, ranging from unsettling taken for granted assumptions of those from privileged backgrounds to more emotionally challenging provocations in relation to sources and reproduction of injustice (Boylan, 2009; de Freitas & McAuley, 2008; Tatum, 1992). These two approaches are not mutually exclusive; indeed, one way for discomfort to be generated is through inquiry and once beliefs are discomforted, inquiry may be fostered (Mezirow, 2000).

We illustrate a pedagogy of inquiry and discomfort by introducing the context for the study. Participants took a one semester module 'The Pupil Experience of Learning Mathematics' (PELM) as part of a Subject Knowledge Enhancement (SKE) course, at a metropolitan university in England, that addressed shortages in qualified mathematics teachers. Prior to entering one year postgraduate professional training to become high school teachers, the SKE enhanced the mathematics knowledge of non-mathematics graduates.

The meaning of what constitutes teaching for social justice is contested in mathematics education. The approach adopted in the design of PELM was informed by the stance on social justice outlined above in the specific context of English mathematics education. The emphasis given to particular issues differed from that found in discussion of mathematics education for social justice elsewhere. For example, in the US two key foci are preparing and supporting teachers to teach student populations that are culturally diverse (Martin, 2012) and the inclusion in the curricula of mathematical content or problems related to issues of social justice (Gutstein, 2006). Whilst these issues were addressed in PELM, the main social justice themes highlighted were the importance of the development of criticality and engagement with counter-hegemonic pedagogies and classroom relationships (Boylan, 2009; Nolan, 2009) and the issue of grouping pupils in mathematics by attainment. This is known as setting in England.

Module participants were encouraged to inquire into the effects of dominant practices that lead to the alienated and alienating relationships to mathematics that are experienced by many learners, particularly those who are not economically or culturally privileged (Boaler, 2006; Boaler, William & Brown, 2000; Boylan & Povey, 2012; de Freitas, 2008). Students explored the role of mathematics as a key gatekeeper to educational and economic advancement and its role in the reproduction of inequity and social stratification by race and class (Gutiérrez, 2008).

The participants experienced a pedagogy of discomfort that aimed to disrupt taken for granted assumptions and a pedagogy of inquiry focused on how the experience of learning mathematics is constructed for individuals and social and cultural groups. A variety of experiential learning techniques were employed for this purpose (Boylan, 2009). Other activities included autobiographical reflection on mathematical experience, critical examination of historical and current influences on policy and practice, a consideration of different social justice orientated pedagogies and comparison of international practices. Issues of social justice were explicitly addressed in specific teaching sessions. Module participants had the option to focus their assessed work on issues of social justice; this was encouraged but not required.

5. Rethinking teacher identity and social justice

We now consider two theoretical perspectives that embrace multiplicity and indeterminacy in relation to identity and have the potential to address the gap, noted in the introduction, in accounts of teacher education and social justice. These are cultural historical accounts of identity that emphasise engagement in social practice and positioning theory that analyses discursive interaction.

Holland, Lachicotte, Skinner, and Cain (1998) propose that actors live in and through figured worlds and offer this as the basis for a cultural historical theory of identity and agency. A figured world is a "socially and culturally constructed realm of interpretation in which particular characters and actors are recognized, significance is assigned to certain acts, and particular outcomes are valued over others" (p. 52). They emphasise the importance of self-symbolization as a source of agency. By 'figuring' ourselves, our life narratives and self-concepts become means to develop new identities. Ma and Singer-Gabella (2011) use figured worlds to analyse beginning mathematics teachers negotiation of new identities in the context of reform mathematics. Similarly, Horn, Nolen, Ward, and Campbell (2008) employ figured worlds to examine the identity construction of both mathematics and social studies beginning teachers as they move between the worlds of school and their teacher education programme.

For Holland et al. (1998) agency and identity work occur through a process of self-authoring. Bakhtin's notion of voice offers insights into the relationship between socially sanctioned discourses found in figured worlds and the appropriation of others' voices (Bakhtin, 1981). This occurs through a dialogical process where stances also are taken in relation to these voices – 'the responsibility of answering' (Holland et al. 1998). Some voices come to be one's own and so space is opened for agency.

Holland et al. (1998) trace how negotiation of identity in figured worlds occurs through social practice. Important here is how "the subject invests in discursively afforded positions" (p. 33). Similarly, Farnsworth (2010) links analysis of discourse (Gee, 2001) with a cultural historical approach to identity (Bakhtin, 1981) to identify how such discourses appear as different voices in beginning teachers' accounts of their experiences in relation to social justice.

We propose that positioning theory (Davies & Harré, 1990; Harré & van Langenhove, 1999) offers a means to trace and map processes of identity construction. Positioning can be understood as the discursive construction of personal stories that make a person's actions intelligible and relatively determinate as social acts. Participants in conversations and other discourses position themselves, or attempt to do so, in relation to each other and to wider social roles and identities that, in Holland et al.'s (1998) framework, can be understood as constituting and being constituted by figured worlds. This supports a view of personhood that consists of an unfolding of multiple storylines through discourse, focussing on the process of identity construction as fluid, provisional, responsive and relational. Inherent in the process of being positioned or positioning oneself is a moral dimension (van Langenhove & Harré, 1999) which is necessarily implicated in thinking about social justice. Sonu, Oppenheim, Epstein, and Agarwal (2012) apply positioning theory in a qualitative study of elementary school teachers in the US to identify fluid categories in which teachers' relationships to teaching for social justice is rooted in their personal histories which provide resources for and also limitations to the development of their practice.

Above we drew attention to constructions of determinate social justice teacher identity based on a polarity of commitment and resistance that are end points of a linear and uniform continuum formed by striated discrete positions. Deleuze and Guattari (1987) contrast striated to smooth space. They use these terms in relation to the social spaces of organisations, groupings and other social phenomena. Here we extend the concept in relation to mapping identity spaces.

Images for smooth space are fluid – vortices and spirals rather than straight lines – in which encounters with obstacles or new phenomena lead to shifting movements (Hodgson & Standish, 2006). Positions shift and change in unpredictable ways. Where "striated space is sedentary space, space that is coded, defined, bounded and limited" (St Pierre, 1997, p. 369), smooth space is unbounded, unpredictable and not locked into binding patterns: "its orientations, landmarks, and linkages are in continuous variation" (Deleuze & Guattari, 1987, p. 493). Key images that Deleuze and Guattari use to contrast striated and smooth space are the games of Chess and Go. In chess pieces have particular properties which are invariant of position; the quality of space in relation to these is fixed. In the game of Go the positioning of pieces themselves territorialize (and de-territorialize) space as pieces move, so the space of the game shifts and changes. Striation and smoothness are not mutually exclusive qualities, indeed they are both present and interdependent (Deleuze & Guattari, 1987).

Important in the notion of figured worlds is that identity construction takes place through and is created by meaningful practices and discourses, including positional markers. Holland et al. (1998) emphasise ongoing relations of power in describing such markers. From the perspective of positioning theory, the ongoing, moment to moment positioning constitutes an act and a story line. In the context of this paper, an example would be positioning oneself as committed to social justice or as a proponent of all attainment teaching. Social space is marked or striated by these reference points or more fixed positions. Some of these may be indigenous to particular figured worlds and others are marks of other figured worlds or more general socio-cultural patterns. The way these are etched into social space accords with Deleuze and Guattari's image of striation.

Identity, then, is a continual process of becoming as a movement in and through the spaces that are between fixed positions rather than the connection of points (Youngblood Jackson, 2010). The concept of striated and smooth identity space describes the landscape in which determinate and indeterminate identity are shaped. Space here is a psychosocial space in which different identities and identity commitments form and are in relationship to each other. Striated identity space is the ground where identity is performed in

relationship to these markings. Identity is not fixed, although relatively more stable. Change tends to be linear and relatively predictable. Smooth identity space allows for movement that is more unpredictable and where there is a greater possibility of combination and recombination of different positions.

6. The study

6.1. Methods

We illustrate our perspective with the examples of four beginning teachers: James, Jas, Paul, and Julie. Above we provided a description of the context; here we describe how the four narratives were generated. Institutional ethics processes were followed and consent obtained from everyone taking the module for analysis of material generated during course activities. Specific consent was also obtained the additional research activities. Pseudonyms are used in keeping with an agreement to anonymity. The research team consisted of the module tutor and a researcher who was not a teacher educator.

Eighteen out of twenty-four members of the course (comprising of 18 White British, 4 British Asian, 1 White European and 1 Afro-Caribbean students) completed an open survey asking for responses to statements about a broad range of social justice issues related to mathematics education. These were about setting (tracking), gender, social justice enabling pedagogies, citizenship, classroom democracy, educational outcomes and social equity. The statements were designed to be ambiguous and draw out potentially complex responses, for example, 'teachers should treat girls and boys the same in class'.

Interviews, lasting 50–70 min, took place after completion of the module. These were conducted by the non-teaching researcher and transcribed externally. A total of 10 participants (8 white British, 1 white European, 1 British-Asian, 4 female, 6 male) were chosen to be interviewed as representative of different relationships to social justice as indicated by the survey analysis. Questions related to survey topics and about issues of racism and cultural difference in the classroom.

A further interview task involved a range of prompts that drew on discourses found in relevant literature. Participants were asked to expand on and explain their position on the themes outlined above. The prompts were: 'caring for pupils well being', 'promoting good relationships', 'improving academic outcomes', 'preparing democratic citizens', 'a sense of right and wrong', 'equality of opportunity', 'addressing social disadvantage', 'doing what is practical in today's schools', 'changing society', 'balancing the needs of different pupils', 'balancing the needs of teachers and pupils', and 'the evidence on the issue is convincing'.

6.2. Analysis

Transcripts were analysed thematically by developing in vivo and other codes, identifying repetitions and through comparison across transcripts (Ryan & Bernard, 2003). This was done by both researchers independently with regular meetings to discuss and agree codes and coding strategies. Nvivo 8 software was used to aid transparency about the process of analysis (see Bringer, Johnston, & Brackenridge, 2004) which followed a complex and multilayered pattern with three distinct yet related approaches that informed each other through constant comparison. The first of these involved generating descriptive deductive codes related to themes derived from literature. These tended to reflect a determinate view of identity. For example, in relation to 'setting/tracking' three positions were coded – being in favour, against or a mixed view. A second form of analysis was to code inductively to allow for emergent themes and interpretations. For example, reasons for views on setting were identified, both in terms of contextual factors (for example, 'teachers do not support it') or moral and ethical stances (for example, 'care' and 'equity').

The interplay between the deductive and inductive codes allowed for richer more comprehensive and more nuanced interpretations (Fereday & Muir-Cochrane, 2006). This led us to identify the need to both analyse and account for the complexity and dynamic nature of positions taken by interviewees. We developed a third approach – mapping striated and smooth identity spaces. Here, we were influenced by positioning theory (Harré & van Langenhove, 1999), which proposes an analytical triad of position, act and storyline. We noted discursive acts in which storylines were developed that revealed how participants figured their positions in the world of mathematics education and social justice. Both inductive thematic coding and discursive coding of positioning allowed dynamic aspects of identity formation to emerge. We identified those positions or discursive constructions that acted as relatively fixed reference points – the striations – and those where more fluidity and dynamic tensions were apparent – the smoothing of identity space.

Positioning theory developed as a means of analysing the social construction of personhood and relationship by considering everyday discourse. In a research interview there is an overarching 'meta-positioning' of the participant as an interviewee. This can be conceptualised as *forced self-positioning* (van Langenhove & Harré, 1999). This draws attention to the obvious point that what we access in the interview is the respondent's views in that situation responding to the interviewer. The process of analysis and reporting can also be understood as one in which the participants are positioned and there is a sense in which the experience of the module as a whole and can be understood as a process of forced self-positioning. Thus the analysis we present cannot be taken as a naturalistic or generalisable account of beginning mathematics teachers' relationship to social justice.

Consistent with the theoretical positions taken in the paper, our aim was not reliability as much as credibility and authenticity (Guba & Lincoln, 1994). We sought to assess the extent to which our analysis described the beginning teachers' current stances in relation to social justice. We prepared a narrative account, including quotations, of each participant's positions. When these were shared, participants generally affirmed their agreement with our analysis, choosing in some cases to clarify or amend quoted text or explain how their stance had subsequently developed.

In the space available here, we present examples of four students – James, Jas, Paul and Julie. We select these four because they indicate how emphasizing only a determinate view of social justice teacher identity might obscure the complexity of beginning teachers' positions.

7. Examples of beginning teachers' positioning in relation to social justice

7.1. James

James described his background as relatively privileged and evidenced self-awareness and reflexivity (Britzman, 2001; Garmon, 2004; Gay & Kirkland, 2003; Martin & Van Gunten, 2002). His motivation to teach was informed by a concern with wider social issues:

> I think that education is something that can solve a lot of wrongs that exist within society and I think it's a real solution to a lot of problems, not necessarily financial, but just by people being more informed.

He offers this response to whether pupils should be treated the same:

> I think that [my views as a maths teacher] go hand in hand with what I said was important to me, which is equality of opportunity. I'm very much of the view that people should have the chance to do whatever they want to do. You know, it's tricky because I get torn in two ways. I think that they still need to have the skill set to do it, but that it shouldn't be related to their gender or their race or their class. If they're good enough, they should be able to do whatever they want to do. When I spoke about engaging the pupils I didn't say I want to engage the girls and I want to engage the boys and I want to engage the black children. A child is a pupil as opposed to anything else.

James develops a storyline of being a teacher who is interested in equality of opportunity and freedom from restrictions caused by social inequities. However, he also echoes dominant discourses of ability, asserts a moral value to students who are "good enough" to deserve access to a freer, more student centred and democratic curriculum, where "they can do whatever they want". His commitment to enact different social relationships and for student voice (Argawal et al., 2010; Boylan, 2009; Chubbuck & Zembylas, 2008; Nieto, 2000) is limited to some students and not all.

James reflected on ways mathematics teaching can address issues of cultural representations of mathematics as a western product.

> All the Greek and the Western scholars who we think discovered things when in reality, at the same time or even earlier, people in China and India were making massive advances. I think there are a lot of mathematical problems or discoveries, I suppose, that were done well before the West discovered them. I mean we discovered them independently, but yet we call them by the Western name. I think if we can give a little bit of context to the maths and show that it's universal, that it's used throughout the world.

James recognises the importance of challenging the view of mathematics as a western cultural product and the importance of valuing other cultures' contributions. However, module material has not been integrated that challenged the belief that much mathematics was 'discovered independently' by European mathematicians but was appropriated. The notion of the universality of mathematics means there are limitations to the extent to which James recognises the social and cultural origins of mathematics, thus the critical epistemology recognised as a characteristic of teachers for social justice (Chubbock, 2010; Povey, 1997; Sleeter et al., 2004) is not yet apparent. Similarly, elsewhere in the interview, it was clear that James recognises that the needs of the "girls", "boys" and "black children" are not necessarily the same nor should be his response to them. Yet he also then implicitly erases these differences:

> When I spoke about engaging the pupils, I didn't say I want to engage the girls and I want to engage the boys and I want to engage the white children and the black children. A child is a pupil as opposed to anything else.

7.2. Jas

Jas is a British Asian who self-identified as dyslexic and who had been placed in what he describes as a bottom set (track) for mathematics in school. Although he was eventually reassigned to another class he found that:

> I was behind the pack because I had missed out … I didn't know how to do factorising, I never learned it … so I lived with a grade B and [grade] A was factorising and doing these trapezium calculations and 3D shapes. I didn't know that stuff.
>
> I don't agree with that [setting] because every student can improve and I'm thinking I'm a prime example of that … if you set someone by what they've done before you can limit them from achieving.

Based on his experience, Jas has a strong commitment to all-attainment teaching, a key marker of a commitment to social justice in mathematics education (Boaler, 2006; Boylan & Povey, 2012). But Jas does not believe the mathematics curriculum should aim to enable pupils to critique social inequality and government policies. He suggests that this is "completely pointless" and inapplicable to mathematics. Teachers should try to make sure pupils are "suitable" for the "outside world" which is defined in terms of employability.

> They teach you just to pass the exam so, you know, you don't get a U [unclassified] and I guess for some cases it's good because you don't get a U in maths and it doesn't look bad and at least you're employable.

Jas feels that teachers should treat girls and boys identically, as to do otherwise would constitute a form of discrimination. Similarly, Jas does not recognise that addressing issues of racism or cultural difference is his responsibility:

> I don't know as in I haven't seen anyone like who has done any of this yet as in discriminated against, you know, your culture, ethnicity or race.

For Jas the teacher's responsibility is bounded within the classroom and the responsibility is to individual students. Jas' own cultural identity and experience appears to be secondary here and he has yet to develop the type of awareness pointed to by Chizhik and Chizhik (2002) in which cultural identity is located in broader political understandings.

7.3. Paul

Paul further illustrates the complexity of developing identity positions:

> I think probably before I came on the course I would have said that the fundamental purpose of maths education is to get students the grades to open the doors for them in future in terms of university opportunities and careers. And if they pick up skills relating to their participation in society and their ability to critique and analyse kind of social structures, I would have said that's a good thing and a bonus.
>
> But I think I'm more inclined to attach more importance to achieving a kind of mathematical literacy … and understanding structural aspects of how society works.
>
> Because I think that when we're using mathematics to critique power structures in society, I think that's a very empowering experience for pupils which puts mathematics in its proper context which enables them to engage with it properly. It's more stimulating, more interesting, more engaging for the pupils, which inevitably means that their eventual grades and their grasp of the mathematics behind the issues will improve their attainment.

Although his statements echo the writing of the radical and critical mathematics education tradition (for example, Gutstein, 2006), he describes himself as moderately conservative and sees engagement with social issues in the curriculum as a route primarily to raising attainment.

His discussion of teaching approaches positions the teacher (and himself) as someone who in teaching the whole class relates to individual needs. Similar to Jas, he believes his moral responsibility is to individuals. However, there is also an apparent tension between his focus on the individual and we might assume individual rights with a more collectivist response to the issue of potentially racist teachers. Here, he referred to the British National Party, a UK racist organisation which promotes a policy of repatriation of immigrants, and states that they should not be allowed to be teachers – a position which might be considered to be relatively progressive.

However, Paul holds firm to his belief that grouping by ability is the best form of organisation of learning:

> My conviction is that setting is really important to achieving the same opportunity for everybody so that everybody has the same input from the teacher, which will enable them to realise their own potential … I think that's quite an important way of eroding social injustice within the school environment and beyond really.

He justifies his position in terms of equity and social justice, thus developing a position that he had not encountered during the module – ability grouping as socially just – and so one that represents an improvisation and finding his own voice (Holland et al. 1998).

7.4. Julie

Julie, a mature entrant to teaching, appears to be an advocate of the status quo, a supporter of "business as usual" (Sleeter & Grant, 1994). Her advocated teaching style is what she describes as "old school", which she experienced as bringing her success when she was at school:

> [Speaking as a teacher] "I will stand at the front". You will watch. We'll dictate. Rote learning. Literally "You will learn from these textbooks and you will do it again and again and again until you understand what is going on".

Her view on pedagogy now appears more nuanced since her successful experience of group work on the Subject Knowledge Enhancement course which she describes in positive terms.

> I quite like the group work because I like being able to help the others that aren't grasping it as easy as I am.

Here too, we hear Julie's construction of herself as the more knowledgeable expert found in her description of the ideal teacher. In Julie's figured world knowledge is transmitted and grasped, rather than constructed. She does not recognise cultural differences as important in relation to teacher choices in most school situations. She describes her commitment to equity in the following way: "I wouldn't treat anybody any differently whether they're black, white, foreign, or whatever". A story line that Julie develops for herself is 'being helpful to others'. This is a narrative that informs her other views on teaching.

Even though she had a negative experience of being placed in a low set, she rejects all-attainment teaching:

> I can't see how you can put kids that can't do decimals in with kids of the same year that are doing circle theorems and expect every child to achieve their potential.

Should we dismiss Julie as a 'business as usual' teacher (Sleeter & Grant, 1994)? Closer examination of her beliefs shows areas of tension and inconsistency. For example, when asked to choose a good lesson, she picks one she had observed that was in an all attainment context and with an open pedagogy, this in spite of her "old school" views on teaching and commitment to setting:

> It wasn't like a set question on the board that those who were very good at it could say "Miss I've got it already" or those that were really not so good at algebra could actually sit back and say "mmm, I'm just going to let someone else do it." They all had to communicate because they all had these clues in their hands, but without one clue they wouldn't get the right answer.

Further, Julie is also the strongest supporter of all the beginning teachers interviewed of some form of classroom democracy. She believes that school students should have a significant role in deciding what happens in the classroom and links this to the need to address different learners' needs:

> I think a teacher should communicate with the students to get the most out of them and like every student is different – the way they learn is different, what they can learn is different. The speed they learn is different … So I think students and teachers should be able to determine the content and ways that they learn it.

Julie places the issue of 'who decides' as her priority and so more important than an emphasis on attainment outcomes. Further, her motivation for both prioritising classroom democracy and attainment outcomes comes from her belief in the importance of "caring for pupils". This echoes feminist and other accounts of social justice in education that emphasis the interrelationship of teaching for social justice and emotionality (Boylan, 2009) and enacting different classroom relationships (Boylan, 2009; Chubbuck & Zembylas, 2008; Nieto, 2000). In spite of a concern for raising attainment through 'old school' methods, she does not believe that this should lead to pressurising pupils:

> It's no good trying to push a pupil and make them all stressed out because that's only going to de-motivate them, well they could get depressed, couldn't they and self-harm.

In Julie's beliefs there appear to be two figured worlds of what mathematics teaching should be. In one she constructs an identity of herself as an individual teacher and expert relating to individual learners. In the other she emphasises the importance of communication and dialogue between the teacher and class and students with each other. A unifying narrative is the teacher as helper.

Julie has experienced being placed in a lower set when at school, which she describes as a 'remedial group'. Her and her families' response to this was to move school. It appears that her focus on listening to school students and involving them in choices about their learning may be linked to this experience:

> The setting issue at the beginning of secondary school – that really, really got me down on a low and that could have very easily turned into "I can't do maths. I can't. I don't understand maths. What am I doing here?" But it was just perseverance. When you actually look back at your education it is quite scary how easy things can go wrong and how much that would affect a child.

At the same time she draws on her experience to argue that children with a wide range of existing knowledge should not be taught together.

8. Smoothness, striation and identity

A feature of smooth identity space is the emergence of unpredictable juxtapositions that can appear to be contradictory. Ideas about social justice and related discourses did not coalesce in particular positions as might be expected from a typological or linear model. Rather we see a range of unpredictable, although related, positionings as they negotiate their relationship to teaching and social justice. Like the Go pieces in Deleuze and Guattari's account of smooth space they take up positions, as if raising flags in the space of social justice and identity. James adopts a position that emphasises recognition of the contribution of diverse cultures to mathematics. Jas emphasises the importance of equality of opportunity. Paul takes a clear position on the need to address racism including teachers' racism. He also appropriates ideas from social justice traditions. Julie takes up the position of democratic and inclusive classroom practices. With each of them we see a relationship to a particular standpoint in social justice pedagogy, their identities are marked by striations of the ideas and views they have encountered on the module.

They are also ready to relinquish such space as they shift their attention to different concerns. The image of smoothness refers to the movement between positions, but these landmarks of smooth space need not, themselves, be smooth and the juxtaposition of different positions paradoxically suggests discontinuity. This gives rise at times to what appear to be contradictions in the beginning teachers' narratives.

For example, Paul develops a storyline for others and self which places him as an actor for social justice whilst maintaining and defending core beliefs connected to traditional pedagogy. Farnsworth (2010) identifies how beginning teachers' positioning in relation to social justice may lead to the appearance of contradictory 'voices'. Again these beliefs appear in his biographical narrative in which he relates his own success in learning to encountering "charismatic and engaging" teachers who taught in "traditional" ways. Similarly, in relation to setting, Julie tries to find her own voice and answers in relation to these issues as she enacts the 'responsibility of answering' (Holland et al., 1998) both the course experience and the figured world of teaching.

However, the positioning that takes place in the arena of striated and smooth identity spaces consists of identifiable movements. Many of the interviewees adopted voices (Farnsworth, 2010) of those in the mathematics education community they had encountered either directly or through literature. Appropriation can be selective and filtered through the lens of positionality and personal narrative as in James' discussion of the development of mathematics. The participants develop storylines as they position themselves (Harré & van Langenhove, 1999; Sonu et al. 2012). As well as the striations of social justice positions, these storylines are marked by the striations of the social and cultural more generally, such as the markers of socio-economic background. However, there is not a simple causal link between biography and the figured world in relation to attainment grouping. Jas and Julie take different positions in spite of having similar experiences.

The process of adaptation or translation can involve evoking principles of social justice to develop positions that, from the perspective of some approaches to social justice mathematics education, are contrary to it. For example, Paul translates and adapts Frierian concerns in critical mathematics education for the inclusion of social issues as a mean of addressing injustice (following Gutstein, 2006). This is then combined with a commitment to the type of banking approach to learning – teacher as providers of 'inputs' – that is contradictory to the emancipatory approaches suggested by critical educators.

Some of the pedagogical approaches used on the module challenged the beginning teachers to position themselves in relation to polarities. Sometimes this was by literally asking them to physically place themselves on a continuum in relation to issues connected to social justice. This required forced self-positioning (van Langenhove & Harré, 1999) as did the research process which was initiated from a perspective of a more determinate and linear view of social justice identity. Thus the smoothing of identity appears between the striations of both the pedagogical experience and aspects of the research process imposed on our participants.

One feature of typologies or linear scales is that items or issues may be excluded if responses do not easily fit with the assumed linear nature of an increasingly sophisticated understanding of social justice and a greater commitment to its principles and practices. Ambiguity and complexity are avoided. For example, statements such as "teachers should be colour-blind when it comes to working with students in the classroom" may be excluded because they can lead to different views as to what response is more in keeping with principles of social justice (Ludlow et al., 2008).

This does not mean that the models and research tools considered in our discussion of determinate identity are of no value either in relation to enquiry or pedagogy. A different way of understanding a typology and striated positions is that they are places that subjects have a relationship to rather than exist within. In this sense, they are akin to landscape features that allow for orientation in the landscape of teaching for social justice. From this perspective, the beginning teachers show identities in formation. They form positions that allow them to navigate what is a new world (Boylan, 2009; Carson & Johnston, 2001; de Freitas, 2008; Sonu et al., 2012). Similarly, determinate mapping of identity can act as a heuristic that methodologically supports the exploration of relationships to social justice.

There is a need for methodologies that take into account the ways in which social justice teacher identities develop in both linear and complex ways and the ambiguity this entails. In this paper, we have referred to studies that do this by employing narrative and ethnographic methods (see Chubbuck & Zembylas, 2008; Sonu et al., 2012; Youngblood Jackson, 2010). Further research needs to address the important issue of the gap between espoused ideals and practice, whether those ideals are one that inform teachers' motivations to teach or developed in response to the 'forced self-positioning' of participating in a module such as PELM or indeed in participating in survey or interview research.

9. Teacher education pedagogy for social justice revisited

In considering the pedagogical implications of this broader understanding of identity, the similarities in the storylines that the beginning teachers develop about themselves are important. These storylines are related to underlying philosophical principles such as distributive and relational justice (Cochran-Smith, 2009; North, 2008): for Jas a key issue is the inequity of setting practices; for James challenging the mono-cultural mathematics curriculum; Paul wishes to engage learners and equip them for citizenship; and Julie is concerned with the nature of classroom relationships. What is shared is an underlying ethics of care and respect (Neyland, 2004). Each of them evidences the informed empathy (Ladson-Billings, 1999) that is a characteristic of teachers for social justice. It may be that teacher educators need to pay more attention to these underlying ethical concerns and less to the formal and visible

reference points of positions taken in relation to social justice issues.

This implies that teacher educators seeking to engage beginning teachers with issues of social justice should make such philosophical concerns an explicit aspect of teacher education curricula. Further, the discourses used in education can also productively be the subject for critical reflection by beginning teachers in relation to issues of social justice (Marsh, 2002; de Freitas, 2008).

The four teachers were thinking deeply about these issues and their reflections were rooted in their personal histories. So, for example, the issue of being placed in sets was not only an issue of educational policy but was part of the lived biographies of these teachers. For two of these, Jas and Julie, these painful experiences had been important in shaping their identities both as teachers and more generally. For James the module entailed becoming more aware of his relatively privileged schooling. Paul tried to find a position that could embrace recognition of the importance of the social dimensions of mathematics education with a pedagogy that had worked for him when he was at school. Inquiring into issues of social justice and so struggling with the gap between espoused and enacted beliefs can be discomforting for beginning teachers. This calls for a pedagogy of compassion (Carson & Johnston, 2001), not least for the challenge of the identity work that is entailed. 'Compassion' here signifies empathy and an orientation of kindness rather than judgement. A pedagogy of compassion entails informing teacher education for social justice with the same principles and ethics of care and informed empathy that we would want teachers to enact in their classrooms. One step towards such a pedagogy, would be give space to consider the ethically ambivalent (Bauman, 1993) nature of pedagogical actions.

These four beginning teachers took positions on social justice issues that are not arbitrary or taken without reflection, even if they apparently do not accord with principles of social justice as understood from typological positions. Further, there are multiple possible stances that are possible in teaching for social justice (Sonu et al., 2012). There is, then, also a for a pedagogy of respect for beginning teachers' underlying philosophical and ethical positions, their personal histories and for their developing understandings of social justice.

10. Conclusion

In this paper we have offered an account of the relationship to social justice of a group of beginning teachers in England. This adds to those developed in other contexts. Beyond adding an empirical account, we have argued that it is important to consider identity in teacher education for social justice. Social justice teacher identity can be understood as both determinate and indeterminate. The relationship between these aspects of identity and the movement between them can be conceptualised through the notion of striated and smooth identity space. We are not proposing that the complements in each pair of concepts are mutually exclusive or necessarily contradictory. Rather, all are useful and important ways to understand teachers' relationships to social justice and to inform practice. Typologies and scales of social justice and related identities provide fixed reference points that allow teachers' positions to be analysed and compared. Paying attention to the dynamic aspects of identity construction allows for investigation of how actors figure and position themselves and the world in relation to issues of social justice. Understanding social justice teacher identity as being both determinate and indeterminate offers insights into how beginning teachers navigate and position themselves in relation to the ambiguous landscapes of teaching for social justice and challenges teacher educators to broaden teacher education pedagogy to augment pedagogies of discomfort and enquiry with compassion and respect.

Acknowledgements

We would like to thank Hilary Povey and Andy Hobson for critical discussion and comment about the research reported here and on the paper, as well as the reviewers of this and earlier versions, and the research participants.

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