

1.0 Introduction

Starting a new career is stressful and requires support. Beginning teachers (BTs) start teaching careers through initial teacher education (ITE) programmes designed to offer such support. If it is argued that support is gained through relationships, planning opportunities for supportive relationships to develop may be insufficient. BTs will need to be active in relationship-building. This study looks at the resources available for BT support through relationships and the ways BTs access these resources in the context of a PostGraduate ITE programme in England. We use notions of networking to describe BT relationship building and to explain how networking processes help BTs build what has been termed social capital. The capital, or benefits, BTs gain from relationships can help explain their nature and importance to BTs' development as professionals.

This study is set within one English ITE University-school partnership programme for graduates with a subject-specialist first degree, which includes two placements organised by the University in partner schools¹. This paper argues that, whilst not denying that support is offered through formal elements of ITE programmes, it is the social capital developed by BTs through their networking during the programme which helps them cope with the challenges presented by starting teaching. The relationships BTs build will have continued importance for their development and success in teaching.

1.1 Becoming a teacher

Becoming a teacher is not merely to acquire necessary knowledge and skills to teach in classrooms. It is a transformative process (Wilson, 2012). Through ITE programmes BTs are introduced to classrooms and encouraged to take an increasingly responsible role in leading learning in these classroom environments. These programmes also include sessions and academic assignments about the theory of teaching. BTs need to make sense of both theory and practice training experiences to be able not only to 'act' like a teacher but, more deliberately, to 'think' like a teacher (Wilson & Demetriou, 2007). Further, if they are to commit to the profession, arguably they need to 'feel' like a teacher (Nias, 1989) so developing an identity as a teacher. These transformations are complex, demanding, personal and therefore stressful: they require support (Ewing & Manuel, 2005; Johnson et al, 2010).

¹ At the time of the study this was the traditional model for initial teacher education in schools in England, but school-led and school-based models, such as Schools Direct and School Centred Initial Teacher Training (SCITT) with different school-University partnership arrangements, are increasingly prevalent.

We argue that this support comes from the interpersonal interactions and relationships BTs experience through networking. This social dimension to teacher identity development is highlighted in international studies of teachers at different stages of their careers (Alsup, 2006; Beijaard et al, 2004; Chong & Low, 2008; Day & Gu, 2010; Nias, 1989). Others, through the relationships they build with BTs, contribute both affectively (emotionally) and cognitively (knowledge-related) to a teacher's development (Nias, 1989; Troman, 1999). If BTs are supported they can develop a 'self-efficacy' (Fox & Wilson, 2009; Johnson et al, 2010; Kelchtermans & Ballet, 2002) to believe they can practice effectively as a teacher. They can also develop a necessary sense of belonging (Johnson et al, 2012; Le Cornu, 2013; Rippon & Martin, 2006) to commit to the profession. Not all relationships are positive and some add to the challenges of developing professionally as a teacher (Chong & Low, 2008). The effectiveness of relationships for support is important to understand if, as the Organisation for Economic Co-operation and Development (OECD) conclude,

'...experiences [of support] in the early years help determine whether a teacher will have a long career' (OECD, 2004, p5).

This realisation has led to two bodies of related international research (including Australia, Canada, Singapore and the United Kingdom(UK)) into teacher resilience (Chong & Lo, 2009; Day & Gu, 2010; Le Cornu, 2013; Mansfield et al, 2012; Tait, 2008) and teacher wellbeing (Day & Kington, 2008; Dunlop & Macdonald, 2004; McCallum & Price, 2010; Noble & Macfarlane, 2005). Together, this research highlights the social dimension to support recognising that BTs need to be 'able to form and sustain socially positive relationships' (Day, 2008, p355) and develop 'relational resilience' (Le Cornu, 2013, p4). Research is now needed into how BTs develop such positive relationships.

1.2 Support for beginning teachers

As noted, support for BTs is planned into ITE programmes (Wilson, 2012; Cox, 2012; Johnson et al, 2012). In the programme in this English study the University partner offered BTs insights from educational research and scaffolded opportunities to reflect on in-school experiences. The partner schools offered opportunities to work with more experienced teachers to gain access to their expertise as well as experience authentic classroom teaching practice. In English ITE provision the majority of BT time is spent in schools, developing an increasing teaching load during the course. We believe this increases the relevance of this study to BTs beyond their training year.

In such partnership provision BTs will need to make sense of experiences in one setting to apply to the other and, ultimately, help them develop their professional practice as a teacher. Such school-University partnerships are prevalent internationally (Cooper & Alvarado, 2006; OECD, 2011; Villegas-Reimers, 2003) with the OECD challenging them to ensure BTs are offered fully-integrated experiences (OECD, 2011; Schleicher, 2012). Those with formal roles in supporting BTs will help BTs integrate their experiences across settings, although are themselves located principally in only one; mentors (in schools) and supervisors (in Universities). Mentor/supervisor-BT relationships have become a focus for an international body of research in Australia (Ambrosetti & Dekkers, 2010; Le Cornu & White, 2000), Switzerland (Harscher et al, 2004), the United States (US) (Hallam et al, 2012; Tomas et al, 2008) and theoretical work by Mertz (2004).

As well as being provided with opportunities for support, BTs will need to be active in taking up these opportunities and/or, as this paper argues, make their own opportunities. During their ITE, BTs interact with many people other than their mentors and supervisors. To understand the contribution others make to their development as a professional we need to identify them, have ways of thinking about how effective, supportive relationships develop and what forms of support they offer? Networking offers a useful conceptualisation.

1.4 Networking as a way of thinking about BTs' access to support

The importance of BT networks for support has been raised by recent empirical studies in Canada (Deal et al, 2009), England (Fox & Wilson, 2009; Wilson, 2012) and the US (Baker-Doyle, 2011; Baker-Doyle & Yoon, 2011). With whom BTs connect and build relationships can be mapped as their personal networks to reveal the value and strength of these relationships (Carmichael et al, 2006; McCormick et al, 2010). Such studies show that, additionally to mentoring and supervisory roles, support comes from a range of informal sources: peers; other school-based teachers; University lecturers; partners; parents and friends. BTs' strategies for learning informally are under-researched (Hoekstra et al, 2007). Knowing the structure of BT networks is not enough to understand the value of relationships to BTs' development as professionals. It is important to understand the processes of relationship building (networking) which result in BTs gaining tangible benefits to help them 'act', 'think' and 'feel' like a teacher.

1.5 The research questions

The following three research questions form the basis of this paper:

RQ1: From whom do BTs report gaining support during their ITE?

RQ2: How do BTs develop supportive relationships during ITE?

RQ3: How do BTs understand the relationships they develop in terms of optimising support?

2.0 Organising concepts

Arguing that BTs access support through relationship building, we suggest that they develop social capital through such networking. Social capital is a way of thinking of the benefits accrued from relationship building and can be characterised as two types. We drew on Adler & Kwon's (2002) notions of *bonding* and *bridging* capital, as well as Portes' (1998) explanations of the motivations associated with such capital-building as *consummatory* or *instrumental*. These organising concepts were helpful in thinking about how BTs used relationships to access resources of support to benefit them as they underwent transformational development into a professional teacher.

2.1 Personal networks and networking

When researchers describe individual networks the people/groups with whom they connect are known as 'nodes' and the connections between them (relationships) as 'links' (McCormick et al, 2010). The structures are helpful in describing the resources an individual can draw upon for information, advice, collaboration or social support. The processes can help understand how these resources are accessed (Carmichael, 2011; Carmichael et al, 2006; Fox & Wilson, 2009; McCormick et al, 2010). The nature of network links can be conceptualised as follows (see Table 1).

[Table 1 here]

These five dimensions offer useful ways to characterise links in BTs' personal networks. The *strength* of a link indicates how much interaction there is between a BT and others. The *perceived value* of a link relates to how much support a BT feels they get from the other. The *formality* of a link relates to whether the resources are associated with formal aspects of ITE provision or informal opportunities for networking. *Temporality* refers to how each relationship develops and how proactive BTs are in utilising these links over time. Describing the nature of BT links reveals the mechanisms for gaining effective support, but does not fully explain the connection between these mechanisms and the benefits afforded.

2.2 Networking and social capital

Social capital is a useful notion to explain the benefits BTs can accrue from networking (Coleman, 1988; Schuller & Field, 1998; Szreter, 2000) and has already been used to help understand BTs' development as professionals (Baker-Doyle & Yoon, 2011; Chattopadhyay, 2013; Maier & Youngs, 2009). Social capital theory highlights paying attention to how mutual respect and trust are developed between individuals to enable goals to be pursued (Portes, 1998; 2000). Attention on how trust can be cultivated between teachers is now gaining attention (Cox, 2012; Wu et al, 2014).

The benefits of relationships to BTs could be cognitive (associated with knowledge and skill development) (Hargreaves, D., 2003) or affective (related to their care, encouragement and reassurance of BTs) (Morgan et al, 2010). These notions of social capital have been located in a broader vision termed *professional capital* to explain the development of teachers as professionals - comprising:

human capital (the talent of individuals); social capital (the collaborative power of the group); and decisional capital (the wisdom and expertise to make sound judgments about learners that are cultivated over many years) (Hargreaves, A. & Fullan, 2013, p37)

Human capital, sometimes termed intellectual capital (Hargreaves, D., 2003), is expected to be held across all teachers, with *decisional capital*, argued by Hargreaves and Fullan to develop over time, held by mid to experienced teachers. *Social capital* relates to how human and decisional capital is distributed (Lin, 1999) and, in this study's context, relates to the resources BTs can draw on for support. Together BTs can develop *professional capital* over time.

2.2.1 Approaches to social capital building

To help address the second research question concepts which helped distinguish between different approaches to BT networking (and therefore social capital building) were needed. Adler & Kwon (2002) distinguish between *bonding* and *bridging* social capital. *Bonding* gives rise, in network terminology, to strong links (Table 1). Authors from outside the field of education (Brehm & Rahm, 1997; Putnam, 1995) explain how bonding is associated with individuals working collaboratively, leading to a sense of affiliation with one another. Bonding social capital requires individuals to spend time together, to feel secure, trusting and

motivated enough to share their human and decisional capital resources. Such social capital can explain the effective development of professional learning communities and collaborative cultures within the field of education (Hargreaves, 1992; Johnson et al, 2010). For BTs such social capital building offers an exciting opportunity to become accepted professionally by more experienced colleagues into what might be termed a community of practice (Wenger, 1998) of teachers. Portes' (1998) notion of *consummatory* social-capital-building is helpful in explaining the motivations behind bonding social capital developing, what Portes terms, strong bonds of solidarity with one another. This involves identification with and/or empathy for a colleague, in our case a BT, and their problem or challenge. This might be personally motivated or related to normative behaviours within a workplace. The importance of whole-school cultures of support for BTs is highlighted in studies in Portugal (Flores & Day, 2006); the US (Hallam et al, 2004) and Australia (Johnson et al, 2010). Although such motivations might be associated with formal mentoring roles they are even more likely associated with voluntarily instigated or informal relationships (Cox, 2012; Heffernan, 2004). These might include relationships between peer BTs, especially those located together in a school placement. Peer support has emerged as central to the development of BT relational resilience (Le Cornu, 2013). Significantly the support associated with consummatory social capital is not offered with any expectation of received benefits or rewards.

Alternatively, Adler & Kwon (2002) offer the notion of *bridging* social capital to refer to how individuals can benefit from weaker links in their networks (see Table 1). Weaker links increase the range of resources an individual can call upon (Knoke, 1999) and guard against the dangers of becoming inward-looking, inertial and limited by 'group-think' (Lin, 1999; McCormick et al, 2010). For BTs such links allow opportunities for unexpected inspiration or guidance. By definition these weak links will not be associated with strong bonds and cannot be explained by consummatory motivations. Portes' (1998) offers an alternative notion of *instrumental* social-capital-building. These relationships develop due to expectations of obtaining benefits on both sides. They are transactional and can be ephemeral. However, if expectations are breached, the relationships are risked. Capturing any benefits such as enhanced status or greater respect to those supporting BTs (often unspoken or unconscious) is challenging and notions of power and identity are likely to be relevant (Kelchtermans & Ballet, 2002). Whilst BTs might expect support from mentors and university supervisors, with mentors and supervisors confirming the status of their roles, it is more difficult to see

rewards for other teachers assigned to sharing classes with or supporting BTs more informally.

Although beyond the remit of this study it would be interesting to consider what motivates others to they offer support identified as valuable by BTs. Mentoring studies have shown that the varied intents of others affect the type and quality of support provided to BTs (Hallam et al, 2010; Mertz, 2004). For this it would be useful to review whether all valued support can be explained by ideas of consummatory or instrumental motivations. Portes' ideas have been applied to understanding teacher-pupil relationships (Nasir & McKinney de Royston, 2013; Pedder & McIntyre, 2006), teacher-parent relationships and (Whitaker & Hoover-Dempsey, 2013) and beginning University teachers (Hunt et al, 2012).

What seems absent from Portes' framework are explanations for weak links with no obvious mutual benefits. Another consideration is to identify when social capital fails to build, so limiting BTs' access to resources of support, to reflect on what can be learnt about BT networking (and hence social-capital-building) practices.

3.0 Research Approach and Design

To address our research questions we collected data about the day-to-day experiences of BTs' professional lives, adopting a qualitative, longitudinal and ethnographically-informed approach (Walford, 2009). Data were collected over the course of one PostGraduate Certificate in Education (PGCE) programme by a single researcher utilising multiple research methods to illuminate the relationships, activities, and context associated with BTs' support networks. One option was to shadow BTs, observing their interactions over time. This was neither considered feasible, in terms of researcher capacity, nor desirable, as it was likely to affect BTs' relationship-building and would constitute an additional imposition on school partners. A second option was to ask BTs to self-report interactions and conversations, reflecting on their value. The final design was partly observational, partly participatory. Replicated for each BT, it combined three day-long school visits and ongoing participant self-reporting. This allowed us to construct individual case studies, in a multiple case study design (Robson, 2002), where each case was 'the relationship-building of an individual BT'.

Due to the intensive nature of the planned data collection we needed a limited sample of BTs (from the 19 Chemistry BTs enrolled on the programme). Three were considered reasonable for one researcher to both supervise and research. The study was explained to the full cohort

on their first formal day in the University setting and volunteers invited. After reviewing the programme applications of the six volunteers, three were selected who mirrored the spread of characteristics of the wider cohort. The low interest in the study was not unexpected given that BTs were on their first day of the programme, had no idea how they would fare and hence whether they felt comfortable to commit to a study of their engagement. We assumed that any three BTs would offer unique case studies: Each bringing different perspectives to relationship-building due to unique backgrounds, personalities and attitudes and having different relational experiences through working in two school placement settings during the programme.

These three BTs covered both genders, an 11 year age difference, differing family status, place of residence and means of transport during the programme (See Table 2). Reflecting the high proportion of the wider cohort two of the three were career changers. This is typical for ITE programmes in Western contexts such as in the UK (Priyadharshini & Robinson-Pant, 2003), the US (Castro & Bauml, 2009) and Australia (Williams & Forgasz, 2009).

[Table 2 here]

All names and schools have been anonymised to protect the identity of individuals who offered generous access to personal data. Ethical appraisal of the study (Stutchbury & Fox, 2009), in line with British Educational Research Association guidance (BERA, 2004²), highlighted issues of the intensity of the study for participants and its personal nature. These were especially acute as it was not possible to predict how individuals would fare on the programme and the participation requested from BTs.

This appraisal also focused on the role of the researcher. Although this constituted one of the relationships under study, we decided that the dual role of supervisor and principal researcher was desirable, as it offered both support and reflection on support. We acknowledge the power differential between researcher and participants and implications of this for data collected, to which the researchers remained attentive. The co-author was the programme leader. It was thought inappropriate for them to take a direct role in data collection. Their contribution supported data analysis and reporting.

² The British Educational Research Association's ethical guidance has been reviewed and republished in 2011 but this was since the time of the study.

Participants were offered an additional school visit (and lesson observations) compared to their peers, in return for their collaboration with data collection. It was agreed that lesson observations related to supervision and were not opportunities for data collection. Observations were limited to field notes collected beyond the classroom during school visits. Although blogs also related to supervision, on the first visit, all three participants suggested that these could be analysed for relevant data. Participants were reminded termly that they could withdraw from the study without affecting the supervisory relationship. No concerns were raised and this was seen as indicative that participation was not considered harmful by BTs.

3.1 Data Collection Methods

Data were collected across the duration of the programme (October to June) to allow a longitudinal perspective on the structures of BTs' networks (RQ1), BTs' networking processes (RQ2) and the significance of these for support (RQ3). The following data collection, then analytic, methods were employed.

3.1.1 Participant 'conversation logs'

BTs completed a weekly 'conversation log', using a proforma (see Appendix A). Each interaction was listed, identifying which category of use they served (adopting categories used in studying advice networks³), their nature and their value to BTs.

3.1.2 Participant blogs

Weekly blogging with the supervisor (as part of the ITE programme) discussed experiences and concerns raised by each BT. Although not specifically designed for data collection, these blogs provided information about relationships, as well as insights into BT needs and their views of context (an example blog and comments forms Appendix B).

3.1.3 Field notes during school visits

Each BT was visited in school for a full-day in December, March and May/June. The researcher observed BTs, generating field notes about with whom they interacted, the nature of these interactions and where they spent time. Space was considered likely to be important to determining the types of interactions and development of relationships (Fox & Wilson, 2009; McGregor, 2004).

³ Advice networks are associated with social network analysis. Further information can be found at: <http://www.insna.org/>.

3.1.4 Participant interviews and network maps

Despite the agreed opportunity to collect field notes, the principal aim of each visit was supervisory, to offer BTs feedback on their teaching and to have a professional conversation with their school-based mentor. Participants also agreed to a semi-structured interview of around 90 minutes. The interview asked BTs to generate a representation or ‘map’ of their personal network (Fox et al, 2007). (The first term interview schedule, including the brief for this mapping task, forms Appendix C). This map was revisited and amended on subsequent visits to reflect changes in the network. The interviews also asked BTs to discuss, with reference to their conversation logs and blogs, the initiation, development and issues associated with relationships, including perceived benefits.

3.1.5 Mentor interviews

In advance of each visit, BTs were asked whether they were happy for their mentors to be invited for interviews to offer an overview of BTs’ networking in school. On each occasion BTs consented. Mentors always undertook the professional conversation expected as part of the programme but did not always accept the additional invitation: Their decision was accepted without question. (Appendix C includes the invitation and interview schedule). The data available for analysis was agreed with BTs and mentors.

Table 3 summarises the data set collected:

[Table 3 here]

3.2 Data analysis

Integration of these data sources followed a constant comparison method (Thomas, 2009) organised around two stages. Stage one applied the conceptual framework around networking (summarised in Table 1). From the weekly blogs and conversation logs, considered together week by week, the first author generated grids of BT interactions (see Appendix D). In parallel, the transcripts from the interviews were coded for strength and value by relationship to generate summary tables (Tables 4, 5, 6). This was a principally deductive process applying a coding frame linked to the dimensions of Table 1 validated from previous projects with teachers (Carmichael et al, 2006; McCormick et al, 2010) adapted to include the perceived value of the relationships by BTs. Stage two identified evidence for the concepts of social capital (outlined in section 2.2) from the previously coded data set, again largely deductively. This was carried out by the first author relationship by relationship, requiring iterative review across the multiple data sources. The use of pre-defined constructs to look

across the case data sets increased the reliability of the comparisons being made between cases (Strauss, 1987).

The co-author reviewed a sample of coding after each stage, supporting/challenging analytic decisions. This helped clarify the meaning of the concepts as they related to this data set, ensuring alternative interpretations for findings were considered, and increasing validity claims. We reflected on whether participants were reporting what they thought the University wanted to hear, such as when referring to the value of University supervisory support. This sometimes meant returning to the data to look for further evidence to support or contradict emerging claims. The multiple data sources provided rich opportunities for this.

A conceptual model of the relationship between constructs was generated (illustrated later as Figure 3). Together the stages of analysis offered the possibility to generate ‘thick description’ (Geertz, 1973; Ponterotto, 2006) in the light of the research questions. This was informed by, but also enhanced, understanding of the constructs when applied to BT training experiences, at least in England.

4.0 Narrative accounts of BTs’ social-capital-building

Narratives are presented for each BT comparing and contrasting social-capital-building processes. BTs were in school one for some or all of 13 of the 14 weeks between September and December and in school two continuously, excluding vacations, for 18 of the 22 weeks between January and June.

4.1 Frank

4.1.1 Starting the programme: tempted to try teaching

After graduating with a first-class Chemistry degree, Frank couldn’t decide whether to train as an outdoor pursuits instructor or a teacher. After a year in an outdoor pursuits centre he tentatively decided to train as a Science teacher; influenced by his parents, both educational professionals, as well as two long-term friends.

Frank began by making friends at his Hall of Residence, through sports and attending the local church. In these relationships (exhibiting bonding social-capital-building) the principal topic of discussion was lifestyle choices (with consummatory motivations).

4.1.2 In school one: bonding limited to peers as undecided about commitment to teaching

Frank used formal school and University systems of support to help prepare lessons and offer feedback on his teaching. When asked from whom he gained most advice and information he initially cited his parents, but soon referred to teachers with whom he shared classes.

I think I get most of my support for teaching from Gail and the head of department [also Frank's mentor] and Stan. Gail is very good as when I first taught for her she gave me a lesson plan and that was the thing I was most worried about (Frank, interview, December).

These formal relationships focused on developing his practice (related to instrumental motivations).

I would say [Frank uses these relationships for] advice and support in terms of the pedagogy so it's 'Teaching', 'How am I teaching it?', 'Where do I find this?' (Frank's mentor interview, December)

Frank turned to colleagues strategically: using Gail for support with lesson planning; his mentor for advice on University assignments and Stan for advice on behaviour management. Frank reported a less valued relationship with the Science club leader (Anju), which challenged his perceptions of the social capital to be gained from bonding with departmental colleagues. Although he and another trainee offered to help run this club, he felt Anju expected the BTs to take too much responsibility without any support.

Frank was aware of opportunities to bond with members of the department, including technicians, in the departmental preparation area but, unlike departmental staff, Frank divided his break times between departmental and central staff rooms. This was encouraged by the professional studies tutor⁴, offering weekly coffee and muffins for BTs centrally. This led Frank to bridge beyond the department and bond with peer BTs, with whom his main bonds of solidarity developed. These relationships were strengthened through meeting at professional studies sessions run by the tutor and by sharing lifts. Peer BTs offered Frank consummatory support, supplementing relationships with those beyond teaching.

⁴ The role of professional tutor in a placement school is to have an overview of BTs progress across ITE programmes and offer central support, usually through generic professional studies sessions.

4.1.3 In school two: bonding across the school, developing a sense of belonging

Frank's mentor in his second school placement confirmed that on arrival Frank appeared unsure about teaching as a career but that his attitude and commitment changed;

You can almost map his change in attitude by his attitude to the professional studies sessions. The fact that he started off quite cynically and quite reticent but now I know he is coming back in good humour having made good contributions (Frank's mentor interview, June)

Frank developed strong relationships with colleagues (through bonding social capital) by the end of the placement.

He has been doubling up on duties and taking his responsibilities to his Form⁵ very seriously...and that has placed him very centrally in the school...I know from my discussions with the senior technician that she has really enjoyed working with Frank. (Frank's mentor interview, June)

These changes in attitude can be explained by the strategies Frank used to become fully engaged in the life of the school. Significant for Frank was joining the Friday afternoon staff football sessions. From here he developed sociable, consummatory relationships, not only with members of the Science department, but also bridging to established staff across the school. This led him to help with after-school sports clubs and be invited to accompany whole-school trips. Frank explained that his relationship-building had been shaped by the greater approachability of staff;

I'm much more involved with my Form which is largely due to my Form tutor. I find her much more approachable than at [school one] (Frank, interview, June)

Frank now socialised mainly with school-based colleagues (including BTs), having built bonding social capital and, by the middle of this placement, only engaged with his University supervisor to fulfil the requirements of the programme. He referred little to other parts of his network. In-school relationships now met both his instrumental needs to develop practice and affective, consummatory needs for encouragement. Referring to the peer BTs with whom he shared lifts:

⁵ Forms are pastoral groups used to register and support pupils, which meet twice daily.

We talk about everything we've done that's good, we talk everything we've done that was a disaster... Occasionally we might offer advice on a situation... (Frank, interview, June)

The difference in Frank's network maps between schools one and two are shown in Figure 1⁶.

[Figure 1a and b here]

Crucially for Frank's retention as a teacher, Frank found that his identity as a sportsperson could be accommodated with one as Science teacher. Frank subsequently accepted a Science post (including some PE teaching) at this school.

4.2 Dawn

4.2.1 Getting started: a clear vision for becoming a Science teacher

Dawn had held a senior position as an industrial chemist abroad. When her husband's work brought the family to England she decided to retrain as a Science teacher. She was highly motivated and felt that this was a good time to change career. Dawn articulated, even when joining the programme, that her intention was to introduce school children to the ways scientists work.

4.2.2 In school one: bonding to develop practice through collaboration

Dawn developed a range of links in school one (Table 4).

[Table 4 here]

Dawn developed strong links with most of those with formal support roles including Georg, a BT she was paired with in this placement, and most of the teachers she shared classes with. She also made strong links with BTs met at professional studies sessions, including socialising with them beyond school. In particular she met Lance weekly to compare notes about how the programme met their needs as career changers. Dawn made an effort to meet other BTs through their University Hall but these did not develop as strong links, both because Dawn did not live there and as she felt little in common with the mostly younger students.

In density (Figure 2) Dawn's maps resemble Frank's (Figure 1).

⁶ Network maps in school two were drafted by BTs in March and revisited and revised in June.

[Figure 2 a and b here]

However, there are significant differences in the ways Dawn and Frank networked. Firstly in their motivation towards relationship-building, particularly with peers. From the outset Dawn sought opportunities to work collaboratively. Before the first placement she invited peer BTs home, consciously hoping to identify those with whom she could collaborate. She also actively sought out like-minded peer BTs in school placements.

No-one ever comes over to Science...but there is an area above the staff room where we can go...and professional studies usually starts 15 minutes late so that gives you some time to have a chat (Dawn, interview, November)

Frank developed a sense of solidarity with other BTs but used their support principally affectively to celebrate successes and share frustrations. Dawn sought BTs principally to develop her practice, instigating team teaching with peer BTs in both schools. Whilst both can be viewed as examples of bonding, Frank's motivations are more consummatory and Dawn's instrumental. Dawn expected that there would be mutual benefits, illustrated by her reflections on how she came to develop a series of cross-curricular lessons co-taught with Art BT Amy;

Well [Amy] was saying that she hadn't done any teaching, just observing at that point (Dawn, interview, November)

4.2.3 In school two: Bridging to resources as teaching competence is challenged

In Dawn's second placement she consulted a number of BTs about lesson planning and developed a particularly strong link with Mathematics BT Kim, with whom she shared lifts to work. She began to support some of Kim's lessons;

I'm TAing⁷ for her – because she's doing fractions now so it's not really of interest to me so I just said, 'Oh I'll TA for the last couple of weeks just to help her out (Dawn, interview, March)

They then co-planned and co-taught a series of lessons in the Mathematics department. Co-teaching across subjects was not something many other BTs on the programme engaged in and resulted from Dawn's individual approach to her development as a BT.

⁷ A TA (teaching or classroom assistant) is usually a salaried role in UK schools, offered to support students identified with special educational needs and does not require a teaching qualification.

Dawn also began to act as Chemistry tutor to recently qualified Mathematics teacher Sophie.

She wants to go back to college and do Medicine but only if she gets an 'A' in Chemistry. So I have actually seen her probably once or twice a week in the evenings...It's been a really good, in both directions, win-win (Dawn, interview, June)

A second difference between Frank and Dawn's relationship-building was that, although Frank developed strong links with both mentors, Dawn only developed an effective relationship with her mentor in school one. In school two she described her relationship with her mentor as;

not productive...she is too busy....I am expected to model her teaching and I am never going to be like that...[The feedback] is not helpful in that it rarely says you could have tried this or this (Dawn, interview, March)

Dawn felt that her mentor, and indeed most of her departmental colleagues, neither shared her vision for Science teaching, nor were supporting her development, therefore breaching the social capital norms she expected from a supportive department such as in school one. She only found one core member of the Science department supportive (Rick);

[Rick] is probably the nicest and he is much more relaxed about what happens in his class. If I had suggested can we just slot in a bit of argumentation...they would have said no but he was quite receptive to that (Dawn, interview, March).

As a result Dawn did not develop bonding relationships across the department in this school.

A third difference between Frank and Dawn's social-capital-building processes were that, although Frank made links across his second school, these were largely social and consummatory, compared to Dawn's instrumentally-motivated search for support for her teaching practice, particularly in school two, when Dawn was judged not to be meeting the teacher standards. The extra visit already planned for this study was used to formally offer additional support.

Dawn felt staff meeting in the Science preparation area were unapproachable and unwelcoming and began to spend non-contact time in the central staff or Mathematics areas. There she discussed her teaching with: two Science teachers who did not base themselves in the Science department; an established Geography teacher and BTs Kim and Sophie.

A final difference between Frank and Dawn is that Dawn reactivated links, bridging out from those in school. She made contact with Georg, the BT she had been paired with in school one, drew on her husband, an engineer, for specific practical equipment advice and consulted her sister-in-law (also a Science teacher)'s resources. Even before the problems were raised formally, Dawn began to call on her University supervisor more regularly (via her blog and email).

[Dawn] is increasingly contacting me for advice on lesson planning in a way that she didn't in [school one] and unlike others on the course at the moment. I know she is unhappy there. (researcher diary, 28th February)

She used these interactions to help her reflect on her teaching.

Just the same as last week! Have commented on your comment to last week's blog so you might need to read both (Dawn, blog 13th March)

Bridging out to a range of sources of support allowed Dawn to complement the support provided formally. She completed the programme successfully and took up a post-16 teaching post in a College where she felt staff shared her vision for teaching.

4.3 Harry

4.3.1 Getting started: A career change through necessity

Harry decided to retrain as a teacher after being made redundant as a commercial Chemist. He and his wife, an educational psychologist, had two young children. He travelled to work alone; in a car to the first school placement and by train to the second.

4.3.2 In school one: Instrumental use of formal links

As with Frank and Dawn, Harry had opportunities to develop links with those in formal support roles and, through professional studies sessions, with other BTs. However, he did not immediately make strong links with his mentor or shared class teachers. Harry's first network map distinguished between those 'relationships I am more hesitant about' and 'people who are most approachable'. Table 5 summarises his relationships in school one.

[Table 5 here]

When asked how Harry knew whether others were approachable or not he explained;

Body language, attitude, for example, Nisha...Even if she's busy, and you've both got time to say one line in reply, she makes that effort... (Harry, interview, November).

Nisha, despite neither holding a formal mentoring role nor sharing a class with Harry, offered regular advice to Harry when they met in the departmental staff area. As with Frank, Harry found others less motivated to offer support, for example shared class teacher Sereta:

One early lesson I did with Sereta, we didn't get the evaluation done until a while afterwards...I didn't push it as much as someone like Nisha who I felt I could have easily gone to (Harry, interview, November).

Harry interacted little with Sereta, despite continuing to share teaching with her. Harry also reported tensions with his mentor (Victor), finding it difficult to build a positive relationship. In part he perceived Victor to be too busy:

Sometimes Victor seems to be less approachable...I know he's busy with all his commitments, so sometimes I feel OK I'll wait for another time... (Harry, interview, November).

He also perceived Victor as overly critical in his feedback, finding his expectations too high and feedback unfair. He approached other departmental teachers for second opinions.

Harry, like Frank in school two and Dawn in school one, made strong links with technicians based in the shared departmental staff area in both schools (see Tables 5 and 6).

[Table 6 here]

These were instrumental relationships. Harry sought to benefit from the technicians' years of experience in supporting practical work and to ensure he used school systems optimally.

4.3.3 In school two: Bonding limited to individuals, even when teaching competence challenged

Harry's interactions with the chief technician (Eleanor) in school two were the most frequent and most valued of those with any individual:

She has been at the school for about 40 years so she has a huge knowledge to draw on of what works...Also how it is best to use the children to get them involved (Harry, interview, March).

Having previously worked as a lab Chemist he identified with the technicians and, although principally instrumental, these relationships were underpinned by a sense of solidarity. Another significant relationship, similarly consummatory, was with Wanda.

[Wanda's] another Chemistry teacher, another mature person into teaching so interesting to have her perspectives...She was often in the prep room, so we'd be having our breaks there (Harry, interview, June)

Harry's conversation log revealed that Wanda and he compared notes, discussed pupil behaviour and frustrations but not to formatively develop his practice.

In contrast with Frank and Dawn, Harry developed few strong relationships with peer BTs. He spent little time elsewhere in the school than in the Science department and did not share lifts. Although, like Dawn, when in this second placement Harry was judged to be weak in developing his teaching skills, unlike her, he did not bridge to extra sources of support. The extra visit built into this study was used to formally offer Harry support but he did not initiate additional contact with his supervisor.

Harry passed the programme but did not leave with strong references from school or University colleagues. Harry was felt to lack initiative in developing his practice, as revealed by his passive use of relationships to mobilise intellectual resources from his colleagues other than the technicians. Harry found it difficult to find a permanent post.

5.0 Reflecting on the evidence

5.1 BTs' social-capital-building experiences

All three BTs followed the same ITE programme simultaneously with similar support structures in place. However, they established different personal networks, including different types of relationships and different strategies for relationship-building. BTs' needs were met partially through support offered and partially through seeking support. The evidence for the three BTs is summarised in Table 7.

[Table 7 here]

The key differences related to:

1. BTs evaluations of the effectiveness of support;

2. Purposes for supportive relationships (either to develop practice and understanding, or as emotional support).

As anticipated through the ideas of Portes (1998) a possible explanation for these differences links to motivations to build relationships. Our evidence relates to BTs perspectives.

However, relationships involve two parties. Even though we incorporated a mentor interview, this study was not designed to consider the perspectives of others on relationship-building with BTs. This would be a useful focus for further study, perhaps building on the conceptual work of Mertz (2004).

Reflecting on our evidence led us to propose a model identifying two key processes for BT social-capital-building (Figure 3).

[Figure 3 here]

The first line of the model explains how BTs' cognitive needs about how to develop practice can be met through working and reflecting with others. BTs referred to using formal opportunities to develop relationships with established teachers and University supervisors to mobilise intellectual and decisional capital held by these professionals. These did not necessarily develop as strong links. BTs could access such capital resources when needed and without committing to developing the relationship further. However, being provided with training sessions and support roles did not guarantee capital mobilisation. All three BTs reported experiences (Frank and Anju; Dawn and her second school mentor; Harry and Sereta) where they had expected supportive relationships but, through losses of respect and trust, eschewed utilising these relationships. This limited their access to sources of capital held by these colleagues. A key factor was the role of trust, theorised from beyond the field of education to comprise three components (Heffernan, 2004; Sako, 1992; Wu et al, 2014) which can be used to explain how BTs evaluate their interactions with others:

1. Do others appear credible or competent? (as Frank reported for Stan and Gail)
2. Do others operate with integrity? (as Dawn reported for Rick)
3. Do others show benevolence or goodwill? (as Harry reported for Nisha)

These questions illuminate how BTs might assess what Harry referred to as the 'approachability' of others. Mentors were not always considered the most approachable colleagues in a school placement. Anyone, including other teachers, support staff and peer BTs, were possible resources for developing practice and the ability to 'think' like a teacher

(Wilson & Demetriou, 2007). This often relied on the BT in actively talking with or observing the practice of others. For these purposes instrumental social-capital-building seemed most important as some sense of mutual benefit could be attributed to many of these relationships, especially when working with peer BTs or mentors. The benefits to some of those school colleagues valued by BTs for their advice and ideas were not always evident. BTs spoke of their generosity, implying altruistic motivations.

The second line of the model explains how BTs' affective needs are met during this stressful year of developing as a teacher. As noted in Le Cornu's (2013) study of Australian BTs, if a sense of belonging developed during school placements, BTs' confidence increased and they began to 'feel' like a teacher (Nias, 1989). It takes time for such relationships to be established and, prior to this, pre-programme relationships were important in nurturing and caring for BTs. Subsequently, a BT's support network can meet their emotional needs as long as BTs interact with those who welcomed BTs. Strong bonds of solidarity, associated with consummatory social-capital-building, were noted with:

- peer BTs (e.g. Dawn and Kim);
- support staff (e.g. Harry and Eleanor);
- recently qualified teachers (e.g. Dawn and Sophie);
- more experienced departmental teachers (e.g. Harry and Wanda);
- members of other departments (e.g. Frank and PE colleagues).

These are with others outside formal support roles and yet are offering BTs what might be termed an 'endowment' (Putnam, 1995), an investment in them, even though the BTs are only transiently within their workplaces. Wu et al (2014) talk about the 'benevolence' component of trust demonstrated through offers of time, knowledge and encouragement without any obvious benefit to themselves.

The key factor in the effectiveness of relationship-building for practice development appears to be BTs' proactivity. This is something BTs can have some control over. In terms of developing strong relationships, important for developing BTs' sense of belonging to the profession and identity as a teacher, BTs are more reliant on others.

Active networking has been shown to provide sufficient resources to develop practice: Frank's competency in meeting teacher standards was never questioned. By strengthening relationships in Frank's networks in school two he gained the fuller benefits of both cognitive

and affective support; hence his growing commitment not only to becoming a teacher but also to that particular school. Dawn too was active in her networking. When this approach complemented in-school offered support, as in school one, Dawn showed that BTs can make good progress. When Dawn perceived limited formal support, as in school two, she showed that BTs can be resourceful in bridging to find new resources for ideas and advice. She also managed to develop sufficiently strong relationships to gain the emotional support needed to want to belong to the profession. When such networking proactivity is absent, Harry's case demonstrates how this limits a BT's ability to develop practice. He gained sufficient emotional support to want to commit to the profession but without having mobilised sufficient intellectual, and in particular decisional capital, to develop secure practice as a teacher. His references/affidavits from mentors and tutors were weak as a result and he found it hard to gain a permanent position.

Figure 3 should not be considered straightforward. Relationships in reality do not neatly fall into one or other category, may well satisfy multiple purposes (Coleman, 1988) and can change over time, giving different benefits to the BT. This has been shown by the decreasing significance of Frank's out-of-school colleagues and Dawn's use of bridging strategies to re-establish relationships when in school two. It can be predicted that the multiply beneficial relationships (represented as BTs' strong links) will be the most likely to be sustained into BTs' careers as teachers: This appears so, anecdotally.

5.2 Limitations of the study

This was a small-scale study and, although able to collect a rich evidence-base about social-capital-building, was limited to three BTs on one ITE subject-specialist programme for secondary school teachers in England. Similar studies with a wider range of BTs and/or courses would reveal a wider range of strategies used by BTs and experiences of support. In particular it would be interesting to see if there were patterns in strategies used between recent graduates and career changers.

Arguably a major limitation of the study was the ego-centric nature of data collection. Social capital relies on relationships *between* actors and therefore both sides of each relationship are important to their effectiveness. The research questions were deliberately focused only on the BTs and their experiences, a decision made principally because of difficulties in accessing other actors than the BTs. Exploring the perceptions of established colleagues in ITE

placement schools regarding their role in, and motivations towards, BT support would be worthwhile.

A further limitation to the study was the decision to merge the roles of the principal researcher with that of supervisor. While this gave almost continuous access to the BTs during the programme, the supervisor-BT relationship was one of those under study. This particular link may well have developed unrepresentatively to other supervisor-BT relationships. The supervisor had access to a wider range of data about these BTs than their peers and is likely to have influenced their support. The supervisor also saw BTs for an extra school visit as part of the study. In two cases, this would have taken place anyway as the BTs were identified as requiring additional support.

6.0 Implications of the study

A clear message from this study is that BTs can be active in gaining support towards their development as professionals through networking. They should be made aware that their attitudes and behaviours affect (positively or negatively) their access to resources of support and hence their development. To make the most of opportunities when meeting with and/or observing colleagues in formal situations, BTs will need to be receptive, ask questions and reflect on their experiences. BTs should not rely on support from formal roles but scope which established teachers are willing to share ideas for planning and help reflect on practice. The intellectual capital of knowledge and skills about teaching, along with the decisional capital about how best to employ this capital, is held by those with experience in the profession. BTs need to find trusting relationships, with willing practitioners, to access this capital. Relationships within which to mobilise capital do not have to be with experienced teachers. Peer BTs also hold relevant intellectual capital and can, through developing strong relationships, support practice development through collaboration. Together, these relationships support BTs in developing how to ‘act’ and ‘think’ like a teacher. If BTs develop strong links then they can also benefit from the chance to be reassured and encouraged. It is within these important relationships that BTs can explore their commitment to the profession, finding support to make the transformation into ‘feeling’ like a teacher.

The network mapping tool might be useful for identifying where capital resources for BT support are located (Fox et al, 2007). To increase their opportunities to develop strong links BTs could: share lifts into work (rather than travelling alone); spend time in central staff

areas (as well as local spaces) and; join after-school staff or student activities. In our English setting professional tutors have an important role to play in encouraging such activity. BTs should consider behaving counter-culture to the social behaviours of established colleagues if these represent ways of networking which limit their own social capital building opportunities.

BTs also need to appreciate that different micropolitical cultures should be expected in schools (Coldron & Smith, 1999). Although exploring these fell beyond the scope of data collection in our study they are no doubt significant to BTs experiences (Kelchtermans & Ballet, 2002; Ewing & Manuel, 2005). Kelchtermans & Ballet's in-depth study of one BT in Belgium concluded BTs need to be supported in developing 'micropolitical literacy';

'Put metaphorically, teachers learn to "read" the micropolitical reality and to "write" themselves into it' (Kelchtermans & Ballet, 2002, p756).

This will involve BTs in what a larger-scale review of BT's experiences described as 'forging connections and finding a place' (Ewing & Manuel, 2005, p9). By advising BTs about the potential for them to have some control over their networking BTs can feel empowered (Le Cornu, 2013) to develop a relational resilience (Le Cornu, 2013; Johnson et al, 2010), positively affecting their wellbeing as a developing professional (McCallum & Price, 2010).

It is insufficient to minimise BTs' negative experiences during ITE. As well as empowering BTs to be proactive, attention should be paid to those with whom they will interact. BTs need to be able to find colleagues, particularly in school placements, willing to offer support and who BTs find credible, act with integrity and offer some degree of benevolence (Heffernan, 2004; Wu et al, 2014). Teacher educators will need to help BTs navigate school cultures (Blase, 1988), which may restrict or act as opportunities for BTs' social capital building (Kelchtermans & Ballet, 2002; Ewing & Manuel, 2005).

Studies on effective ITE provision highlight the need for supportive cultures to complement formal roles (Hallam et al, 2012; Johnson et al, 2012; Villegas-Reimers, 2003). Supportive cultures were not universally experienced by BTs even in this limited study. Ewing & Manuel's review of studies into BTs' retention reported BTs aspirations are undermined by 'poor staff morale, deficit staff-room culture and the growing realisation that there might be endemic school-based...challenges' (Ewing & Manuel, 2005, p7). Solutions are offered such that BT development should be considered a joint enterprise by all those in school placement

settings (Clement & Vandenberghe, 2000), led by the school leadership team (Peters & Pearce, 2011), encouraging a collective responsibility for all teachers' wellbeing and professional learning (Le Cornu, 2013; Johnson et al, 2012). This will require a culture which will support novices and experienced staff in displaying a vulnerability about their practice (Cox, 2012) to allow them to reflect on this practice whilst maintaining mutual trust and respect.

Our attention to social capital processes supports this inclusive view of professional development, aligning with Hargreaves and Fullan's notions of developing all teachers' 'professional capital'; not just BTs (Hargreaves & Fullan, 2012). Conversely this sees BTs as holding human capital worth recognising (Hargreaves & Fullan, 2013);

'Our early career teachers flourished when they were able to participate in relationships which recognised them as new professionals who had something to offer the teaching profession' (Le Cornu, 2013, p11)

To ignore BTs' development as a potential resource for others leaves schools in danger of BTs developing without school colleagues' benefitting (Fox & Wilson, 2008). This phenomenon has been termed the 'Walkman nightmare' in which individuals are 'plugged' into personal training programmes without sharing their learning for the benefit of others (Schuller & Field 1998). Social-capital-building can benefit both parties and it may be that the seemingly altruistic school colleagues exemplified in this study were gaining benefits not yet captured, such as in job satisfaction or renewal of ideas for practice. Intervention studies investigating how to stimulate capital mobilisation through relationship-building across beginning and experienced teachers have been taking place in Germany (Makitalo-Siegl et al., 2011) and Israel (Brody & Hagar, 2011).

Hargreaves (2003) advocates the need for strategic thinking and practices for capital mobilisation, such that schools develop 'organisational capital'. This might relate to notions of schools developing as professional learning communities (Lieberman & Miller 2008; Sergiovanni 1999; Stoll & Seashore Louis, 2007). Schools used for BT placements could be evaluated as such.

7.0 Concluding thoughts

The study reports potentially different outcomes for the development of BTs' professional practice, depending on how they network and hence build social capital. BTs should not be passive in expecting ITE providers to provide sources of support but should look to a wide range of others to inform their development as a teacher. Social-capital-building is something BTs can be made aware of, become empowered to enact and will help them develop a resilience as teachers, which will endure beyond ITE (Chong & Lo, 2009; Day, 2008; Le Cornu, 2013; Mansfield et al, 2012; Tait, 2008). Not only is social capital important to BT retention (OECD, 2004), but it is important to BTs' recruitment into the profession. Whether BTs benefit from others who support them in 'feeling' like a teacher or not, will affect whether they become a teacher or not. The social capital developed will not only help them overcome the stresses and demands of ITE but will provide them with the self-efficacy and resilience to develop as professionals once employed. If we think in terms of their, and other teachers', ongoing professional development, professional capital (Hargreaves & Fullan, 2012) provides a useful framework for thinking about the importance of networking.

In this modern age networking is not restricted to those with whom teachers meet face-to-face, make phone calls to or email. There are newer opportunities for professionals to network using internet platforms and tools often termed together as 'social media', allowing teachers to form virtual networks with a wide range of others (experts, other professionals and commentators on the profession). These offer exciting new opportunities for support even before BTs train as a teacher (and hence have a potential role in recruitment) (Qualman, 2012) as well as once in the profession. They are not, however, used by all educational professionals and existing teacher attitudes to and use of these networks for their development as a professional are divided (Owen et al, forthcoming).

This study was of ITE provision within a school-University partnership set in a dynamic policy context (Cardini, 2006). Regardless of future partnership structures for ITE provision all providers need to be explicit about their responsibilities for BT support. School and Universities might consider explicit training for ITE and CPD leaders in both providing supportive cultures for BT relationship-building (Peters & Pearce, 2011) and encouraging BTs to maximise their own social-capital- building.

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