

# Student teachers' positionalities as knowers in school subject departments

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Student teachers in England, mainly on one-year courses, spend the majority of their time in schools. Secondary schools are primarily organised around subject departments, and these sub-groups within schools have been shown to be significant for student outcomes and teachers' experiences. However, research on school subject departments themselves is relatively limited, and developing better understandings of school subject departments is important for Initial Teacher Education (ITE) and educational research more broadly. This paper draws on an ethnographic study of three secondary school geography departments to analyse student teachers' positionalities as knowers within departments. Opportunities for professional discussions within departments are limited, and are often dominated by immediate practical concerns. A social-realist concept of knowledge–knower structures is used to explore the kinds of knowers accepted as legitimate in these departments. A dichotomous view of teachers as knowers was found, being positioned as knowing or not-knowing particular areas of subject knowledge. This binary view is argued to be related to the language of the Teachers' Standards in England. Suggestions are made for improving student teachers' positions as knowers within departments by planning opportunities to contribute their expertise, and for developing more expansive discourses around subject knowledge to enable all to maximise opportunities to learn from the rich mines of expertise held across ITE partnerships.

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## Introduction

Initial Teacher Education (ITE) in England currently involves, across many partnerships and amid 'unresolved debates' (Furlong, 2013, p. 2), the close working of schools and universities. At least 120 days are spent in school during the training year (DfE, 2015): a common feature of partnership schemes since Circular 9/92 (DfE, 1992). In England, from 2010, coalition government policy drove an agenda to make ITE not only more school-based but also school-led (Menter, 2014). This policy drift had implications for the composition of expert panels (for example, the review of ITE in England was led by a primary school head teacher), the creation and expansion of School Direct ITE and restrictions on ITE places allocated to universities. Studying school-based experiences of student teachers is, therefore, particularly timely. In addition to policy-based calls for extended practical experience during ITE, a significant emphasis on "practical" or "field" experiences in the process of learning to teach... has also been advocated by many within the university sector in light of their

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understandings of the complexity of teaching and of the nature of professional learning' (Burn & Mutton, 2015, p. 217). For example, the Oxford Internship Scheme (Benton, 1990) has, since its inception in the mid-1980s, emphasised the importance of partnership between the university and schools with each bringing significant, interrelated contributions. The internship model is based on the belief that 'embedded in the day-to-day work of virtually every school in the country there is a rich mine of expertise which should be drawn upon in the professional education of each new generation of teachers' (Hagger *et al.*, 1996, p. 8). Locating and accessing these rich mines of departmental expertise demands more than simply being present in schools, partly because of the complexity of teachers' professional knowledge and practice (Burn, 2007; Winch *et al.*, 2015), and partly because of the nature of school subject departments. Departments are the primary unit of organisation within secondary schools (Ball & Lacey, 1984), and research suggests that they are more significant than the school for school effectiveness and student outcomes (Sammons *et al.*, 1997; Harris, 2001; Nye *et al.*, 2004; Ko *et al.*, 2015; Strand, 2016), interpretation and implementation of policy (Ball & Bowe, 1992), teacher learning and development (Visscher & Witziers, 2004; Burn *et al.*, 2007; Childs *et al.*, 2013). In various senses, 'department cultures tend to be more influential than the culture of the school as a whole' (Ko *et al.*, 2015, p. 234). Research on school subject departments is, however, relatively limited. It was previously suggested to be a level of analysis 'invisible' to research (Ball & Lacey, 1984; Siskin, 1994), and studies continue to focus 'principally on cultures at whole school level rather than within the smaller unit of secondary school subject departments' (Childs *et al.*, 2013, p. 38).

In this paper I explore student teachers' positionalities as knowers within school subject departments, drawing on an ethnographic study of three secondary-school geography departments in England, and utilising a social-realist conception of knowledge–knower structures (Maton, 2014). After introducing these concepts, I present the study design. The findings and discussion begin with an analysis of departmental space-times, and the construction of 'coffee and kettle space-times', which I argue are important facilitators of informal conversations between teachers. When experienced teachers discover limitations in areas of their subject knowledge, they are able to use these informal conversations to mine the rich departmental expertise and to do so in ways that do not allow them to be judged as not-knowing. However, the nature of these conversations is also argued to be limited, unplanned for and dominated by immediate practical concerns. The concept of knowledge–knower structures is then used to further explore student teachers' positionalities as knowers, and I argue that a dichotomous view of knowers was found in these departments. That is, teachers are positioned in relation to different aspects of subject knowledge as either knowing, or not-knowing. There are knowers who know the rules of the department, and at times this group ostracise those who do not know. Student teachers have experiences where they cannot afford, because of the ways in which they are judged against the Teachers' Standards, to be seen as not-knowing. In response, they develop various coping strategies, which include establishing credibility as a knower in other areas of the subject. The discussion engages with the way in which the statutory Teachers' Standards in England orientate teachers in relation to subject knowledge, and I

conclude with suggestions to improve opportunities for student teachers to flourish within departments.

### **Different types of knowers**

The ethnographic research presented here was conducted during a doctoral study that focused on knowledge, using Bernsteinian and (broadly conceived) social-realist tools. Social realism foregrounds a notion of the social when conceptualising knowledge and knowers. It is not the individual knower with whom Bernstein (2000) or social realists (cf. Maton & Moore, 2010; Maton, 2014) are primarily concerned, but knowers: knowledge is seen as ‘inescapably social’, being ‘produced and judged by socially situated actors’ (Maton, 2014, p. 11). A development of Bernstein’s knowledge structures by social realists is in the dual consideration of knowledge–knower structures (Figure 1), which Maton (2007) argues can help ‘shed light on the bases of intellectual fields’ (p. 89). This conception of knower structures is complementary to Bernstein’s knowledge structures, viewing ‘knowledge-producing fields’ through relations between concepts, methods and actors (Maton & Moore, 2010, p. 5).

A strength of this dual focus on knowledge and knowers is the ability to address a longstanding critique of the sociology of education for reducing knowledge to its context of production. Instead, Maton (2014) argues for analytically distinguishing between:

epistemic relations between practices and their object of focus (that part of the world towards which they are oriented); and social relations between practices and their subject, author or actor (who is enacting the practices). For knowledge claims, these are realised as: epistemic relations between knowledge and its proclaimed objects of study; and social relations between knowledge and its authors or subjects. (p. 29)

Knowledge–knower structures are illustrated through ‘two cultures’ (Figure 2): humanities and scientific. The scientific culture exhibits a hierarchical (also referred to as ‘vertical’) knowledge structure, represented by a triangle to signify the

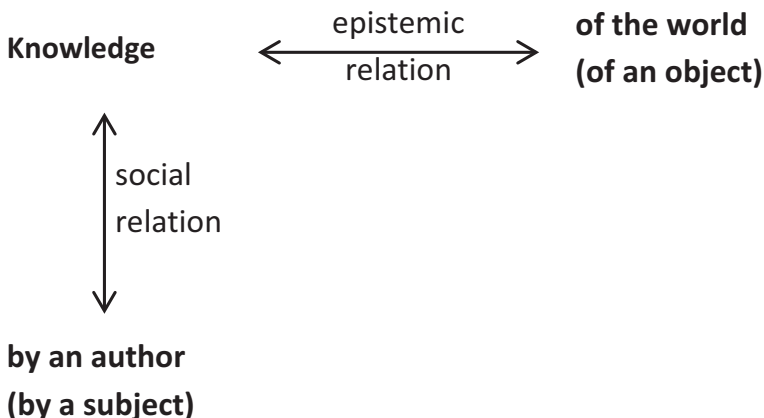


Figure 1. The epistemic relation and social relation of knowledge (Maton, 2000, p. 155)

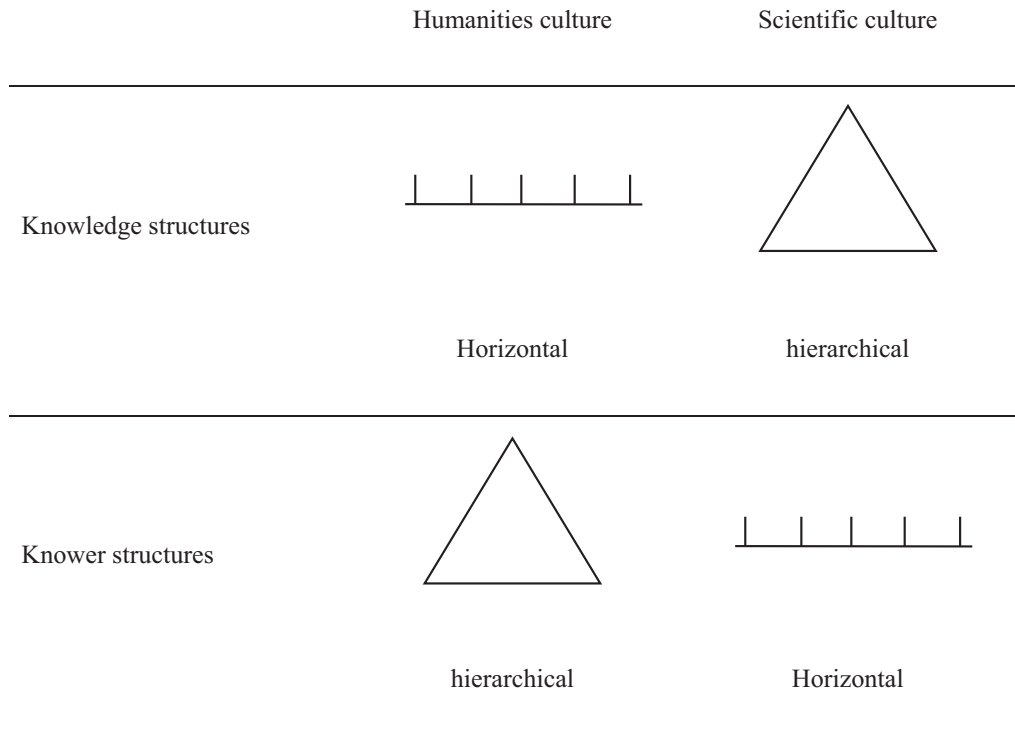


Figure 2. The ‘two cultures’ as knowledge and knower structures (from Maton, 2014, p. 70)

cumulative building of knowledge and the generation of increasingly broad generalisations. The ‘tip’ of the triangle represents a master equation that explains everything.

The knowledge structure of the humanities culture is contrasted against the hierarchical structure as the multiplying of languages. The flat representation indicates that knowledge is not built towards increasingly generalisable claims. Instead, the level of claims made remains similar, while new languages—or theories—are produced. These new languages are represented as compartments, separated by vertical lines on the diagram.

Knower structures are described in the same hierarchical/horizontal terms, but the representations refer to the types of knowers who are seen and accepted within the field as legitimate. Here, the types of structures are reversed and humanities are identified with a hierarchical knower structure. Knowers are not seen to exist along an egalitarian plane: within the field there is a distinct hierarchy. The hierarchical humanities culture is described as favouring knowers with a tacit ‘gaze’. For example, in the shared tacit recognition of certain students as having ‘always been a good geographer’ or a ‘natural historian’: potentially quite different to the judgements that might be made based on evidence about their propositional knowledge as measured through test scores. Scientific knower structures are similarly reversed, and are represented as horizontal, in that such fields are seen as meritocratic: scientific knowledge might be known by all and not just by certain ‘types’ of knowers, because knowledge claims are based on evidence and reason rather than taste, gaze or disposition.

## Subject knowledge and types of knowers in school departments

Subject knowledge is argued by Siskin (1994) to be a fundamental part of what defines a department. She presents departments as not merely organisational units, or physical areas of a school, but as entities which are predicated on subject specialisms with their distinctive approaches towards knowledge: departments have an epistemological dimension. A range of terms have been used to describe subject knowledge, including pedagogical content knowledge (Shulman, 1987), subject content knowledge (Childs *et al.*, 2013) and subject-specific pedagogical knowledge (Burn *et al.*, 2007). I use the term ‘subject knowledge’ in the current paper, which is similar to the ways in which, for example, Ellis (2007) and Brown *et al.* (2016) use ‘subject knowledge’ to refer to knowledge that others might separate into pedagogical content knowledge and subject content knowledge. Social-realist analyses of teachers’ knowledge have also used the term ‘subject knowledge’ to refer to recontextualised forms of disciplinary knowledge (Firth, 2011). This use of the term ‘subject knowledge’ includes forms of knowledge in practice: embodied knowledge that is made visible through the twin consideration of knowledge and knowers. In social-realist terms, this raises questions about the types of knowers that departments accept as legitimate (Maton, 2004, 2007, 2014; Lamont & Maton, 2010).

Analysing school music through a social-realist framework, Lamont and Maton (2010) argue that the understandings of knowledge–knower structures they gained offer an explanation for the low take-up rates of the subject in England. In their study of student teachers’ ( $n = 74$ ) perceptions of subjects—History, English, Psychology, Maths and Natural Sciences—music is ranked as the strongest hierarchical knower culture. They suggest that developing awareness of the different knower and knowledge structures in student teachers’ placement schools helped to improve the student teachers’ confidence: ‘it is a recognition of the knower code dominating music in primary school that helps alleviate their profound lack of confidence and reluctance to engage – they come to see the “rules of the game”’ (p. 73). The ‘rules of the game’ are described in research on knowledge–knower structures in school history as the ‘relevant constellations of meaning’ (Martin *et al.*, 2010, p. 433) into which student teachers—and their students—are apprenticed. These ‘constellations of meaning’ include recognising the importance of developing an appropriate ‘gaze’, denoting an almost intangible ontological change in the person. An implication of this hierarchical knower structure is that the rules over who gains this kind of gaze and thus becomes accepted as a legitimate knower are unwritten.

The limited research on school subject departments suggests that knower and knowledge structures may not be straightforwardly translated from Maton’s (2014) representation (Figure 1). For example, Melville and Wallace (2007) describe a school science department with a hierarchical knower structure (humanities culture). Their research is located in the context of a shortage of science teachers, and (Australian) government policy of recruiting older, non-specialist teachers from other professions. These new teachers have no recent academic experience of science, but may have been working in industry. Collecting data over 10 weeks by observing meetings, lessons and informal conversations between staff, Melville and Wallace are particularly interested in the ways in which new non-specialist teachers are socialised into a

department. They provide examples of hidden assumptions the department shares that are hard for new members, particularly non-specialists, to engage with. This is similar to the distinction between veteran- and novice-orientated departments made by Kardos *et al.* (2001), and the individualistic and collaborative cultures described by Childs *et al.* (2013). By foregrounding the lack of distribution, sharing or debating of knowledge, Melville and Wallace's department, Kardos *et al.*'s veteran-orientated departments and Childs *et al.*'s individualistic cultures seem to be characterised by a knower structure similar to the hierarchical humanities structure: the basis on which one is included or excluded is tacit, and not made explicit.

### **Methodology: ethnographic study of departments**

Ethnography's concern with everyday practices, explored from a personal, embodied and empathetic stance (Mills & Morton, 2013), makes it a particularly appropriate approach for studying student teachers' positionalities as knowers within school subject departments. I conducted fieldwork over one academic year, with the time split between departments, each of which had two blocks: what Jeffrey and Troman (2004) refer to as 'recurrent time mode ethnography' (p. 542). I taught lessons to cover for absent teachers, worked alongside students as a Teaching Assistant, organised resources, did photocopying and made tea. One semi-structured individual interview was carried out with each teacher during each block of fieldwork, to a total of 22 interviews with 14 teachers over the duration of the study. Towards the end of the fieldwork in each department, a focus group was conducted with all teachers in the department. I attended department meetings, school meetings and INSET (in-service education and training). From my base in departmental shared spaces I observed other informal interactions, discussions and mentor conversations. Data generated included over 127,000 words of interview transcripts, over 1,000 photographs, 14 subject knowledge maps, 300 pages of fieldnotes and 100 pages of other documentary evidence. The intention throughout the fieldwork was to create opportunities for 'engaged listening' (Forsey, 2010, p. 560), that is, 'listening' to others in the departments as often and as fully as possible, occasionally in semi-structured interviews and focus groups, and more often during regular conversation. Pseudonyms are used to refer to the departments and teachers, and efforts have been made to maintain confidentiality and anonymity while acknowledging the challenge of this in a methodological approach that values rich, detailed description of people, relationships and contexts. Other ethical implications arising from one particular issue encountered during fieldwork are also explored further elsewhere (Puttick, 2017). The approach towards data analysis was iterative (Crang & Cook, 2007; Srivastava & Hopwood, 2009), in which on-going analysis informed subsequent fieldwork and analysis (Figure 3).

One example of category development is shown in Figure 4. In the use of categories to make sense of the data, attempts were made to draw from the wide range of data generated (primarily to avoid prioritising interview data) and as new areas of particular interest emerged, I made efforts to revisit all data generated.

The pseudonyms used for the schools are Beach Academy, Town Comprehensive and City Academy. They are all mixed, comprehensive secondary schools with students from Key Stages 3–5, and each department represents a different organisational



Figure 3. Phases of data analysis

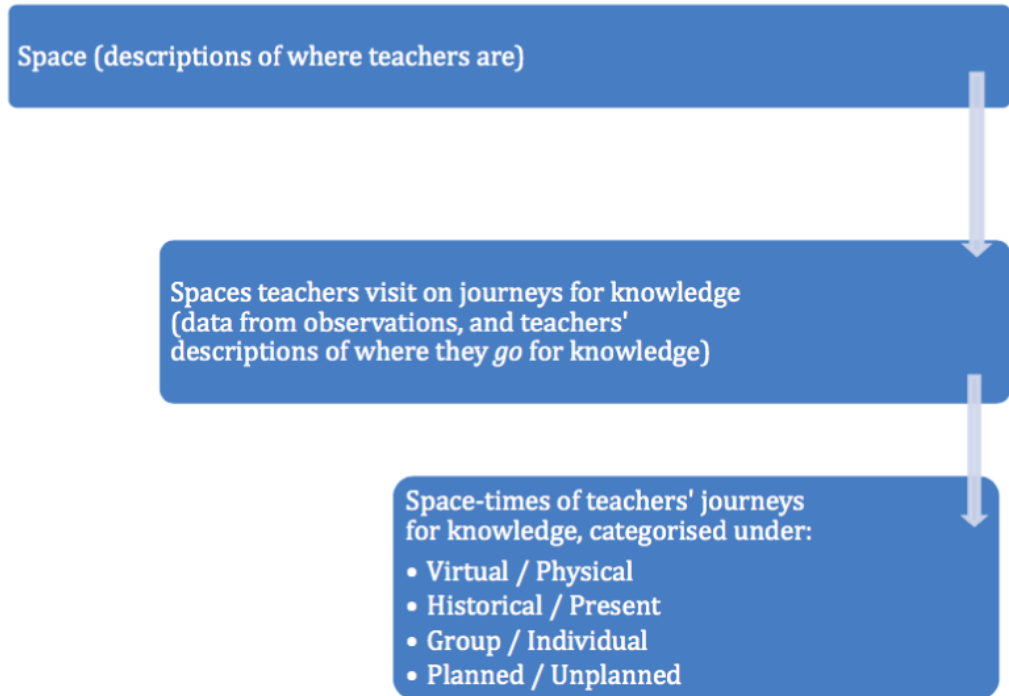


Figure 4. Example of category development [Color figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

type. Beach Academy (BA) is an ‘impacted’ department, having just one full-time geography teacher. In impacted departments this one teacher assumes the responsibilities of a head of department (although they might not formally have this designation). City Academy (CA) is a ‘unitary’ department, with its own head of department, budget and spaces. Town Comprehensive (TC) is a ‘federate’ department, sharing spaces, budget and a faculty head with other cognate subjects (see Busher & Harris, 1999 for further discussion of department organisational types). A summary of the departments is shown in Table 1.

The departments have longstanding relationships in ITE partnerships with universities, hosting student teachers on PGCE (Post Graduate Certificate of Education) courses. Four of the 14 teachers in the departments at the time of the study were on PGCE courses. Town Comprehensive did not have geography PGCE students during the fieldwork because the regular mentor was on maternity leave. However, other

Table 1. Summary of participants (Puttick, 2016, p. 139)

No.	Pseudonym	School	Formal role(s)	Length of service (years including current year, excluding training year)
1	Ruth	TC	Geography teacher. Head of Year 9	31
2	Steve	TC	Geography teacher. HoD (Head of Department)	10
3	Gemma	TC	Geography teacher. Head of Year 8	9
4	Jess	TC	Geography teacher (temporary; maternity cover); NQT	1
5	Hugh	BA	Geography teacher. Informally, HoD	10
6	Tim	BA	Geography (0.5) and History (0.5) teacher; NQT	1
7	Pam	BA	PGCE Geography student teacher	0
8	George	BA	PGCE Geography student teacher	0
9	Richard	CA	Geography teacher. HoD	15
10	Sophie	CA	Geography teacher. Assistant head teacher	8
11	Paul	CA	Geography teacher	7
12	Claire	CA	Geography teacher. Assistant HoD	4
13	Laura	CA	PGCE Geography student teacher	0
14	Tanya	CA	PGCE Geography student teacher	0

student teachers were present in History and Modern Foreign Languages (MFL), and so the experiences of these student teachers also inform the following discussion of findings, which begins with departmental space-times. I argue that departments have unwritten ‘rules’ which split teachers into those who know and those who do not know. I then discuss coffee and kettle space-times, and argue that these space-times provide important informal, unplanned opportunities for teachers to address limitations in their subject knowledge. The ways in which teachers present themselves as knowers of particular areas of the subject are significant, and I argue that these student teachers are positioned in relation to subject knowledge in binary terms of either knowing or not-knowing. Student teachers’ engagements with subject knowledge are complicated by the judgements made of them using the Teachers’ Standards, and I argue that because they cannot afford to be seen to not-know, they use coping strategies such as establishing credibility in certain areas.

### **Departmental space-times and knowledge of social norms**

Departmental space-times (Massey, 1999) are ‘constituted through the social, rather than as dimensions defining an arena within which the social takes place’ (p. 262).



That is, physical descriptions of the departments are portrayed in close relation to the social constitution of these places. The sizes of different aspects of the departments, and the number of different spaces (in particular, the presence or absence of a shared departmental office), are of note. However, these spaces (space-times) are—possibly more importantly—constituted through the social interactions of the teachers and others who work and study there.

The construction of departmental space-times includes establishing unwritten rules in relation to a range of issues, such as pedagogy and the use—or not—of technology for teaching. Beach Academy provides an interesting example of a department that makes considerable use of technology, and student teachers made explicit what they perceived to be unwritten rules about technology. For example, planning a lesson, Pam (a student teacher) tentatively asked the head of department (Hugh) if it would be ‘ok’ for her to use paper atlases with the students, rather than using Google Earth on the iPads: ‘*I’m not going to be frowned on for not using technology, am I?*’ (Pam, field-notes) Similarly, George reflected on the contrasts between departments:

*they’ve got a lot of different teaching methods, a lot more ICT, a lot more diversity rather than... at the grammar school there was quite a lot of textbook work, and focus on textbooks rather than focus on like PowerPoints or that sort of thing, so, and a lot of the schools – like this school they don’t – I’ve hardly seen one lesson that’s been based on [a] textbook... (George, interview 1: 62)*

Textbooks are used to represent one approach towards teaching geography; traditional, and associated with grammar schools. PowerPoints ‘or that sort of thing’ are positioned against textbooks, and the different resources emphasised by the schools George has experienced are described as ‘quite a contrast’. One implication of the conception of space-times introduced above is that spaces change depending on who is inhabiting them. Beach Academy would be a different space-time, with different unwritten rules about the expectations surrounding pedagogy and the use of technology, if the teachers were replaced by those from George’s grammar school. On a smaller scale, and on an almost hourly basis, department offices shift usage depending on who is there, altering the rules and expectations of the space-time.

In Town Comprehensive the humanities office space was shared; available to all, but owned by none. Some offices are exclusively ‘back-stage’ (Goffman, 1956; Crang, 1994); a space for teachers and not students, in which teachers may ‘interrupt [their] performance momentarily for brief periods of relaxation’ (Goffman, 1956, p. 70), whereas Town Comprehensive’s office shifted between back- and front-stage, and between different senses of these, depending on who was there. A shared photocopier was located in the office, and was used frequently—up to an average of over once every three minutes, or 22 times per hour. Teachers either used the copier directly, or remotely from classroom computers. If the latter, students were sent into the office during lessons to collect copies. Nearly everyone walked straight into the office through the open door, with only the occasional student stopping, knocking and waiting. When I was alone in the office, students, teachers and other adults walked in and out. If the Head of Department (HoD) was present, the rules changed: students knocked and Teaching Assistants asked permission to work there. Other teachers still came in and out to use the photocopier, although there were unwritten

rules about the way in which this ought to be done, and the times at which conversations might be initiated. Last night's TV, hangover cures, wedding plans, resources, school policies, ideologies and social justice issues were all discussed around the photocopier, although the main topic was *how that lesson just went*. On one occasion an MFL student teacher broke the rules of the space-time, asking for help during lesson time in a way the teachers described as 'cocky' and 'arrogant'. He didn't know how to use the copier, and asked the others—who were working with their backs to the room—for their subject's code. His request was refused. He then went to use the guillotine, and was again denied this: it had been bought by the geography department and so if he wanted to use one it should be the MFL department's guillotine. 'So rude', remarked the HoD after the student teacher left;

*do I need to put a sign on the door? I don't just walk into the MFL faculty room and just start having a conversation... They shouldn't use the guillotine – we bought it, and offered to share, but no-one wanted to, so it's just ours. It's getting out of control the people coming in here.* (HoD, Town Comprehensive, fieldnotes)

The unwritten rules surrounding the uses of shared spaces are complex, and offer a setting for power relations to be negotiated. The rules may be hard to apprehend for the uninitiated, whereas for those regularly constructing the space in a consistent way—we don't talk at that volume here, or use this equipment if we are from that department. The kinds of knowers accepted as legitimate in these space-times are hierarchical: participating effectively requires an initiated, tacit gaze.

These ethnographic observations start to reveal something of the unwritten challenges departmental space-times present for student teachers. In Childs *et al.*'s (2013) and Burn *et al.*'s (2007) studies, the departments had shared areas for the teachers in which they might make tea and coffee. Only one of the geography departments in the current study had such facilities: a mundane observation, but one with potentially significant implications for teachers' interactions and developing expertise. In City Academy, the one department with a kettle, coffee and kettle space-times played an important role in facilitating discussions for student teachers.

#### *Coffee and kettle space-times*

Coffee was an important part of teachers' daily routines in City Academy. *Coffee?* Was the most frequently asked question. The geography office was often filled with the sounds of the kettle being filled and boiled. Coffee aromas infused the air and tired, busy teachers clasped freshly filled (if not always freshly cleaned) mugs, snatching conversations around the kettle. Before school several cups were consumed, with more following at morning break, lunchtime and afternoon break. Waiting for the kettle to boil and the coffee to brew were important times for interactions between teachers in the department: key moments at which student teachers sought additional feedback on lessons delivered, and guidance on lesson plans under construction. Interactions were made possible at these times because one teacher was normally static; standing and waiting. The lengths of times were constant. The kettle takes a certain amount of time to boil, and the coffee was brewed for a relatively similar duration. Only on the busiest days would a teacher

come into the office to fill the kettle and then leave it to boil as they dashed back to their classroom or over to the photocopying room. On these days, the kettle might boil two or three times before the water was actually used to fill the canteen, and the process became a team effort with one boiling the kettle, another scooping the coffee and another pouring the water. However, normally one teacher made coffee and stood, waiting as boiling and brewing happened. The coffee maker's presence was then met by another teacher passing by or through the office. Seeing, stopping and then speaking with one another was facilitated by these coffee and kettle space-times. First thing in the morning conversations between teachers included plans for the day, and questions about the locations of resources: *Do you know where that PowerPoint is? I'm going to use it with my year nines later.* These short coffee and kettle conversations frequently included social topics about one another's families, and plans for the weekend. From mid-morning until the end of the day the conversations changed, becoming about *what just happened in that lesson I just taught.* One HoD described these conversations in the following terms:

*normally if [conversations about knowledge] happen at key stage 3 it's because someone's come onto a new topic they've not taught before... but they're never formal – they generally are informal, having a cup of coffee – 'I've got to teach this', 'I haven't got a clue what's going on'... there [aren't] really any systems for having those conversations in a formal setting. (HoD, City Academy, interview 1: 68)*

These conversations are located around a cup of coffee, and are described as informal; they are not planned, nor is there an expectation they will happen. The purpose of discussing this aspect of subject knowledge arises from necessity; that is, needing to teach the topic to a particular class at a particular time. Examination specifications are powerful dictators of content (Puttick, 2015), and the HoD also described these conversations following the introduction of a new specification. Conversations facilitated by coffee and kettle space-times seemed to provide these teachers with their most significant form of discussions, supporting arguments made by Childs *et al.* (2013) that such interactions are 'fleeting and serendipitous – a long way from the more systematic inquiry and reflection by individuals and departments that have been suggested result in teacher learning' (p. 51). They go on to argue that:

*if the principal form of interaction, no matter how supportive and collaborative, is this briefer and apparently haphazard kind, this may pose serious challenges for the professional development of both beginning and experienced teachers should teacher education become entirely school-based. (p. 52)*

The fleeting and serendipitous nature of conversations about subject knowledge facilitated by these departmental space-times has implications for all teachers because of the importance of subject knowledge, although student teachers are particularly affected because of the evaluative nature of the relationship with their mentor (Sirna *et al.*, 2008). In England, student teachers must be judged as having met—and, ideally, exceeded—the requirements set out in the Teachers' Standards (DfE, 2011), and the school-based mentor plays a significant role in this judgement.

### Teachers' Standards and subject knowledge

The statutory standards for Qualified Teacher Status were introduced in England in 1997, and most recently revised in 2011: part of the attempt to construe 'consensus around teachers' professional knowledge, values, and abilities, leading to consistency of teacher education provision and teacher assessment' (Oancea, 2014, p. 512). The standards begin with a preamble which includes the following statement about subject knowledge: '[Teachers]... have strong subject knowledge, keep their knowledge and skills as teachers up-to-date and are self-critical' (DfE, 2011). Within the third standard (Demonstrate good subject and curriculum knowledge), there are five sub-headings. Three refer to literacy, phonics and numeracy, and only the first two explicitly mention subject knowledge: 'have a secure knowledge of the relevant subject (s)...' and 'demonstrate a critical understanding of developments in the subject... and promote the value of scholarship'. These standards have international parallels. For example, the Australian teachers' standards state that teachers must 'know the content and how to teach it' (AITSL, 2015). The Californian standards (Commission on Teacher Credentialing, 2009) use the more general term 'knowledge base': 'excellent teaching requires knowledge, skills, artistry, passion, and commitment. It requires both a deep understanding of the knowledge base that supports the profession and a vigorous commitment to a set of professional responsibilities and obligations'. In New Zealand, the terms 'content knowledge' and 'pedagogical content knowledge' are used: teachers must 'have content knowledge appropriate to the learners and learning areas of their programme... draw upon content knowledge and pedagogical content knowledge when planning, teaching and evaluating' (Education Council New Zealand, 2015). These different emphases are important for conceptions of teacher professionalism and autonomy (Sachs, 2003), and in England there are tensions between 'strength' and 'security', and open discussion and scholarship.

When discussing subject knowledge, Tanya (a student teacher in City Academy) describes spending her ITE year on teaching methods, whereas in terms of subject knowledge:

*obviously I've done my degree in it, and it's not as much of a focus – I should already have the background knowledge, or I shouldn't have been allowed onto the course (Tanya, interview: 197)*

From this position, being self-critical and asking questions runs the risk of opening up accusations of not having strong subject knowledge. On the one hand, the expectation of having strong subject knowledge is non-objectionable: the opposite, having weak subject knowledge, seems obviously undesirable. This opposite makes the term problematic: other possibilities are side-lined, and discussion is restricted. However, even from within the discourse of standards, alternatives are possible, as illustrated above in which teachers' orientation towards knowledge is presented variously: in relation to the appropriateness for the learners (New Zealand); as content to know and to know how to teach (Australia); and as something to understand deeply and hold alongside skills, artistry, passion and commitment (California). Even within the English standards, valuing scholarship has the potential to open up a more expansive discussion that is not reduced to evaluative judgements about strength and security.

Nevertheless, student teachers do need to be judged as having strong subject knowledge, and one implication is that their questions about subject knowledge need to be moderated: enough questions to seem ‘self-critical’ and wanting to ‘keep up to date’, but not so many questions as to raise concerns about weakness. As Sirna *et al.* (2008) conclude, student teachers ‘sacrificed asking questions. . . because they feared that it might make them seem incompetent or otherwise negatively affect their evaluation’ (p. 296). This may be a part of Tanya’s desire to assume subject knowledge—referred to simply as ‘background’—which she presents through a binary distinction between knowing and not-knowing.

### A binary conception of knowing and not-knowing

The binary knowing/not-knowing is the dominant way through which the departments in the current study describe the relationship between knowers and subject knowledge. One consequence of the binary between knowing and not-knowing is that conversations about subject knowledge are restricted to the start of a teaching career, or the start of a new topic, rather than as on-going, dynamic scholarship incorporating development and critique. The HoD’s words—introduced above, and now reconsidered from this additional perspective—illustrate this:

*normally if [conversations about knowledge] happen at key stage 3 it’s because someone’s come onto a new topic they’ve not taught before. . . but they’re never formal – they generally are informal, having a cup of coffee – ‘I’ve got to teach this’, ‘I haven’t got a clue what’s going on’. . . there [aren’t] really any systems for having those conversations in a formal setting. (HoD, City Academy, interview 1: 68)*

The teacher is placed in a position of not-knowing: they have *never* taught the topic before, and they *haven’t got a clue* about it. Here, the relation between knower and subject knowledge contrasts against the relation between knowers and the shared norms of departmental space-times. Examples of departmental space-times discussed above constructed a hierarchical knower structure in which norms are implicit and knowers are accepted on the basis of demonstrating their tacit know-how to participate. Against this, subject knowledge in these school geography departments seems to represent a horizontal knower structure: the basis on which the teacher moves from a position of not-knowing to knowing is explicit. Over a cup of coffee they ask another teacher (*‘I’ve got to teach this. . . I haven’t got a clue. . .’*) with the expectation that they can be told what to know, or what to read and so come to know. However, the nature of the judgements made of student teachers shifts their engagements with subject knowledge into a hierarchical knowledge–knower structure because of the identity politics to be navigated within a binary discourse of knowing/not-knowing. One approach used by the student teachers in the current study to negotiate the binary between knowing and not-knowing, while also understanding the need to maintain their identity as someone with strong subject knowledge, was to self-identify very strongly with a certain aspect of geographical knowledge, and from within that place of credibility to then reveal contrasting areas of not-knowing. For example, Pam (student teacher in Beach Academy) emphasised her expertise in tectonics and—against this strength

—contrasted her struggle with rivers, highlighting areas she has *never* done: ‘I’m struggling a bit with year 9’s because they’re doing rivers. . . and like I said to you the other day, the Bradshaw model. . . I’ve never done that before in my life’ (Pam, interview: 38–40). The binary terms used by Tanya in relation to her undergraduate experiences also illustrate this:

*I wasn’t enjoying the geography. . . it was too physical. . . and I didn’t pay any attention to the physical geography – and I think it was the same with the physical geographers – lots of them didn’t really, unless they were kind of in the middle, lots of them just didn’t care about the human side of it, but in the first year you had to do half and half, and so you kind of turned up to a few lectures or turned up to most on them but, y’know, to pass exams. . . now it probably would have been better to learn about both sides, would have really helped.* (Tanya, interview: 91–95)

Tanya uses two binaries to position herself; one about the subject (‘sides’: human/physical) and the other about herself as a knower (knows/does not know or cares/does not care). The realisation that it would have ‘really helped’ to learn about all of geography was reflected in Tanya’s learning from her mentor, which again drew heavily on a binary distinction in her orientation as a knower: ‘*but yeah if it’s physical geography like with the storms, I like to go over with [my mentor] because if it’s something like weather, I never understood weather*’ (Tanya, interview: 95). Again, the language is dichotomous; she has *never* understood it. Against these areas of not-knowing, and equally strongly, Tanya describes politics as an area of strength in her subject knowledge: ‘*I know about Britain in Europe, Yeah – I know about politics*’ (Tanya, interview: 105). Her experiences of this area are described with similar contrast to the not enjoying/not caring above—instead, it is the ‘best thing in the world’:

*we did something called global futures. . . I did it on trade barriers and like the development gap due to trade barriers, and it was like the best thing in the world because it completely fitted what I enjoy, which is politics, human geography.* (Tanya, interview: 68)

Tanya’s affective response to, and attachment with, areas of subject knowledge is passionate, and hints at the excitement for knowledge that characterised all of the teachers in this study. Teachers, mentors and heads of department had significant knowledge to which student teachers might be introduced to, discuss, and be provoked and stimulated by. However, the binary conception of teachers’ knowledge, associated with the Teachers’ Standards language of strength and security, enacted through busy departmental space-times, characterised by hierarchical knowledge-knower structures in relation to shared norms, restricts discussion. This is similar to Biesta’s (2004, 2006, 2010) arguments about the reduction of educational discourse to learning. The term ‘learning’—similar to the aim of having strong subject knowledge—seems non-objectionable. However, an implication for educational discourse is that it ‘makes it far more difficult, if not impossible, to ask the crucial educational questions about *content, purpose and relationships*’ (Biesta, 2012, p. 36). There is a need to replace ‘impoverished metaphors’ (Pring, 2007) such as “‘raising standards”, “attaining targets” or “effective curriculum delivery” . . . with ones that are more democratic, as well as more human – such as Oakeshott’s (1962) “conversation”, and Dewey’s (1916) “organic growth”’ (Oancea & Bridges, 2009, p. 557).

## Conclusions

In this paper, I have presented an analysis of student teachers' positionalities as knowers within school subject departments. The ethnographic data illustrates the complexities and identity politics that student teachers negotiate within departments, including their movement from a position of not-knowing to knowing unwritten norms. I have argued that these departments only offer 'fleeting and serendipitous' opportunities to discuss subject knowledge, and even these opportunities can be problematic for student teachers to access because of the ways in which judgements are made about the strength and security of their subject knowledge. By applying a social-realist conception of knowledge and knowers, I argued that these departments and student teachers draw on a binary conception between knowing and not-knowing. In discussing the shared norms of departmental space-times, I argued that these departments accept a kind of knower associated with a hierarchical knower structure (humanities culture) who embodies a tacit gaze and intuitively knows how to be and act. Aspects of this kind of knower are also needed to negotiate what I presented as a tension between having—and being judged to have—strong and secure subject knowledge, while also being self-critical and (being seen to be) developing well within a department. This discussion was located in the broader context of the Teachers' Standards in England and internationally. The student teachers in the current study negotiate the tensions around the need to be judged as having strong subject knowledge by drawing heavily on a binary conception of knowing/not-knowing particular aspects of their subject. In the case of geography, these teachers identify as human or physical geographers, and then from this place of credibility as a knower, position themselves in the opposite way in relation to other areas: that they know *nothing* about it, and have *never* done. The horizontal knower structure of these departments in relation to subject knowledge creates opportunities for learning, as the basis on which knowers might be accepted as legitimate is made explicit: the knowledge is made available to all and might be known by all. However, the openness of access to this knowledge is time-limited. In this respect, departmental space-times allow questions about subject knowledge within defined temporal windows; during the ITE year, and when teaching a topic for the first time. There are, therefore, significant opportunities to develop departmental space-times in order to better—that is, more regularly, more openly, and more intentionally—facilitate on-going discussion about subject knowledge. There are also opportunities for school and university-based mentors to help student teachers to be inducted into unwritten departmental norms, and to better help them mine departmental expertise. Raising the issue about such norms is a first step, which might include analysis of case study student teachers' experiences, and theoretical categorisations of departments before beginning placements. Developing more sophisticated understandings of departments as a sociological phenomenon might improve student teachers' ability to critically understand and engage with the kinds of environments within which they hope to develop. Early opportunities for student teachers to provide expert subject input to the department might also be planned, for example, by delivering a brief summary (such as a final-year research dissertation) during a department meeting. Being the ones to offer updates to experienced teachers' knowledge might help student teachers to be acknowledged within the department as ones

who know, making future questions about subject knowledge easier to ask. Findings about the dichotomous language of knowing or not-knowing present a challenge for mentors across ITE partnerships, who should seek to construct alternative, more sophisticated discourses that reject simplistic audit and gap-filling approaches towards subject knowledge and instead encourage deep, critical and on-going engagements with their subject. The aim of these initial suggestions is to maximise opportunities to learn from the shared, rich mines of expertise held across ITE partnerships.

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