Teachers developing understanding of enquiry based learning

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Abstract

A Knowledge Transfer Partnership (KTP) project between an English state secondary school and a northern UK university from January 2008 to December 2009 was the first of its kind. It was designed to develop a community of enquiry within Key Stage 3 and a formative assessment framework for enquiry skills. Upon its completion, I moved from being the main researcher on the project to a position of senior leadership in another school. Here, I found that the contrasting experiences of leading a divergent approach to pedagogy in one school and then adhering to dominant discourses of performativity in another school created tensions between my personal beliefs about teaching and learning and the expectations of externally imposed agenda in UK education. My thesis is therefore motivated by a personal desire to explore whether the teachers with whom I worked during the KTP project experienced similar tensions and uncertainties when developing their understanding of enquiry based learning.

My conceptual framework comprises an evolving view of curriculum change through teacher professional learning and teacher agency. This complements the theme of underlying social and cultural issues which runs throughout my work. My research strategy is qualitative and my methodology is dialogic. My accounts of the research process and its findings are interpretive and validated in the form of feedback loops. Findings demonstrate teachers' theoretical understandings of enquiry. They also provide reasons why teachers include or omit enquiry from their teaching practice over time. Indeed, teacher agency is mostly 'internal'. Where it exists externally, teacher agency is often 'contractual'. Teachers come to terms with the dominant factors of their social and cultural contexts and reduce their pedagogic practice to 'pseudo-enquiry'. As further study, the concepts of 'internal' and 'contractual' agency are useful lenses for exploring curriculum change and understanding teachers' professional learning.

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Chapter 1. Introduction:
Positioning my research

I wonder whether we know enough about the concepts of power and control within the social and cultural contexts of teachers' professional learning. In my own case, I became aware of profound changes in my perceptions of teaching and learning a year and a half after I had been involved in an innovative Knowledge Transfer Partnership (KTP) project in a UK school, and that was because I found myself in a situation which required me to act on conflicting views of pedagogy. The aims, objectives and purpose of my thesis have formed as a direct result of my reflections on my involvement in the KTP and the manner in which I negotiated the two year period after its conclusion. Guided by my main and subsidiary research questions, I will explore the theme of teachers' developing understanding of enquiry based learning, which was central to the KTP project. However, this will not be all. I aim to uncover aspects of underlying social and cultural activity, which have either existed without detection, or which emerge because of the process of teachers' professional learning. My findings may assist teachers' perceptions of enquiry based learning in the future. They may also provide new perspectives of the concept of curriculum change in schools. My study comprises a number of themes. In addition to the concept of enquiry, issues of 'relationality' concerning social power and control and teachers' professional learning occur throughout this thesis. Within this introductory chapter, I present my perception of each of these themes in order to clarify my research position and my methodological and analytical preferences at later stages.

1.1 Knowledge Transfer Partnerships (KTP)

Knowledge Transfer Partnerships (KTP) was launched in 1975 as the Teaching Companies Scheme (TCS). Since 2007, the programme has been managed by the Technology Strategy Board. It is funded by fifteen UK government organisations and its primary aim is to support UK businesses wanting to improve their competitiveness, productivity and performance by accessing the knowledge and expertise available within UK universities and colleges (Knowledge Transfer Partnerships, 2013). Essentially, A KTP is

> 'a relationship formed between a company and an academic institution,
> which facilitates the transfer of knowledge, technology and skills to which
> the company partner currently has no access. Each partnership employs at
> least one Associate to work in the company on a project of strategic
> importance.' (*ibid.*)

The KTP project in this thesis ran from January 2008 to December 2009 and was part-
funded by the Economic and Social Research Council (ESRC) with the balance of the
costs coming from the school. The academic institution was a northern UK university.
The 'company' was Tableford School (a pseudonym), a state secondary school in
northern England located in an area of significant socio-economic deprivation. A high
proportion of pupils received free school meals and the number of pupils with special
educational needs was above average. In terms of its inspection outcomes, 'inconsistent
lessons' were a key feature of the 2004 school inspection report (Ofsted, 2004, p. 9).
Four years later, 'students enter the school with below average standards' (Ofsted, 2008,
p. 4) and there was 'too much variation between subjects in both standards attained and
students' achievement' (*ibid.*). This had a negative impact on the overall school
grading. By 2011, however, school inspectors reported that

> 'the drive to improve the quality of teaching and learning has been concerted
> and effective. Underpinned by a wide-ranging and imaginative programme
> of professional development for staff, the proportion of teaching that is good
> or better is rising, including in the sixth form.'
>
> (Ofsted, 2011, p. 4)

Historically, a subject centred curriculum at the school had been producing inconsistent
outcomes. Conventional school learning was of an insufficient quality, and the
Principal teacher was faced with a very urgent challenge of leading change in order to
improve standards. Designed to develop a community of enquiry within Key Stage 3
and a formative assessment framework for enquiry skills, the KTP project was an
innovative programme of pedagogical and professional development, which, if
successful, would help him achieve this aim because teachers were required to develop
their own understanding of enquiry based learning over a relatively short period of time.
A copy of the KTP project plan can be found in Appendix A (**p. 154**).

1.2 Aims and purpose of my research

I was the Associate for the KTP project at Tableford School. The post was for a fixed
term only and when the project ended in December 2009, I had to find another job. I

was appointed to a senior leadership post in a different secondary school, and began work there in January 2010. This new role typified the inherent tensions, which I have described in the previous section. I was unable to find a balance between monitoring and quality assurance on one hand, and meaningful teacher development on the other. For me, the contrast between systems and structures with people and processes was extreme. Indeed, the culture of the second school was characteristic of turnaround leadership (Leo *et al.*, 2010). Teachers' professional learning and development was 'mechanistic', following direct guidelines rather than 'organic' (Joyce and Showers, 1983), where people and cultures flourish (Fullan, 2009).

By January 2011, I was in a state of epistemological crisis (Leat *et al.*, 2012). Believing in a set of principles I developed during the KTP whilst having to deliver another was unbearable. I began to realise that as the KTP Associate, I had undergone an intensive period of profound personal development quite unlike anything I had ever experienced before. My perceptions were changing. Indeed, it seemed that I had embraced a new way of seeing the world. This was definitely something I was very keen to pursue in the form of my doctoral thesis. I resigned from my post as a senior school leader in February 2011 in order to focus on my studies. By June the same year, I returned to Tableford School and carried out a final series of interviews with the initial group of seven teachers on the project. I also worked in the school in a voluntary capacity. This allowed me to keep up to date with developments in education and continue to collect research data at the same time.

1.2.1 Research questions

My choice of research questions facilitates the exploration of issues faced by teachers involved in the process of developing enquiry based learning in their school. This is because I want to know whether their personal experiences involved internal tensions, which were similar to those I encountered as a result of moving from my role in the KTP project in school, primarily based on a divergent approach to pedagogy, to a senior position of responsibility (**p. 2**), which strongly reinforced the concept of 'performativity' (Ball, 2000) in education.

Figure 1: Main and subsidiary research questions

Main question:

How do teachers' perceptions of enquiry based learning shift over time?

Subsidiary question:

For what reasons?

1.3 Enquiry based learning

Students and teachers are aware of contrasting pedagogies in schools (Leat and Reid, 2012). Teacher control and learner passivity are dominant features of a 'normal' classroom experience (Stewart-Wingfield and Black, 2005). Learning is 'done' to students and knowledge is reduced to 'remembering what (…) teachers and textbooks have said' (Nystrand *et al.*, 1997, p. 16). This conventionally represents a teacher-centred 'transmission' model of teaching and learning (Biggs and Moore, 1993). Here, the teacher has authority because of their subject knowledge, relationships with students are formalised, and classroom discourse follows a prescribed structure of teacher initiation, student response, teacher feedback (Sinclair and Coulthard, 1975). Enquiry based learning follows a progressive pedagogical model, which is driven by questions, doubts, problems and uncertainties (Barron and Darling-Hammond, 2010). Students are provided with open, challenging and meaningful tasks. Teachers are required to develop a more flexible approach to planning so that their involvement is more responsive to students' learning. Feedback provokes thought so that understanding might be used to inform future learning contexts. Relationships between teacher and learner are reciprocal so that teachers participate in the learning process as well as instruct, and there is a high volume of student questioning. Conceptually, enquiry based learning draws from a range of mainly constructivist pedagogical theories. Students are encouraged to think critically as they are led through a series of questions (Paul and Elder, 2006). Learning is sparked by interest and has a 'real' purpose (Rousseau, 1921). Students use their prior knowledge in order to make new meanings (Piaget, 1970). Learning is socially constructed (Vygotsky, 1978). Students are actively involved in dialogue and their learning takes place through their own curiosities, discoveries, experimentation, reflection and further exploration (Bruner, 1996) as part of a learning community (Dewey, 1938).

1.3.1 The KTP model of enquiry based learning

Empirically, there are a number of essentially cyclical models of enquiry based learning (Morgan *et al.*, 2007; Deakin Crick, 2009; The National TASC Centre, 2010). Common to each model, however, is the need for a paradigm shift away from conventional understandings of school learning, represented by transmission (Biggs and Moore, 1993), towards an alternative view, in which subject content and competence have equal value (Claxton and Carr, 2004). The KTP model of enquiry included eight stages; gain attention, stimulate curiosity, identify the question or problem, explore, take action and/or answer the question, evaluate, make connections, and amend and/or self correct. It was supported by tools for thinking, 'Habits of Mind' (Costa and Kallick, 2000) and the concept of metacognitive skills and knowledge (Figure 2, **below**).

Figure 2: The KTP model for teachers developing understanding of enquiry
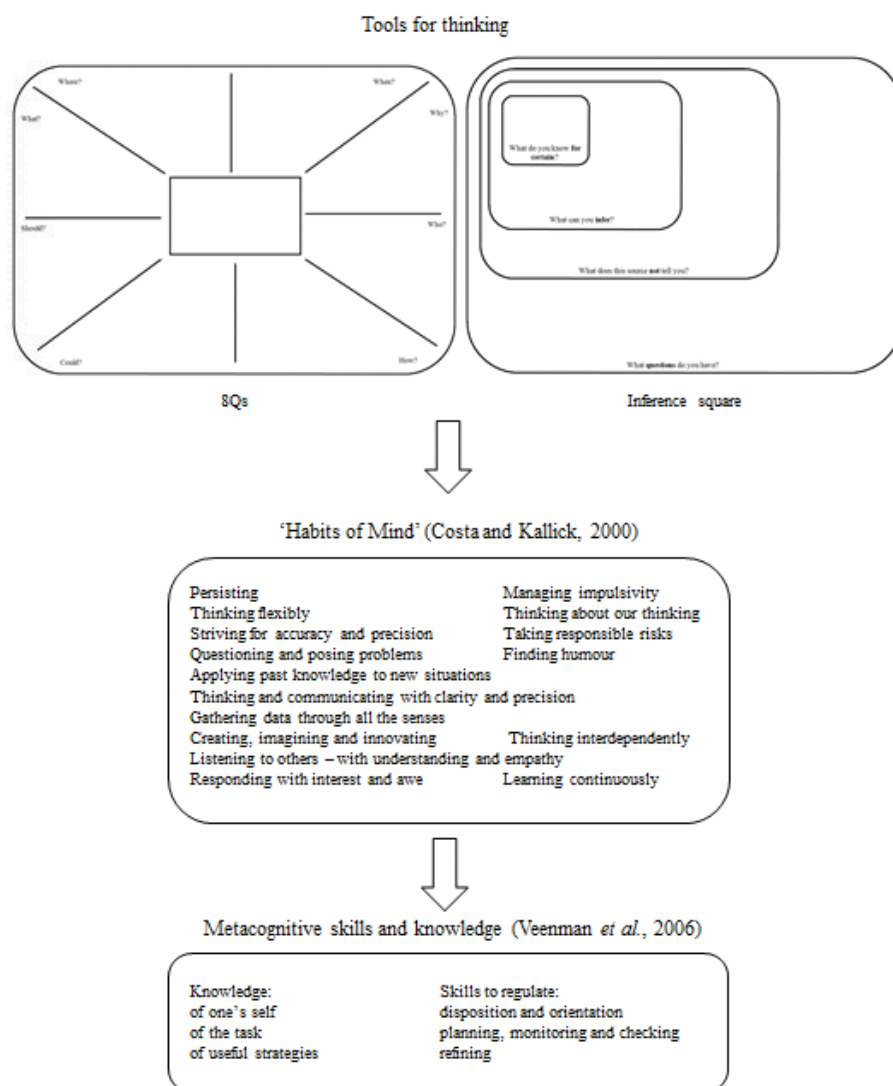
Teachers at Tableford School had had very little exposure to enquiry based learning prior to their involvement in the KTP project. For this reason, we devised a toolkit for enquiry comprising templates to promote thinking. These included an 8Q sheet and an inference square. From here, we adopted Costa and Kallick's (*ibid.*) 'Habits of Mind' to develop a language for learning in the school. 'Habits of Mind' contribute to a view of intelligence that involves 'not only having information but also knowing how to act on it' (*ibid.*). This was consistent with the perception of enquiry held by the KTP management team (**p. 10**). It also corresponded with our definition of metacognition, which was used as the framework for assessing enquiry skills.

1.4 Performativity in education

Enquiry based learning requires an alternative view of teaching and learning, which is overshadowed by a crippling political discourse of educational standards and performance in the UK at the time of writing (July 2013). Overwhelmingly, much of teachers' classroom practice is dominated by externally imposed agenda. In the UK, this is referred to as a culture of 'performativity' (Ball, 2000). It is used by government to *raise standards* in schools, which, in turn, are intended to raise the educational achievement of the mass of the population.

'Performativity' is a technology of power composed of public league tables, targets and inspection reports that regulate practice (Ball, 2000). Teachers perceive these as high stakes due to the potential for judgements to be made about the quality of teaching or a school's success (Ball, 2003). Indeed, Ball (2008) makes it clear that the 'performativity' culture is changing the meaning of social relationships and educational practice. He sees the emergence of a new language of accountability along with a shifting set of roles and identities regarding what it means to be a teacher. The result is a mixing of key messages regarding pedagogy to teachers in schools, which has become ever more acute over time. Faced with demands to produce autonomous learners (Ashes, 2012), schools are also held to account by market-driven policies and standards driven reforms (Leo *et al.*, 2010). Pressure has mounted to perform well in league tables and during increasingly rigorous inspections. This is all synonymous with greater central direction and control, which is reflected in teachers' fear of failure (Ashes, *ibid.*). As a result, teachers are more likely to adopt a pedagogy of 'absolutism' (Hammersley, 1992), where they have the greatest degree of control in their own

classrooms in order to deal with pressures. Although there is increasing evidence of enquiry based learning in science and humanities subjects, this approach presents tensions for teachers because it is not the dominant approach to teaching and learning in UK schools. Indeed, by describing five key challenges to its implementation, Edelson *et al.* (1999) present enquiry based learning as a pedagogical model which places particular demands on time and American teachers' thinking if they are to successfully transfer the locus of learning power to the students. In comparison, and certainly in the context of external pressures, the 'transmission' model of teaching and learning (Biggs and Moore, 1993) has definite appeal as it presents fewer perceived risks (Ritchie *et al.*, 2002) and it allows teachers to operate within a more comfortable zone of power and control. This is an important psychological position if they are to achieve their performance targets (Trautmann *et al.*, 2004).

1.4.1 Power, control and enquiry based learning

In the enquiry based learning classroom, teachers cede some control to students in order that learning becomes a process involving curiosity, questioning and feedback. Students identify topics of interest as well as methods of investigation, and there are high levels of engagement and motivation. Indeed, some researchers report an increase in teachers' capacity for innovation and risk taking as a result of their involvement in divergent approaches to pedagogy (Wall *et al.*, 2009), whilst others find it discomforting (Zembylas, 2003; Lingard, 2007). There is research evidence to suggest that teachers' personal, social, political and cultural contexts have a negative impact on their potential for adopting a divergent approach to teaching and learning (Trautmann *et al.*, 2004; Hargreaves and Shirley, 2009). Commonly, the concepts of time, teachers' expectations of students and their ability to engage with enquiry, the potential for not achieving specified learning goals, and the fear of the unknown feature in the literature on the practical applications of enquiry based learning in schools. As a result, it is interesting to note the conclusions drawn by Song and Looi (2012) of two mathematics teachers' experiences of enquiry;

> '(…) the teacher holding "innovation-oriented" beliefs tended to enact the lesson in patterns of inquiry-principle-based practices.' (*ibid.*, p. 155)

Horn and Little (2010) experience similar findings in their study of teachers' workplace interactions;

> '[teachers'] characteristic conversational routines provided different resources for them to access, conceptualize, and learn from the problems of practice.' (*ibid.*, p. 181)

Although working in very different contexts, teachers in these empirical examples were found to differ in the opportunities for learning they constructed through the manner in which they talked about expressed problems of practice, and the way in which they worked to resolve them. In both of these research studies, findings suggest that some teachers have a personal philosophy which is congruent with a divergent pedagogical approach, and would therefore be more likely than others to accommodate it within their practice.

1.5 Teachers' professional learning

In the current culture of 'performativity' (Ball, 2000), school improvement priorities often overtake the professional learning of individual teachers (Opfer and Pedder, 2011). Increasingly, teachers' compliance is enforced by targets and indicators related to raising standards, and the fear of external inspection (Perryman, 2006). As a model for professional learning, enquiry based learning encourages teachers to develop themselves by reflecting on their own lived experiences (Clarke and Hollingsworth, 2002; Timperley *et al.*, 2007). Learning is active (Stephenson and Ennion, 2012). Teachers decide the focus of their learning, move beyond the role of classroom 'technician' (Carr, 1995) and become 'facilitators' of their own learning and that of others (Day, 1999). Importantly, however, the number of secondary schools where senior leaders have relinquished control of teachers' professional development remains very low (Opfer and Pedder, *ibid.*). There are even fewer empirical examples of 'bottom-up' innovations led by classroom practitioners (Fullan, 2003); where the focus of development is driven by teachers' questions, doubts, problems and uncertainties.

1.6 Knowledge creation and knowledge transfer

My key responsibilities as the Associate on the KTP project were to deliberately engage teachers in a knowledge transfer process for change by implementing a socio-cultural model of professional learning in order to embed a community of enquiry. In the early stages, I drew on my existing interpersonal skills of coaching and mentoring, which I had developed during my teaching career, in order to not only raise teachers' awareness

of enquiry based learning, but also to lead them to action and then engage them in reflection. Much of my work drew on empirical literature by Lave and Wenger (1991) concerning building and developing a community of enquiry based learning practice and cultural historical activity theory (Engeström, 2001). Here, my main aim was not to involve teachers in a research process but to disturb their established routines and make change happen by bringing to the surface contradictions, which had I not been there, would have remained low priorities (Fullan and Watson, 2000) or even been ignored because of the dominant discourses in school (Bernstein, 1996). I led by example, I was pragmatic and I made no secret of my intention for others to be the same. Teachers worked on developing an assessment framework for enquiry skills which required their understanding of enquiry in order to improve the overall quality of teaching and learning in their school (Figure 3, **below**). As the KTP Associate, I mediated this process by initially introducing tools for thinking. From here, I used Costa and Kallick's (2000) 'Habits of Mind' to develop teachers' understanding of aspects of metacognition (Moseley *et al.*, 2005), which are central to the KTP model of enquiry (Figure 2, **p. 5**).

Figure 3: The model of knowledge creation and knowledge transfer during the KTP project

Mediating Artifacts:
KTP Associate
The toolkit for enquiry
'Habits of Mind' (Costa and Kallick, 2000)

Subject:
Teachers

Enquiry based learning

Object:
Assessment
framework
for enquiry
skills

Outcome:
Improved
quality of
teaching and
learning
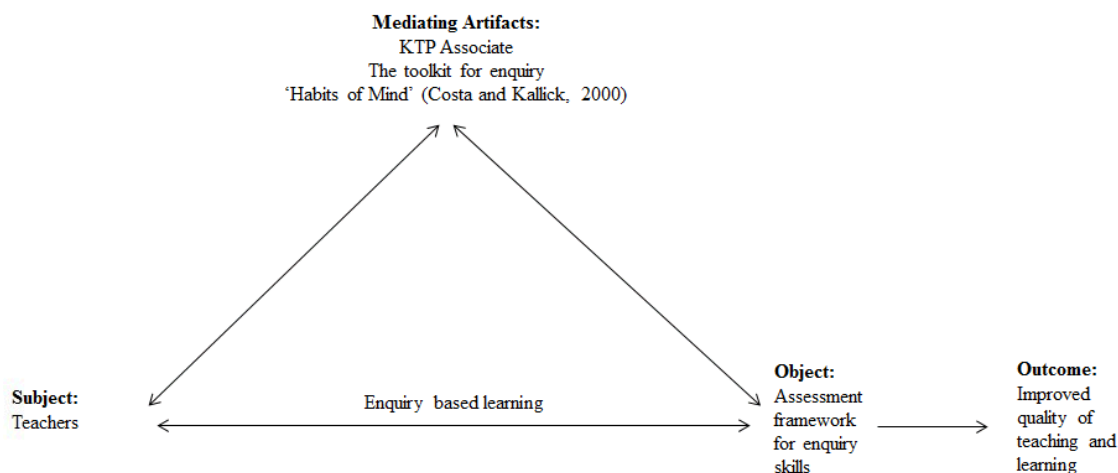
Going further, the assessment framework for enquiry skills was greatly influenced by the concept of 'divergent' (rather than 'convergent') assessment (Torrance and Pryor, 1998, p. 193). 'Convergent' assessment focuses on finding out if a learner knows or understands something or can perform a set skill. In this scenario the learner is subservient to the curriculum and their aim should be to learn the curriculum content. The role of assessment is to make reliable summative judgements about the extent to

which the learner has mastered the required knowledge and skill. Underpinning such a curriculum and assessment framework is an absolutist epistemology. Teachers, for the most part, derive their status from their subject knowledge and this implies formal relationships with students (although personalities intrude on this simple equation), and classroom discourse follows a pattern of 'Initiation-Response-Feedback' (Sinclair and Coulthard, 1975). 'Divergent' assessment proceeds from a different set of assumptions and primarily aims to determine what a student knows, understands or can do. It requires providing students with open, challenging tasks which generate meaningful experiences, but it is also dependent on teachers developing more flexible planning that is responsive to students' emerging learning and questions. Feedback and assessment are not founded on making judgements but on provoking further thought and constructing understanding that might be used metacognitively in future learning contexts. The relationship between the learner and the curriculum is mutually constitutive. Relationships between teacher and learner are more reciprocal, teachers facilitate as well as instruct, and there will likely be more dialogue, as well as more questions from students. A 'divergent' approach to teaching and learning is one in which competences are more likely to be developed and acknowledged as there is more scope for the integration of knowledge, cognitive skills, practical skills, attitudes, emotions, values, ethics and motivation (Leat and Lofthouse, 2012).

1.6.1 'Relational agency' (Edwards and D'Arcy, 2004)

As the KTP project progressed, the need to enable change remained a constant feature of my work, however my perceptions of the manner in which I carried this out began to shift. Edwards and D'Arcy's (2004, p. 147) affective notion of 'relational agency' is a useful framework for understanding this. It is

> '[the] capacity to engage with the dispositions of others in order to interpret and act on the object of our actions in enhanced ways.'

The model of professional learning reflected in the KTP project plan had the explicit expectation that I invest heavily in getting to know the teachers. As a result, our relationships became more open and trusting and I was able to identify teachers' individual perceptions of and reactions not only to enquiry based learning, but also to my interventions in the KTP project. Importantly, I was not alone in leading the project. I had weekly meetings with a professor of curriculum innovation (an 'expert' in his academic field), who wrote the overall plan (Appendix A, **p. 154**), and the Deputy

Principal (an 'expert' in his area of responsibility) in school. These were human resources at my disposal in order to 'behave fluidly' and 'responsively' to the individual teachers' needs, as well as my own (*ibid.*).

1.6.2 Dialectic and dialogic processes of knowledge creation

Wegerif's (2008) discussion of the significance of ontological assumptions also has a central place in this study because it encourages a 'dialogic' approach to knowledge creation. 'Dialogic' presents a radical challenge to the concept of teachers' professional learning, especially in relation to 'dialectic' processes. For example, 'dialectic' processes reflect the Vygotskian sociocultural tradition of knowledge creation; it is logical, it involves the synthesis of aspects of knowledge and is often mediated by the use of tools (Engeström, 1999a). Alternatively, drawing from Bakhtin's (1981) concept of 'dialogic' as the inter-animation of voices, synthesis does not always occur in the process of knowledge creation. Where it exists, mediation is through human relationships. Indeed, where 'dialectic' processes involve integration, unity and identity (Vygotsky, 1978), a 'dialogic' approach involves the inter-relationships of voices. Knowledge is fluid and developed through tensions as a result of the interplay of 'self' and 'other'. Crucially, 'dialogic' moves beyond the concept of 'dialogue' towards a position where voices signal intersubjectivities and reveal a polyphony of social, historical, cultural, political and personal perspectives. A further discussion of this philosophical framework continues in a review of the literature on concepts of power, control and change in Chapter 2 (**p. 14**). At this point, however, I draw on my personal experience of 'relational agency' and position 'dialogic' theory as a rich framework for accommodating themes of knowledge creation, knowledge transfer, dominance and social power, which enable or block teachers' developing understanding of enquiry based learning.

1.7 The structure of my thesis

The structure of my thesis supports my exploration of the concepts set out in this introductory chapter (Figure 4**, p. 12**). In Chapter 2 (**pp. 14-39**), I revisit the themes of enquiry based learning, teachers' professional learning, and power and control in order to develop a 'nested' theoretical framework for my work. Chapter 3 (**pp. 40-64**) presents the research methodology. Here, I address issues relating to ontology and

epistemology before I undertake a critical evaluation of the research designs and data collection methods available to me. A review of ethical issues completes this chapter. An integrated approach to analysis defines the framework for Chapter 4 (**pp. 65-78**). It addresses my decision to adopt an interpretive model for coding and exploring teachers' interview and video data. Chapter 5 (**pp. 79-116**) contains the findings of this research study. In Chapter 6 (**pp. 117-135**), I present a discussion of my findings in relation to the conceptual framework which I set out in Chapter 2. This includes aspects of methodology, theory and practice. Indeed, I rationalise the concept of 'relationality' within the context of teachers developing understanding of enquiry based learning by presenting their shifting perceptions in relation to the theme of power and control. I also provide examples of change within two emerging concepts for understanding teachers' professional learning and development (**pp. 127and 134**). Chapter 7 (**pp. 136-138**) serves to conclude my research. Here, I discuss what I have learned as part of my engagement in research process and what others can gain by reading about my work. Finally, I complete my thesis with recommendations for further research and development.

Figure 4: Key concepts supported by the structure of my thesis

'Symbolic control' (Bernstein, 1996)
'Dialogical self theory' (Hermans, 2001b)
'Relational agency' (Edwards and D'Arcy, 2004)

Change
Emerging concepts for understanding
teachers' professional learning;
Internal and contractual teacher agency
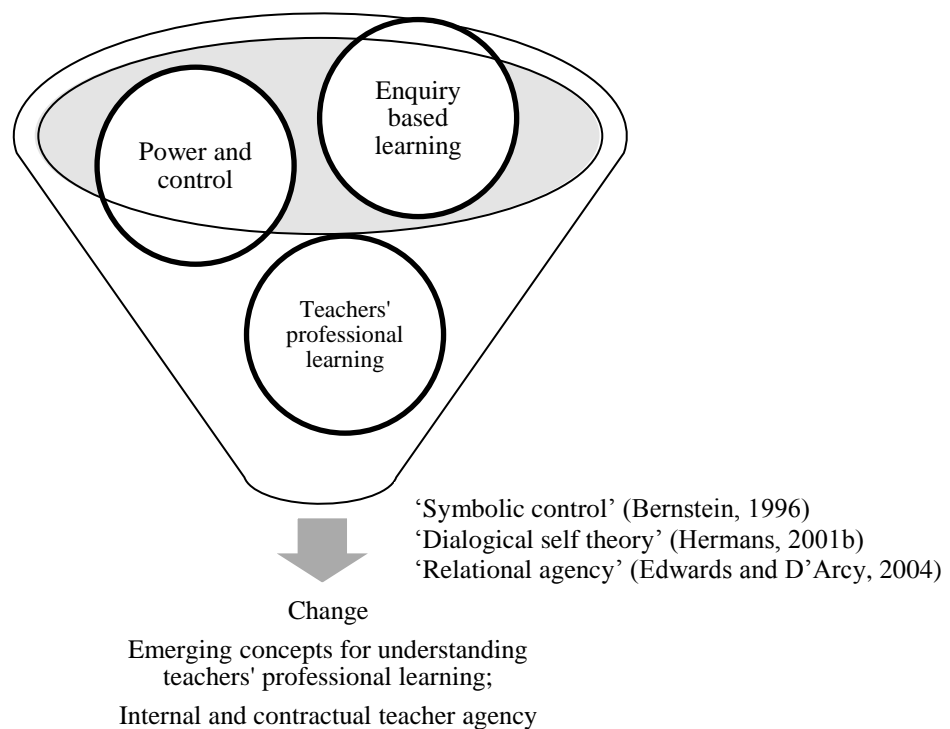
The concepts of fluidity and interaction are prominent features of my work, which I reinforce in the form of a particular referencing system. References to empirical work

conducted by other researchers outside of my study appear in normal type. Bold type refers to examples of my own work, which already appear within my thesis or which will appear at a later point. Codes (55/27 or -F[i], for example) signify multiple layers of activity which emerge during the process of analysing teachers' data, and I include further examples of aspects of teachers' developing understanding of enquiry as appendices. Limited by space within this thesis, I cannot include all of the data collected as part of my study. Instead, in order to provide the broadest selection of evidence, I offer the clearest examples of each aspect of teachers developing understanding of enquiry. My appendices contain at least one piece of evidence from each of the teachers in my research.

1.8 The research design

My choice of research design facilitates the exploration of concepts of power and control within teacher's shifting perceptions of enquiry based learning (Chapter 5, **pp. 79-116**; Chapter 6, **pp. 117-135**). Through employing an embedded single case study (Yin, 2009), I will present the most prominent aspects of seven secondary school teachers' developing understanding of enquiry based learning over a period of three and a half years as identified within my theoretical framework (Chapter 2, **pp. 14-39**). The main method of data collection is by semi-structured interview and I crystallise findings with evidence from video recordings of teachers' lessons (Chapter 3, **pp. 40-64**). My analysis is interpretive, although I consider teachers' evaluations of my findings in the form of feedback loops (Chapter 4, **pp. 65-76**). My principal framework is an adaptation of a quantitative model presented by Hermans (2001a). Finally, my research position as an 'insider-outsider' (Chapter 3, **pp. 43-45**) is contingent with my ontological viewpoint and supports a methodology which recognises the ''*embeddedness*' of teachers' truths' (Adelman *et al.*, 1980).

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Chapter 2. Literature Review:
Building a theoretical framework

I cannot begin to build a theoretical framework for my study without first referring to my exploration of the epistemology of enquiry in Chapter 1 (**p. 4**). Indeed, I suggest that this pedagogical approach is best suited to teachers whose personal philosophy is in accordance with principles of divergence and collaboration; principles which do not always feature in different forms of teacher training (Leat, 1995; Menter *et al.*, 2012), professional learning or development (Kennedy, 2005), particularly within the current cultural context of 'performativity' in UK schools (Jeffrey and Troman, 2012). Within this chapter, I will consider the influence of my research position on the empirical literature I have chosen for this review. Then I will draw on the work of one particular author in order to present empirical evidence of teachers' perceptions of curriculum innovation in UK schools. Finally, I will demonstrate how two additional frameworks for exploring the concepts of power and control provide a structure for my work.

2.1 The epistemology of enquiry and teachers' professional learning

I position enquiry based learning as a progressive pedagogical model, which is driven by questions, doubts, problems and uncertainties (Barron and Darling-Hammond, 2010). Kennedy (2005) suggests interesting possibilities regarding the format of teachers' professional learning in schools. Whilst accounting for dominant social and political structures which advocate performativity, she proposes a spectrum of continuous professional development models (Table 1, **p. 15**). Here, continuous professional development has three main purposes; 'transmission', 'transitional' and 'transformative' (*ibid.*). The 'transmission' model identified by Kennedy is appropriate for preparing teachers to implement reforms, which they have no capacity to influence. For example, when there are changes to examination specifications. The 'transitional' model allows a greater capacity for professional autonomy than the 'transmission' model because it is an example of an increasingly divergent approach to teacher development, where they have increased power and control. The 'transformative' model is the most divergent approach. It supports teachers' contribution to shaping a policy or strategy because they are granted greater freedom and ownership of change

within the internal hierarchy of their schools. 'Performativity' (Ball, 2000) does not disappear altogether, however, in the latter two models. The model of teachers' continuous professional development influences the degree of teachers' professional autonomy and personal change in relation to parameters of activity, which are defined by some external party, usually in a position of power (Kennedy, 2005, p. 248).

Table 1: Kennedy's (2005, p. 248) spectrum of teachers' continuous professional development models

Model of CPD	Purpose of model	
The training model	Transmission	
The award-bearing model		
The deficit model		
The cascade model		Increasing capacity for professional autonomy
The standards-based model	Transitional	
The coaching/mentoring model		
The community of practice model		
The action research model	Transformative	
The transformative model		

The model for developing teachers' understanding of enquiry based learning during the KTP project at Tableford School (Figure 3, **p. 9**) was certainly intended to be 'transitional' and, ideally, 'transformative': a small group of teachers was selected to develop an enquiry based curriculum with students in Key Stage 3, which was to continue after the end of the initial two year KTP period. Senior school leaders were not directly involved with the development of the project, however, because teachers were encouraged to develop their capacity for professional autonomy and personal change (Appendix A, **p. 154**). The KTP project was ambitious but it was not naïve, especially in terms the concepts of power and control so closely associated with 'performativity' (Ball, *ibid.*). For example, Lortie's (1975) concepts of 'presentism', 'conservatism' and 'individualism' made increasingly more sense to me as I grew more aware of social and political inferences on teachers' capacity for professional autonomy and change.

2.2 The influence of my research position and literature from the KTP project

I have described my involvement in the Knowledge Transfer Partnership (KTP) project between a northern UK university and Tableford School as a profound period of personal and professional development (Reid, 2008). Indeed, the KTP project plan was designed with the specific intention of creating opportunities for university research staff to positively influence the quality of teaching and learning in a school (*ibid.*). This

made it possible for researchers to have a direct involvement in current educational practice. As the KTP Associate, I was required to develop working practices centred on pragmatic collaboration; a fundamental belief held by all members of the university research centre, where I was based. The centre maintains its commitment to partnership working with a range of stakeholders in education, and in the co-creation and transformation of knowledge, both of which suggest a strong socio-cultural approach to learning (Bruner, 1996; Shulman, 2000). The literature selected to support the teachers during the KTP project in school reflects this epistemological bias. For example, staff were regularly invited to comment on 'think pieces'; brief extracts from empirical work advocating collaborative and experiential learning (Lewin, 1946; Kolb, 1984). My choice of literature for this review is influenced by a strong collaborative approach to learning, however it also reflects my increasing awareness of the high potential of human nature and self-realisation because of my personal lived experiences both during and after the KTP project.

2.3 An evolving perception of teachers' professional learning

The 'performativity culture' (Jeffrey and Troman, 2012) is impacting on all aspects of education, including the areas of teachers' professional learning, development and change (Priestley *et al.*, 2012b). Opfer and Pedder (2011) share a predominantly pessimistic view of teacher development in the UK. They identify 'lost promise' (*ibid.*, p. 3) in many schools where little account is taken of teachers' philosophies, relationships, dialogue, attitudes and emotions. This blocks personal and professional change. Indeed, such are the consequences of 'failure' within the current convergent educational context that the brightest glimmer of hope shines from high achieving schools, where the risk of underachieving is not so great (*ibid.*). The situation concerning initial teacher training is hardly any better. Leat (1995) was predicting the consequences of ignoring trainee teachers' talk before the turn of this century because it is by reflecting on their practice in dialogue with others that they recognise what has actually taken place in their classrooms. Menter *et al.* (2012) have drawn further conclusions about this area of teacher development in recent years.

It is with interest, therefore, that I refer to Priestley's (2011b) stratified view of society and his perception of social transformation (Figure 5, **p. 17**).

Figure 5: Priestley's (2011b, p. 229) perception of social transformation
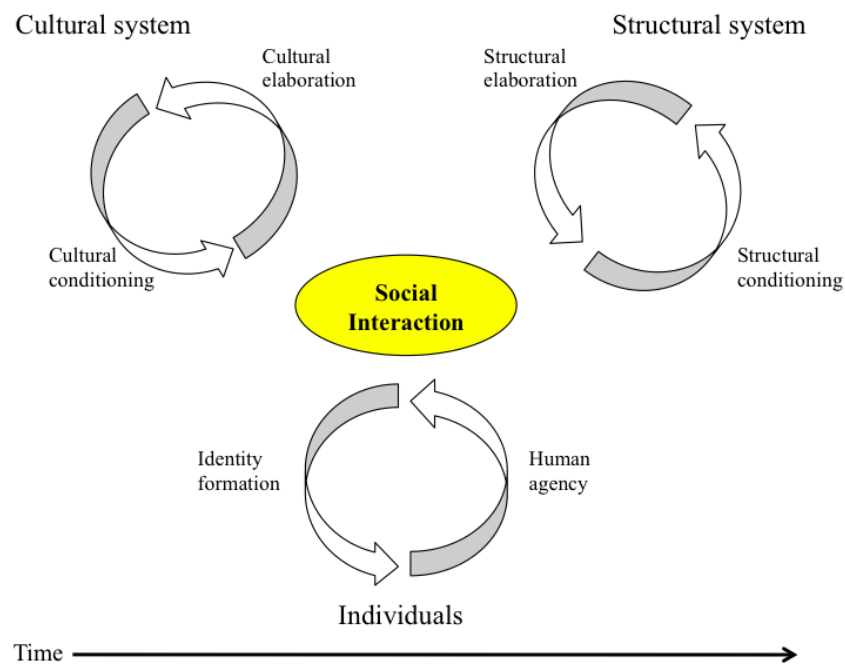
Using this model, I perceive schools as structural systems, where three different domains of reality accommodate varying degrees of social transformation (Bhaskar, 1978): the 'empirical' domain, 'the 'actual' domain' and the 'real' domain. The 'empirical' domain concerns our personal experiences and our perceptions of the lessons we have taught. In the 'actual domain', events happen whether we experience them or not. In secondary schools, many lessons take place at the time but we do not experience all of them even though we know they are happening. The 'real domain' is made up of underlying aspects of society, which can produce events in the world, and which can exist independently of our knowledge of them. These aspects are identified following a process of reflection. In much of his work, Priestley applies Archer's (1988) theory of 'morphogenesis'/'morphostasis' in order to explore the interplay of teachers' knowledge and beliefs within the context of curriculum change (Priestley, 2011a; Priestley, 2011b; Wallace and Priestley, 2011; Priestley *et al.*, 2011). As I interpret it, 'morphostasis' reinforces the status quo in conditions of change. 'Morphogenesis' includes interactions which reproduce or transform individual contexts. Essentially, the purpose of this theoretical model is 'transformative' (Kennedy, 2005). Underlying aspects of society influence social events and people's actions. Social interaction changes or preserves existing social events. It may also lead to new cultural, structural and individual forms (Archer, 1995).

Many of Priestley's findings suggest that teachers mediate the social events of their individual contexts (Supovitz, 2008). More specifically, teachers make individual responses to the contexts in which they find themselves, based on their existing knowledge and beliefs. As a result, they make choices concerning the extent to which they interpret or engage with curriculum change (Priestley and Minty, 2012). This is not always 'transformative' (Kennedy, *ibid.*) but rather reflects a spectrum of teacher agency. For example, Priestley *et al.* (2011) pursue the 'paradox of innovation without change' (*ibid.*, p. 266) and in their review of the 'Curriculum for Excellence' in Scotland, Priestley and Minty (2012) uncover a range of teacher engagement which is not dissimilar to Lortie's (1975) concepts of 'presentism', 'individualism' and 'conservatism'.

Through focusing on the area of teacher agency, Priestley (2012a; 2012b; 2012c) is now beginning to explore in more detail exactly *how* teachers act (or do not act) in the context of curriculum change. For example, some of Priestley's findings mark a shift away from socio-cultural theory and towards pragmatism (Priestley *et al.*, 2012a), although these ideologies are compatible. This has uncovered new layers of social and political activity involving concepts of time and space, power and control, and the nature of human relationships within the context of curriculum change. Indeed, Priestley's work is beginning to accommodate interactions of 'self' and 'other', and implications for exploring the concepts of 'transition' and 'transformation' (Kennedy, *ibid.*) within dominant social and political structures of 'performativity' (Ball, 2000) in schools.

Priestley's research maintains a focus on aspects of social interaction, yet there is also evidence to suggest a gradual elaboration of an interest in 'relational resources' (Priestley *et al.*, *ibid.*, p. 14), and a more ecological view of agency (Biesta and Tedder, 2007), when schools and teachers embark on curriculum change. Relationships vary in terms of 'hierarchy', 'reciprocity', 'symmetry', 'formality', 'strength' and 'frequency' (Priestley *et al.*, 2012a). Conceptually, the culture of teacher agency remains collaborative, however it also involves multiple dimensions of time and space, which manifest themselves in a 'chordal triad' (Emirbayer and Mische, 1998), comprising three dimensions (Figure 6, **p. 19**).

Figure 6: Priestley *et al.*'s (2012a, p. 5) interpretation of the 'chordal triad' (Emirbayer and Mische, 1998)
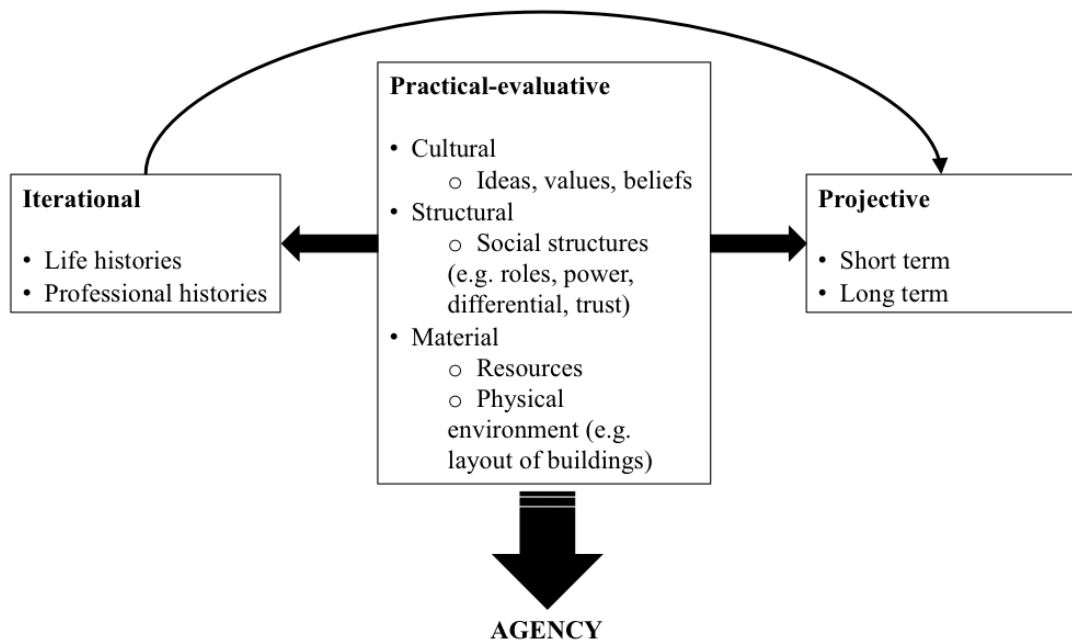
Within the 'chordal triad' (*ibid.*), the 'iterational' dimension relates to teachers' life histories and professional histories. From my perspective of critical realism (Bhaskar, 1978), this is the 'empirical' domain and it relates to past experiences. The 'projective' dimension involves potential long term and short term outcomes of the inter-relation of the 'iterational' dimension and the 'practical-evaluative' dimension. In this sense, it relates to the future. Finally, the 'practical-evaluative' dimension relates to both the 'actual' and 'real' domains of critical realism, since it includes cultural, structural and material aspects which may exist with or without teachers' knowledge of them. The cultural and structural aspects of the 'practical-evaluative' dimension of teacher agency are particularly interesting concepts for my research because they create opportunities to explore the underlying social and cultural aspects of teacher agency as they develop their understanding of enquiry based learning, especially in relation to my role as KTP Associate; a key structural and 'relational' agent for change (**p. 10**).

2.3.1 Critique

Much of Priestley's work provides a helpful conceptual framework for this research study. In particular, I find his perception of teacher agency as 'the capacity of actors to critically shape their responses to problematic situations' (Biesta and Tedder, 2006 in Priestley et al., 2012) useful because it hints at concepts of power and control as well as

the notion of 'relational agency' which are explicit to the theories of knowledge creation and transfer, outlined in my introductory chapter (**p. 8**). Priestley's definition represents my own understanding of teacher agency because of the concept of interaction. There are some crucial differences in our work, however, and I believe it is important to clarify these. Firstly, although we both claim to be conducting research into curriculum change in UK schools, our contexts are quite different. In recent years, Priestley's research has been based in Scottish schools. My own work was carried out in a secondary school in England. Since devolution, the Scottish government has developed a national curriculum, which is not the same as the policy in England. Indeed, a number of Priestley's journal articles relate to the implementation of national policy in schools. This research study concerns a very different model of policy implementation and there are also methodological differences (**pp. 40-64**).

2.4 Epistemologies of change within a performativity culture

Through the lens of critical realism (Bhaskar, 1978), Priestley acknowledges the impact of the three domains of reality in social contexts on his research studies. Some of his findings provide examples of teachers who have undergone personal 'transitions' or 'transformations' (Kennedy, 2005) within a context of curriculum change, however others do not. In these cases, Priestley makes reference to the concept of a 'gap' (Supovitz, 2008). The 'gap' exists at the level of the individual teacher and it has the potential to influence their personal experiences of 'iterative', 'practical-evaluative' and 'projective' domains of reality, and ultimately their agency. I suggest that, through the lens of Priestley's divergent and evolving concept of teacher agency, teachers' developing understanding of enquiry based learning can be better understood by exploring their capacity to close the gap between dominant and non-dominant perceptions of reality (Bernstein, 2000) regarding curriculum innovation and change.

2.4.1 Curriculum innovation and change

In England,

> 'the National Curriculum sets out a clear, full and statutory entitlement to learning for all pupils up to the age of 16. It determines the content of what will be taught and sets attainment targets for learning. Its also determines how performance will be assessed and reported.'
>> (Qualifications and Curriculum Authority, 2004, p. 3)

Recently revised to prolong the age of participation in compulsory schooling, and provide greater prescription of content and expected outcomes, the National Curriculum is organised into blocks of years called 'Key Stages' (KS). There is a 'programme of study' for each subject; English, Maths, Science. This describes what children should learn. Each subject has eight 'attainment targets'. At the end of each key stage, each child's performance is formally assessed in relation to the attainment targets to measure progress. I am not alone in perceiving the national curriculum in England as a structure which reinforces the concepts power and control within a 'performativity' culture in UK education (Jeffrey and Troman, 2012). Indeed, Miettinen (1999) goes as far as to suggest that the school curriculum contains hidden roles and relations which prepare students for the obedience necessary in the hierarchical power relations in the wider context of work life and society (*ibid.*, p. 328). From this perspective, it is hardly surprising that 'bottom-up' attempts at curriculum innovation (Fullan, 1995) are doomed to 'predictable failure' (Sarason, 1990) and that collaborative working practices become 'contrived' (Hargreaves, 1992), because of a gap involving teachers' perceptions of accountability, which have become deeply rooted in society and are difficult to shift (Fisher *et al.*, 2000; Berger *et al.*, 2005) because of underlying aspects of power and control.

Power and control are not new concepts either in society or in education (Bernstein, 1975; Foucault, 1980; Bourdieu, 1998). They have become more pressing, however, because the culture of 'performativity' in UK schools (Jeffrey and Troman, *ibid.*) limits the possibilities for teacher agency in curriculum innovation. For example, the national curriculum in England typifies Bernstein's (1977) 'collection' curriculum. Here, there are clear boundaries between subjects, and teaching follows a traditional model (Sinclair and Coulthard, 1975). From this perspective, teachers are powerful harbourers of knowledge. Their relationship with students is hierarchical and students are perceived as 'ignorant with little status' (Bernstein, 1977, p. 82) until proved otherwise in terms of attainment levels.

2.4.2 An epistemological gap

By exploring Emirbayer and Mische's (1998) concept of the 'chordal triad', Priestley *et al*. (2012a) have uncovered individual, social, cultural and political aspects of power and control in schools . Within this section, I will consider Bernstein's (1996) theory of

'symbolic control' as a further rationalisation of issues of power and control in teachers' individual, social, cultural and political contexts. It is appropriate to this research study because the current 'performativity' culture in schools in England challenges the validity of enquiry based learning as a pedagogical model (Leat *et al.*, 2012). Going further, Bernstein's (*ibid.*) theory also provides a useful meta-language for describing how the dominant 'convergent' (Pryor and Crossouard, 2008) discourse of teaching and learning is communicated via different modalities of power and control, and how these compare to the case of enquiry.

Empirically, 'symbolic control' is evidenced by the concept of 'pedagogic practice*'* (Bernstein, 2000, p. 3). 'Pedagogic practice*' (ibid.*) relates to how power and control exist and are communicated in a social context. It includes but is not exclusive to schools, teachers, teaching and learning. Indeed, Bernstein names relationships between doctor and patient, architect and planners as further examples of 'pedagogic practices' (*ibid.*). They are governed by codes of 'classification' (power) and 'framing' (control) and include principles of 'pedagogic discourse' and the 'pedagogic device'. Importantly, the theory of 'symbolic control' presents opportunities for social and cultural change through 'cultural production' (*ibid.*). 'Cultural re-production' and its conceptual antithesis, 'cultural production', include issues of social dominance, knowledge and consciousness. In the case of a school, 'symbolic control' and 'cultural re-production-production' exist where patterns of dominance affect the type of knowledge which is accessed, and how that knowledge impacts on consciousness. Historically, the curriculum and the models of teaching, learning and assessment have represented varying models of dominance. Indeed, Bernstein (*ibid.*, pp. 56-58) uses 'the accelerating role of state intervention in education from the late 1970s' under the Thatcher regime to exemplify this. Currently, the strength of 'symbolic control', and its resulting concept of 'cultural re-production-production', is evidenced in the field of education by government commissioned reviews of the national curriculum at primary and secondary level, local authority intervention in 'failing' schools, performance league tables and national tests for pupils at the end of Key Stage 2, to name but a small number of examples.

It is important to remember the purpose of Bernstein's (1996) theory of 'symbolic control'. With an interest in the social struggles encountered by the working class, it

includes opportunities for them to overcome middle class dominance. Regarding 'symbolic control' and the concept of 'cultural reproduction-production', the current climate in schools is one of debate around the form and function of schools, curriculum, teaching, learning and assessment. However, dominance is not absolute and there are opportunities for decision making which affect change. Bernstein demonstrates this in an echo of Dewey's (1916) work on the role of school and society. He calls for an 'autonomous space for the construction of curriculum and the manner of its acquisition' (Bernstein, 2000, p. 57). This space is available 'for pedagogic appropriations at both secondary and primary levels, not subject to direct state regulation' (*ibid.*).

As a theorist and researcher, Bernstein's primary interest lies in examining issues facing the social working class. Knowing this, it is inevitable that he would have at some point devised a structure for portraying issues of power and control within a conceptual framework. In the introduction to his chapter on pedagogic codes and their modalities of practice, Bernstein confirms his 'deliberate choice to focus sharply upon the underlying rules shaping the social construction of pedagogic discourse and its various practices' (Bernstein, 2000, p. 3). In doing so, he confirms the intention which remained his main concern throughout his work; to provide and create models for the generation of specific descriptions about issues relating to power and control. In fact, Bernstein's (1996) conceptual framework operates codes of 'classification' and 'framing'. I provide practical examples of them in the text which follows Figure 7 (Bernstein's (2000, p.10) metaphor of a temple, **p. 25**). 'Classification' relates to the concept of power and concerns the structure of social contexts, which Bernstein compares to 'boundaries' (*ibid.*, p. 5). 'Classification' provides limits; 'the nature of social space: stratifications, distributions and locations' (*ibid.*, p. 12). In terms of the way in which power and control are communicated in a social context, 'classification' relates to the *what*. 'Framing' involves the nature of social relationships and is essentially about *who* controls what (and *how*) in relation to social boundaries. Both 'classification' and 'framing' have modalities, which range from 'strong' to 'weak'. In his responses to criticism, Bernstein (*ibid.*, p. 197) makes clear that neither 'classification' nor 'framing', nor even their description as 'weak' or 'strong' should be considered dichotomous. Indeed, although they exist together empirically, Bernstein suggests that they may be studied separately. Therefore, Bernstein offers these terms in order to exemplify a range of perspectives, which have the capacity to change over

time. 'Classification' and 'framing' ('strong' and 'weak'), which make up Bernstein's (1996) model for the discussion around issues relating to power and control, provide the foundation of a possible framework for exploring teachers' shifting perceptions of enquiry based learning.

From Bernstein's perspective as a researcher and social theorist with an interest in the domination of the working classes by the middle classes, 'strong classification' and 'strong framing' represent the strength of the dominant middle class. They exist where social boundaries are in evidence and clearly communicated in terms of 'desirable' behaviour. 'Weak classification' represents the potential capacity of the 'weaker' working class. It creates social structures where it is possible to permeate strong boundaries. 'Weak framing' of this kind of structure leads to opportunities for the voices of the lower social classes to be heard: for innovation and social change. In Bernstein's own words, 'where we have strong classification, the rule is: things must be kept apart. Where we have weak classification, the rule is: things must be brought together' (*ibid.*, p. 11).

2.4.3 'Classification' and 'framing' in the school context

Bernstein uses the metaphor of a temple (Figure 7, **p. 25**) to apply the modalities of 'strong' and 'weak' 'classification' and 'framing' to the social context of a school (*ibid.*, p. 10). In the first example of the temple (A), the structuring of subjects (for example, English, Mathematics, Science, French, and History) creates an explicit hierarchy. 'Classification' is 'strong'. The school Principal occupies the top position and is followed by his senior leadership team, heads of department, teaching staff, and, finally, students. 'Framing' is 'strong' where the nature of relationships are controlled from the top of the organisation downwards. For the most part, teachers operate within their own classrooms and within their own departments. The second example of the temple (B) symbolises 'weak classification' and 'weak framing'. Structurally, there are opportunities for collaborative working across classes and across departments. The control of power is more widely distributed, from the bottom up, because teachers and students work collaboratively, and relationships take on a different form from contexts of 'strong framing'. In terms of Bernstein's (*ibid.*) theory of 'symbolic control', enquiry based learning is an example of 'weak classification' and 'weak framing' because it creates non-hierarchical communities where the flow of discourse is not

constrained. 'Weak classification' and 'weak framing' present alternative or additional divergent ways of teaching and learning.

Figure 7: Bernstein's (2000, p. 10) metaphor of a temple
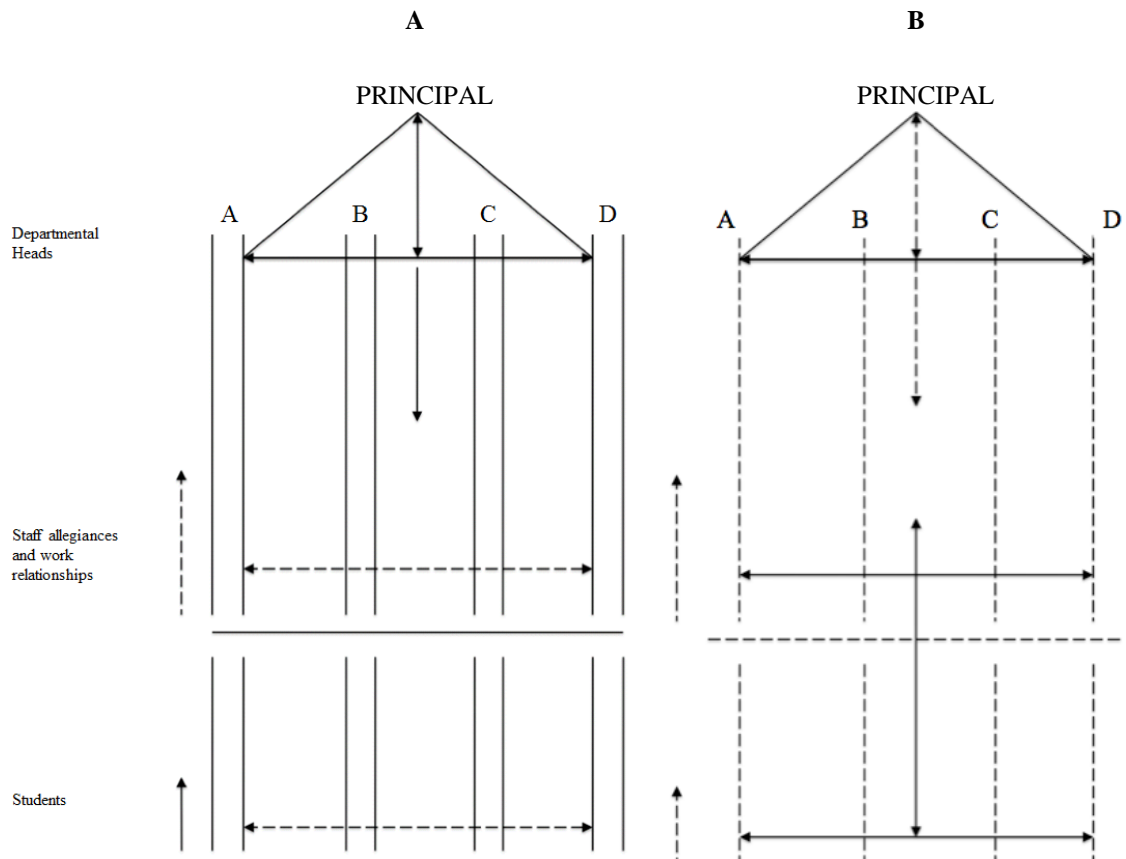
Key: Continuous lines represent strong boundaries, continuous arrows represent direction of strong relationships. Dotted lines represent weak boundaries and dotted line arrows represent direction of weak relationships.

In terms of identifying emerging underlying aspects of society which affect teacher agency when developing their understanding of enquiry based learning, Bernstein's (*ibid.*) theory of 'symbolic control' is particularly helpful because it considers 'pedagogic practice' from internal and external perspectives or influences. For example, when studying the relationship between power and control in school, external influences can be evidenced by the local authority, the governing body, parents, inspection agencies, and national education policy. Internal influences come from the Principal, teachers, and students. From the perspective of a classroom teacher, external power and control are communicated by the Head of Department, other classroom

teachers, the programme of study, and the performance management structure, for example. Internal power and control come from students and the teachers themselves.

Going further, Bernstein (*ibid.*) recognises the need to develop a meaningful language for describing and understanding the layers of social complexity as part of 'pedagogic practice'. 'Strong' and 'weak' 'internal' and 'external' 'classification' and 'framing' are represented by the following codes (Table 2, **below**);

Table 2: Bernstein's (1990) codes for describing and understanding layers of social complexity

Code	Description
C	Classification
F	Framing
+	Strong
-	Weak
i	Internal
e	External

Bernstein arranges them in the following way (*ibid.*, p. 187);

$$\pm C^{i\text{-}e}/\pm F^{i\text{-}e}$$

An example of 'strong external classification' would be presented as '$^{+}C^{e}$'. 'Weak internal framing' is written as '$^{-}F^{i}$'. Within Bernstein's (*ibid.*) theory of 'symbolic control', it is anticipated that where there is an acceptance of the dominant social discourse, codes of 'internal and 'external' 'classification' and 'framing' are in harmony. This is an example of 'cultural production' because it maintains the existing social system;

$$\text{'}^{+}C^{e}/^{+}F^{e} \; // \; ^{+}C^{i}/^{+}F^{i}\text{'}$$

'Cultural re-production' occurs when 'classification' and/or 'framing' becomes 'weaker';

$$\text{Example A: } \text{'}^{+}C^{e}/^{+}F^{e} \; // \; ^{-}\mathbf{C^{i}}/\mathbf{F^{i}}\text{'}$$

$$\text{Example B: } \text{'}^{+}C^{e}/^{+}F^{e} \; // \; ^{+}\mathbf{C^{i}}/\mathbf{F^{i}}\text{'}$$

In example A (**above**), 'external classification' and 'framing' are 'strong' but 'internal classification' and 'framing' are 'weak'. Empirically, this is evidenced where the distribution of power and control in school facilitates collaboration (and 'cultural

production') instead of reflecting the dominant social discourse from outside school. Decisions are made at a school level to operate a different system to the 'desired' model (Stephenson and Ennion, 2012). In example B (**p. 26**), the code denotes an internal school system which follows the 'desired' ('external') hierarchical social model, but this is controlled creatively. Through 'weak framing', control is distributed, rather than dictating what should be done. The second example represents the apparent modalities of 'classification' and 'framing' at Tableford School at the beginning of the KTP project (**pp. 1-2**). Contextual factors relating to improving performance in national examinations at the end of Key Stages 4 and 5 require a hierarchical structure of subject areas in order to monitor student progress appropriately. However, the Principal also recognises the need to improve the quality of teaching and learning from within his school and he encourages a team of seven teachers to explore and develop enquiry based learning in partnership with professionals from outside. In doing this, the Principal creates a conflicting context of 'strong internal and external classification' and 'weak internal framing'. Teachers at classroom level have the power to control the development of enquiry based learning in their school but they may be bound by the wider social context.

The extent to which teachers will develop their understanding of enquiry within my study involves Bernstein's concept of 're-contextualisation' (Bernstein, 2000, p. 41). 'Re-contextualising rules' exemplify interaction of 'instructional discourse' and 'regulative discourse' in social contexts (*ibid.*, p. 31). 'Instructional discourse' creates 'specialised skills and their relationship to each other' (*ibid.*, p. 32). 'Regulative discourse' is a moral discourse, which 'creates order, relations and identity' (*ibid.*, p.32). The interaction of the 're-contextualising rules' of 'instructional discourse' and 'regulative discourse' is 'pedagogic discourse'. Within this research study, features of 'pedagogic discourse' help in identifying how teachers structure enquiry based learning in their classrooms and how they interpret and communicate the concept of control (Table 3, **p. 28**).

Table 3: Features of Bernstein's (1996) 'pedagogic discourse'

'Re-contextualising rule'	Empirical evidence in school (following Bernstein)	Empirical evidence in enquiry based learning
'Instructional discourse'	pace of instruction, sequencing of topics/tasks/lessons, student working arrangements, relationships	negotiated in accordance with principles of collaboration and a student centred approach talk is collaborative rather than hierarchical.
'Regulative discourse'	ethos, vision, morale	

Some authors have used Bernstein's (*ibid.*) theories of 'symbolic control' and 'cultural re-production-production' to explore underlying factors within areas of teacher activity in schools (Morais, 2002; Ensor and Hoadley, 2004). For example, codes can help to interpret implicit social and cultural issues when the strength of 'classification' and 'framing' are at odds. This involves the concept of a 'mismatch' or 'discursive gap' (Bernstein, 2000, p. 30). The 'discursive gap' operates at the level of the individual. In my study, this is the teacher. Essentially, the 'discursive gap' highlights the importance of 'framing' within Bernstein's theory of 'symbolic control' because it concerns the way in which control is communicated. For example, the 'gap' occurs in teacher agency when their teachers' interpretation of the discourses relating to power and control are at odds. As a result, teachers may choose to disengage from the process of developing enquiry, or enable very little change (Priestley *et al.*, 2012b).

2.4.4 Critique

Bernstein's work is not without criticism. Indeed, in his reflection on Bernstein's life, friend and mentee Alan Sadovnik (2001) reports allegations of adhering to deficit theory concerning the working classes, complex and difficult texts, a theoretical overlap with Pierre Bourdieu (1998), and a lack of empirical testing as the main conceptual and methodological flaw to his work. I add to this Bernstein's apparent disregard for the complexity of human emotions within his coding system. Nonetheless, the theory of 'symbolic control' provides further structural and underlying issues to add to Priestley *et al.*'s (2012a) interpretation of Emirbayer and Mische's (1998) 'chordal triad'. It also provides a meta-language for exploring the concept of teacher agency within a 'performativity' culture.

2.5 The role of dialogue

The process of considering Bernstein's theory of 'symbolic control' leads me to re-evaluate the concept of 'framing' and the role of dialogue within the process of teachers' developing understanding of enquiry. For example, I suggest that Priestley's empirical literature, which I have selected as part of my study contains evidence of an ontological shift towards dialogism. This is evidenced by his application of relational concepts of time and space to his research findings in the form of 'iterative', 'practical-evaluative' and 'projective' domains (Emirbayer and Mische, 1998) and his choice of research design. Indeed, by moving away from an epistemological framework primarily based on Archer's (1995) theories of 'morphogenesis'/'morphostasis', Priestley appears increasingly concerned with exploring the inter-connectedness of multiple layers of reality through the medium of talk in the form of interviews and case study.

Talk is a fundamental feature of school life (Mercer and Hodgkinson, 2008). This talk predominantly relates to the classroom and general school contexts but also includes talk within the wider school community, including parents and carers. Importantly, there is also evidence of talk as a mediating tool for teachers' professional learning. For example, as coaching, talk features in 'learning conversations' (Sutherland, 2006). It is

> 'structured professional dialogue, rooted in evidence, which
> articulates beliefs and practice to enable reflection on them'.
> (Centre for the Use of Research and Evidence in Education (CUREE), 2008)

In my experience, effective coaching enhances pedagogical practices, it empowers teachers, it leads to collective responsibility and it encourages reflection which has the potential to transform beliefs and lead to sustainable change (Crespo, 2006; Prestridge, 2009). As a mediating tool for the KTP project, coaching was a deliberate approach which required teachers to draw on their life experiences, increase their practical wisdom, and enable curriculum change in the form of enquiry based learning in their school.

2.5.1 Talk and teacher agency

Marková (1987) defines talk as the main constituent of a dialogic approach to pedagogy. In the classroom, knowledge is not transmitted by the teacher but is co-constructed through dialogue within the classroom community (Sidorkin, 1996; Barrow, 2010). Here, knowledge is not a fixed entity, but a fluid relational process of sense-

making at a given time and place. As an approach to curriculum innovation, a 'dialogic' worldview conceptualises the change process as participative. Indeed, some authors suggest that 'dialogic' theories based on the work of Mikhail Bakhtin offer an alternative conceptualisation of the potential of dialogue between 'self' and 'other(s)' within a context of change (Akkerman and Bakker, 2011; Wegerif, 2011). 'Dialogic' processes involve multi-layered interactions between voices. Acts of speech reflect previous and future experiences (Emirbayer and Mische, 1998) and the presence of another person or other people (Bakhtin, 1981). Indeed, Emirbayer and Mische reflect this worldview in their definition of 'agency';

> 'a dialogical process by and through which actors immersed in temporal passage engage with others within collectively organised context for action.'
>
> (*ibid.*, p. 974)

This is what Bakhtin (*ibid.*, p. 274) terms 'heteroglossia', or 'multivoicedness', when voices express ideas from different perspectives according to time and context. From a Bakhtinian perspective, teacher agency is a participative process which is demonstrated in and through dialogue. By talking and listening, teachers receive and contribute to a 'polyphony' (multitude) of voices (*ibid.*) which not only informs their actions, it provides a structure for talking about them. Here, voices do not necessarily seek to resolve issues. They feature as part of a cycle of lived experiences and they have the potential to create confusion, tensions and feelings of 'not knowing' (Rathgen, 2006; Ketelaar *et al.*, 2012), which affect additional issues of identity and, sometimes, professional vulnerability (Lasky, 2005).

Bakhtin's (1981) concept of 'heteroglossia' is particularly useful in relation to my emerging conceptual framework because it makes it possible to undertake a multi-layered exploration of dominant and non-dominant voices from the macro context of performativity in UK education, at the meso level of teachers developing understanding of enquiry based learning, and the micro level of the individual teacher and their teaching. They offer a potential for developing Priestley *et al.*'s (2012a) conceptual model of teacher agency at each of these levels, including opportunities to uncover examples of Bernstein's (1996) 'framing' and 'discursive gap' across multiple dimensions of teachers' perceived realities (Bhaskar, 1978). I will discuss this in more detail in the Methodology chapter (**pp. 40-64**).

2.5.2 Critique

Sullivan and McCarthy (2004; 2005; 2008) have debated the application of Bakhtin's work, based mainly on analyses of literature, to research outside of this field. However, there is evidence to suggest that Bakhtin's theories engage with a more pragmatic research approach to teacher agency. As such, they create possibilities for further developing theoretical and methodological aspects of critical realism. Indeed, psychologist Hubert Hermans has drawn on Bakhtin's work to present 'dialogical self theory' as a framework for individual and cultural interpretations of social change (Hermans and Oles, 1994; Hermans, 1999; Hermans, 2001b; Hermans, 2004; Hermans, 2006b). The personal imperative of 'dialogical self theory' accounts for teachers' own contexts (Nias, 1987; Flyvberg, 2006), which present multiple layers of perspective and insights into dominant social and cultural values (Spranger, 1919).

2.6 A dialogic framework for exploring teachers' shifting perceptions of enquiry based learning over time

'Dialogical self theory' (Hermans, 2001b) combines Western pragmatism (James, 1890) with Eastern thinking (Bakhtin, 1973; Bakhtin, 1981). Here, human beings narrate their own stories in a personal meaning system (Hermans, 2006a), which Hermans (2006b) compares to a 'theatre of voices'. The personal meaning system is made up of 'internal' and 'external' positions, which reflect the multiple dimensions of the 'self' (Hermans, 2001b, p. 252[1]; Appendix E, Figure A, **p. 158**). 'Internal' positions connote the 'self' as 'I' (*ibid.*); 'I as a teacher', 'I as successful', 'I as unhappy'. 'External' positions represent social and cultural factors on the 'self' as 'other' (*ibid.*); 'my best friend', 'my students', 'my classroom practice', 'my colleagues'. Here, the 'self' makes choices as well as having thoughts. It has immediate attitudes and internalized values (Hermans and Oles, 1994). The 'self' as 'other' is bound to social and historical contexts and reflects their value(s). As 'internal' and 'external' positions, values are not stable. They move 'spatially' and can be arranged in a hierarchical (organized) system in terms of importance, influence or dominance (Hermans, 2001a). Crucially, the movement of 'internal' and 'external' positions over time allows 'dialogical' relations to be

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[1] A represents two-way sharing, B signifies one way sharing, C represents a common interest, D signifies something one person knows about themselves that the other person does not know, E represents something one person knows about themselves that the world does not know. This assumes a degree of common understanding of two people in dialogue, but also possibilities for misunderstanding and a lack of knowledge about the other person and their worldview.

established (*ibid.*). 'Dialogical' relations reflect social relationships and a capacity to innovate (re-invent the 'self') through positioning and re-positioning (*ibid.*).

Essentially, 'dialogical self theory' is composed of four main aspects; 'other-in-the-self', 'multiplicity-in-unity', 'dominance and social power' and 'openness to innovation' (Hermans, 2008). Here, 'internal' and 'external' positions are involved in processes of negotiation and interchange. Interactions between these positions allow for multiple voices, agreement and disagreement. Voices are 'deeply penetrated by the culture of institutions, groups, and communities in which they participate, including their power differences' (*ibid.*, p. 192). They occupy different positions as the dialogical self takes initiatives, and responds to situations. New positions, shifting positions, or the co-operation of two or more positions to create a subsystem in the self, create opportunities for personal change.

There is a considerable overlap between concepts of 'dialogical self theory' (Hermans, 2001b) and the theory of 'symbolic control' (Bernstein, 1996). For example, relationships, time, space, society and culture provide contexts for concepts of dominance, tensions, perceptions, voices, dialogue, cognition, multiplicity, movement and change (Figure 8, **below**).

Figure 8: Overlapping concepts
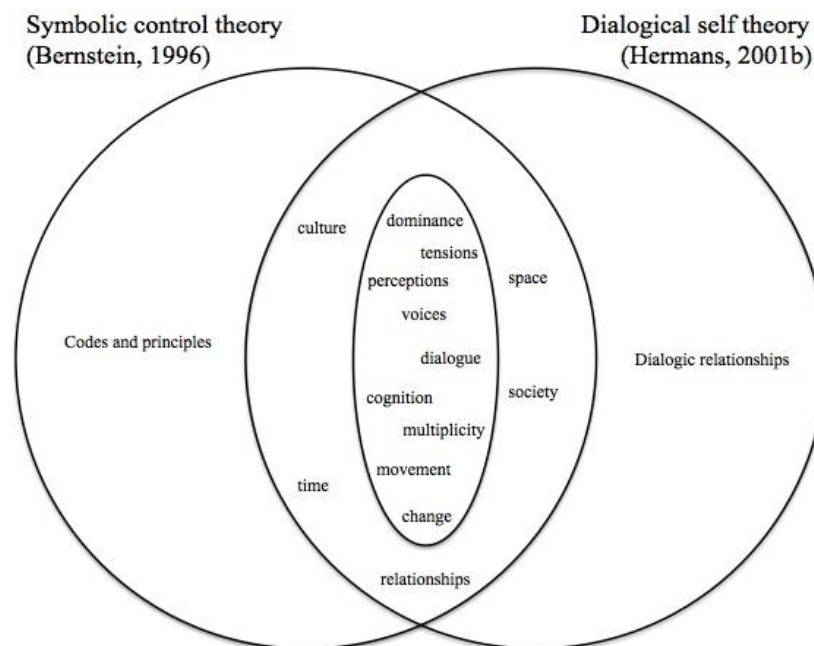
Indeed, the four main aspects of Hermans' (2001b) 'dialogical self theory' provide a conceptual framework for studying the emerging concepts of teachers' shifting perceptions of enquiry based learning over time (Table 4, **below**).

Table 4: A conceptual framework for studying teachers' shifting perceptions of enquiry based learning over time

Aspects of Bernstein's (1996) theory of 'symbolic control'	Four main aspects of Hermans' (2001b) 'dialogical self theory'	Concepts which feature in both Hermans' (2001b) 'dialogical self theory' and Bernstein's (1996) theory of 'symbolic control'
'recognition'/'realisation' 'framing' 'strong'/'weak' 'internal'/'external' 're-contextualising rules' ('pedagogic discourse') 'evaluative rules' ('pedagogic device') 'visible'/'invisible pedagogy'	**'Other-in-the-self'** 'Internal' and 'external' positions involved in processes of negotiation and interchange	**Dialogue Multiplicity Perceptions Cognition Movement**
'framing' 'strong'/'weak' 'internal'/'external' 'recognition'/'realisation' 're-contextualising rules' ('pedagogic discourse') 'evaluative rules' ('pedagogic device') 'discursive gap'	**'Multiplicity-in-unity'** 'Internal' positions allow for multiple voices, agreement and disagreement	**Dialogue Voices Multiplicity Tensions Cognition**
'classification'/'framing' 'strong'/'weak' 'recognition'/'realisation' 'framing'/'messages' 'evaluative rules' ('pedagogic device') 'cultural re-production-production'	**'Dominance and social power'** Voices are 'deeply penetrated by the culture of institutions, groups, and communities in which they participate, including their power differences' (Hermans, 2008, p. 192)	**Dominance Perceptions Cognition Change**
'evaluative rules' ('pedagogic device') 'visible'/'invisible pedagogy' 'cultural re-production-production'	**'Openness to innovation'** Voices occupy different positions as the 'dialogical self' (*ibid.*) takes initiatives, and responds to situations. New positions, shifting positions, or the co-operation of two or more positions to create a subsystem in the self, create opportunities for personal change	**Change Cognition Movement**

Hermans' (2008) concept of 'other-in-the-self' involves 'internal' and 'external' positions in a process of negotiation and interchange. Dialogue, multiplicity, perceptions, cognition and movement are common to both Hermans' and Bernstein's theories in this respect. To explain his concept of 'other-in-the-self', Hermans (2001b, p. 254) uses the example of a child who encounters the new 'external' position of 'my teacher' on his first day at school. Here, the child also has a new 'internal' position; 'I as pupil'. His narratives suggest personal, psychological, social and cultural perspectives on his first day at school. Over time, changing contexts influence positions, and thus perception. They shift. Hypothetically, teachers offer similar perceptions of enquiry based learning by talking about their place in it in relation to other people, other things, and possibly their own thoughts. They engage with 're-contextualising rules' involving 'recognition' and 'realisation' (Bernstein, 2000, p. 31), as well as modalities of 'classification' and 'framing' (*ibid.*, pp. 7-14) when they discuss their attempts to make sense of enquiry as part of their classroom practice, for example. From this perspective, I aim to explore whether teachers' evaluate their 'selves' when they talk about changes to the pace and content of their lessons, or their changing relationships with students and other staff members, and as they reflect upon different social and cultural contexts caused by their experiences of enquiry.

There is 'multiplicity-in-unity' where teachers' narratives include multiple voices (their own and those of other people), which either facilitate their developing understanding of enquiry based learning or they create tensions (Hermans, 2008, pp. 189-190). More so than Hermans' concept of 'other-in-the-self', 'multiplicity-in-unity' corresponds to Bernstein's (1996) 'framing', since it involves the perceived importance of enquiry within the school and the manner in which messages are communicated. For example, 'multiplicity-in-unity' relates directly to the concept of 'multivoicedness' (Bakhtin, 1981): Who talks? Who listens? What is the impact on teachers' developing understanding of enquiry? Where are there tensions? How do teachers reconcile aspects of the pedagogic device (about different types of knowledge, models of instruction and their own beliefs)?

Within the context of teachers developing understanding of enquiry based learning at Tableford School, the concept of 'dominance and social power' (Hermans, 2008, pp. 190-192) holds the potential for 'weak framing' and 'cultural re-production', strongly

advocated by Bernstein (1996). Through dialogue, teachers re-produce the voices which determine the extent to which they adhere to the dominant structures of 'classification' and 'framing'. Their narratives contain examples of how they process 're-contextualising rules', and their role in the development of enquiry in their school. In some cases, teachers might experience epistemological conflict when enquiry based learning creates tensions between dominant social, cultural and moral discourses (Leat *et al.*, 2012).

Finally, 'openness to innovation' reflects the capacity for personal change within 'dialogical self theory' (Hermans, 2008, pp. 192-194). Indeed, 'innovation' has similar connotations to 'cultural production' (Bernstein, 2000), and social change. Here, by engaging with enquiry based learning, teachers may face 'discursive gaps' (*ibid.*) if the positions of their 'dialogical selves' do not reflect the models of 'classification' and 'framing' in their school. Indeed, 'cultural production' may occur in the form of 'invisible pedagogy' where teachers do not conform to the dominant discourses but act on their shifting perceptions from their positions at the bottom of the social hierarchy (Bernstein, 1975).

2.6.1 Critique

Like Priestley and Bernstein, some authors are critical of Hermans' work. For example, despite being used for a number of case studies (Hermans and Dimaggio, 2007), 'dialogical self theory' (Hermans, 2001b) has been found to be more theoretical than empirical (König, 2009). Other noteworthy issues are Hermans' expertise in the field of psychoanalysis, which is dissimilar to the context of my work, his perceived position as an optimist (Kuusela, 2011), and the manner in which he has interpreted the work of Mikhail Bakhtin (Cresswell and Baerveldt, 2011). Indeed, a number of authors have presented issues regarding methodological aspects of Hermans' work (Cross, 2010; Ligorio, 2010). I will address these in the next chapter (**pp. 47-48**).

Going further, much of Hermans' work includes the concept of identity. There is an abundance of empirical literature in the field of educational research on this theme. Indeed, Lasky (2005), Raptis (2010), Smit and Fritz (2008) and Zembylas (2003) are just four examples of authors presenting particular theoretical and empirical perspectives of teacher identity in recent years. I must therefore clarify my own

position on this. I perceive teacher identity in terms of the 'internal' and 'external' positions of teachers' 'dialogical selves' (Hermans, 2001b). It is by exploring the multiple dimensions of teachers' 'selves' that I intend to find out more about their shifting perceptions of enquiry based learning over time (**pp. 65-76**) and at the same time explore the emergence of underlying social and cultural issues which affect their professional learning. As 'selves' the teachers will not become transformed simply by being 'dialogical'. Indeed, Hermans' (*ibid.*) theory includes concepts of dominance and power in the form of social, cultural and political structures, like adhering to a political party or following the word of a spiritual leader, which might resolve an individual's personal uncertainties, tensions or struggles rather than establish any fixation of personal meaning. These 'superordinate knowledge structures' (Hermans and Hermans-Konopka, 2010, pp. 27-28) obscure the potential for human innovation. Structures and boundaries feature heavily within 'dialogical self theory' (Hermans, *ibid.*) as individuals recognise their perceived uncertainties, tensions and challenges and take steps to position and re-position their multiple 'selves' in relation to 'others'.

2.7 Social structure

My choice of framework for exploring teachers' shifting perceptions of enquiry based learning has developed as a result of my interpretation of sociological models of social structure suggested by Bhaskar (1978), Archer (1995) and Bernstein (1996). It defines my personal perception of the social context of my research. It also challenges existing concepts of social structure because it encourages a relational perspective of innovation, transformation and change (Figure 8, **p. 32**).

In Porpora's (1998, p. 339) view, social structure refers to one of the following:

1. Patterns of aggregate behaviour that are stable over time
2. Lawlike regularities that govern the behaviour of social facts
3. Systems of human relationships among social positions
4. Collective rules and resources that structure behaviour

Porpora's (*ibid.*) discussion of these four concepts is a particularly helpful tool for differentiating Bhaskar (1978) and Archer's (1995) perspective of social structure as systems of human relations among social positions from Bernstein's (1996) view, which concerns codes of 'classification' and 'framing' as well as 're-contextualising rules' that

structure behaviour. However, by addressing concepts of rules and relationships, Porpora's (*ibid.*) discussion encourages a consideration of my conceptual framework for studying teachers' shifting perceptions of enquiry based learning over time (Table 4, **p. 33**) and concepts which feature in both Hermans' (2001b) 'dialogical self theory' and Bernstein's (1996) theory of 'symbolic control'. From this perspective, I perceive social structure to exist between Porpora's (*ibid.*) the third and fourth concepts as relational (Lopez and Scott, 2000) interactions of dialogue, perceptions, cognition, movement, dominance, tensions and change between 'self' and 'other'.

2.7.1 Critique

Social structure is a central concept in sociology. It is for this reason that I have clarified my perception of it in the previous section. However, my view is not wholly sociological. It also includes aspects from the field of psychology. This has particular implications for the manner in which I present systems and resources (like the school timetable, the organisation of students into year groups, and the division of the curriculum into key stages), which the teachers encountered during my study. Indeed, it is by exploring the interactions of these concepts in the form of teachers' 'dialogical selves' (Hermans, *ibid.*) at the levels of the individual, the group and the whole school, and by applying an analytical framework which is based on Bernstein's concepts of 'classification' and 'framing' (**pp. 121-126**) that I aim to uncover their shifting perceptions of enquiry based learning, and reasons for those shifts, over time.

From this perspective, I present social structure as the interactions of systems, resources and human relationships at a macro level. This includes the general context of teachers' developing understanding of enquiry based learning. Using 'dialogical self theory' (Hermans, 2001b) as a framework for my study, however, teachers' 'internal' positions interact with 'external' positions to convey individual perceptions of enquiry. These uncover interactions at meso and micro levels with aspects of the environments in which teachers were operating. In order to clarify my perception of social structure further still, I present environmental aspects of my study (like the school timetable, the organisation of students into year groups, and the division of the curriculum into key stages) as contextual factors.

2.8 An ecological approach to understanding teacher agency

Relational social structure raises issues concerning teacher agency. Indeed, the manner in which I have already presented teacher agency in my thesis already suggests that there are individual, relational and ecological perceptions of this concept.

For example, Priestley and Minty (2012) suggest that teachers mediate the social events of their individual contexts (Supovitz, 2008 and **p. 18**) Here, teachers make individual responses to the contexts in which they find themselves, based on their existing knowledge and beliefs, and they make choices concerning the extent to which they interpret or engage with curriculum innovation and change. Relational agency (Edwards and D'Arcy, 2004 and **p. 10**), involves relationships of power and knowledge in order to engage others in action. Although I have so far presented this in terms of my own position within the KTP project, relational teacher agency depends on teachers' awareness of their own capabilities, as well as the skills and capacities of others, which they might engage in order to enable change.

The concept of ecological teacher agency (Biesta and Tedder, 2007) emphasises the influence of the multiple dimensions of the contexts in which teachers operate. Emirbayer and Mische's (1998) 'chordal triad' (Figure 6, **p. 19**) is a helpful metaphor for understanding ecological agency because it includes the interplay of environmental factors, time and teacher's personal capabilities within a context of change. Here, agency involves teachers' personal capacity to act in relation to the contingencies of their environments. As a result, teachers may exercise more or less agency at various times and in different settings because neither their personal experiences nor their individual contexts remain fixed: their 'internal' and 'external' positions (Hermans, *ibid.*) exist as inter-relationships, which are fluid and dynamic.

2.8.1 Critique

This ecological view highlights differences among critical realists regarding the relationship between social structure and agency (Giddens, 1979; Archer, 1995). Differences relate to the concepts of interdependence and analysis: the extent to which social structure influences agency (and vice versa) and whether they can be analysed as separate entities. My framework for exploring teachers' shifting perceptions of enquiry based learning over time requires a dialogic view of this dilemma. From this

perspective, agency and structure are interdependent: teachers' 'internal' and 'external' positions (Hermans, *ibid.*) interact within the ecological context of their developing understanding of enquiry based learning. Going further, however, I intend to suggest reasons for teachers' shifting perceptions of enquiry. This requires that my analytical processes (**pp. 65-78**) acknowledge the multiple dimensions of teachers' 'dialogical selves' as separate entities, whilst at the same time accommodating the whole person.

2.9 Conclusion

I perceive an evolving adjustment to the lens through which teachers' professional learning is researched; from a sociological perspective to a more psychological and pragmatic one. This includes the concept of teacher identity, which I have developed from Hermans' (2001b) 'dialogical self theory', teacher agency (Hayward *et al.*, 2004; Priestley and Humes, 2010; Priestley, 2011b; Priestley, 2011a; Priestley *et al.*, 2011; Wallace and Priestley, 2011; Priestley *et al.*, 2012a; Priestley *et al.*, 2012b; Priestley and Minty, 2012; Priestley *et al.*, 2012c) and issues relating to layers of social, cultural, political and personal context (Bernstein, 1996; Emirbayer and Mische, 1998; Supovitz, 2008). From this perspective, 'dialogical self theory' (Hermans, 2001b) provides a nested conceptual framework for exploring the teachers' developing understanding of enquiry at Tableford School because it acknowledges the importance of multiple layers of interactions of 'selves' and 'others', the concept of 'relational agency' (**p. 10**) and the influence of power and control in social and cultural contexts. Indeed, Hermans' (2008) dimensions of 'other-in-the-self', 'multiplicity-in-unity', 'dominance and social power' and 'openness to innovation' provide a theoretical foundation for exploring teachers' perceptions of enquiry based learning as they shift in relation to 'internal' and 'external' voices over time. These concepts provide a framework for developing 'classification' and 'framing' (Bernstein, 1996) and uncovering contextual factors which influence teacher agency and change.

Chapter 3. Methodology:
Considering research strategies, design and methods

Following a brief consideration of the ontological and epistemological contexts of educational research, I will address more specific issues faced by researchers of curriculum innovation and teachers' shifting perceptions, whose empirical work I have included in the literature review chapter of this study (**pp. 14-39**). From here, I will undertake a critical review of my research position, the purpose, quality and ethics of educational research, and of issues relating to research design and research methods in empirical studies which have been performed using a similar conceptual framework to my own. Finally, I will present my personal choice of methodology and accompanying rationale.

3.1 Ontological and epistemological contexts of educational research

Since its emergence as a social science, educational research has evolved to incorporate a complex variety of fields, perspectives, designs, methods, participants, goals, and processes (Cohen *et al.*, 2007; Bryman, 2008; British Educational Research Association (BERA), 2011). Indeed, issues concerning ontology, epistemology and qualitative and/or quantitative research methods require decisions which determine the overall quality and design of a research study (Tooley and Darby, 1998; Oancea, 2005; Oancea and Furlong, 2007). Contrasting perspectives can result in a variety of meanings, including public discourse and private interpretations, and between reality unconstructed by anyone and multiple realities created by each individual (Bhaskar, 1978; Archer, 1995). This is not without social and political connotation (Hodkinson and Macleod, 2010). In an over-simplified example, positivists regard educational research as a social *science*. Constructivists are concerned with the *social* aspects of the context of education; as individuals, we possess values that are contingent with human choices (Bochner, 2000). The empirical debate concerning ontological and epistemological models of educational research is particularly interesting because it presents a challenge to the values and beliefs of practitioners within the research community (Stronach and MacLure, 1997; Thomas *et al.*, 1998; Hodkinson and Hodkinson, 2002).

By introducing the concept of ontological difference, Wegerif (2008) offers a challenge to existing ideas of consensus and sense making in terms of worldview. In doing so, he casts doubt on previously accepted dialectic perspectives of synthesis and knowledge as a fixed entity (Vygotsky, 1978; Engeström, 1999b). Indeed, 'dialogic' reasoning does not necessarily 'make sense': the concept of 'heteroglossia' (Bakhtin, 1981) creates confusion, tensions and feelings of 'not knowing' and worldview is no longer a simple matter of choosing between positivism and constructivism.

Going further, epistemology concerns how we find acceptable answers to our research questions. In relation to ontology, it presents issues surrounding different forms of knowledge and ways of knowing. 'Knowledge' and 'knowing' are problematic concepts (**p. 11**). Data can be collected, observed and measured with or without personal interpretation. However, I perceive educational research to be interpretive and relational (**p. 10**). It requires an understanding of 'the subjective meaning of social action' (Bryman, 2008, p. 694) involving human behaviour, 'underlying ideas, meanings and motivations' (Robson, 2002, p. 24).

3.1.1 Critique

I acknowledge that an excessively interpretive approach may result in findings which are overly simplified or decontextualized (Wenger, 1998). Conversely, it is possible to overlook important nuances by adopting a methodology, which is overly objective. A preference for one side of the paradigm over the other can be restrictive, closing off avenues of investigation (Oancea and Furlong, 2007), yet the choice of a particularly innovative, new or mixed approach risks being rejected by the educational research community (Bridges, 1999).

3.2 Empirical methodologies within contexts of curriculum innovation and teachers' shifting perceptions

My conceptual framework for this study highlights multiple dimensions of teachers' professional learning contexts and the ontological position of critical realism (**pp. 31-38**). It accounts for concepts of power and control within a culture of performativity in

UK schools, as well as a developing interest in the concept of 'relationality' (Edwards and D'Arcy, 2004; Priestley *et al.*, 2012a; Priestley *et al.*, 2012b).

By evaluating Priestley's choices of research methods over time, I suggest that his epistemology is mainly interpretivist. Indeed, his longitudinal research studies explore the subjective perspectives of individuals and groups of people using interviews, observations and focus groups to provide rich findings following qualitative data analysis and validation. Importantly, however, I perceive a fundamental difference between the extent of Priestley's personal involvement in his empirical research studies and my own position as an 'insider-outsider' (**pp. 43-44**). In terms of participation, I understand that it is Priestley's intention to avoid influencing teachers' values, beliefs and perceptions. However, by negotiating roles as principal investigator, focus group mediator and participant interviewer, I suggest that his presence and that of his colleagues as 'bystanders' (Chekroun and Brauer, 2002) exerts an amount of social control on research participants. The 'bystander effect' (*ibid.*, p.853) can occur in a variety of settings. It takes place when the presence of strangers inhibits action. As an 'insider-outsider', I approached the concept of influence from an alternative perspective; by drawing on my relationships with the teachers involved in the KTP project, I attempted to inform and support their work in school. It is unclear from the empirical literature whether Priestley and his research teams developed a similar working model with their participants, or whether they embodied social, cultural, historical and political norms of educational research which were unfamiliar to the teachers with whom they worked in schools. From this perspective, criticism of interpretive approaches is hardly surprising, especially when it concerns the capacity for researchers to impose their own definitions of situations upon participants.

Of particular importance to my work are studies by two researchers who present varying interpretations of Hermans' (2001b) 'dialogical self theory' in relation to studying teachers' narratives (Cross, 2010; Ligorio, 2010). Cross's (*ibid.*) study of teachers' formal and informal narratives involves a range of data collection methods; focus groups, observations and interviews over a period of six years. In a clear definition of her research position, she states that she does not wish to affect teachers' talk (*ibid.*). However, she is also concerned by the concept of trust, both in terms of what teachers say, what they do not say, and in relation to the researcher's framework for data

analysis. With this in mind, Cross draws upon the concepts of 'dialogical self theory' (Hermans, *ibid.*) to investigate the concept of complexity. This is an under-investigated dynamic, especially when 'dialogic' spaces contain silences.

Ligorio's (2010) interest is in the dialogical relationship between identity and learning. It is not limited to teachers and therefore it includes students and learners. Writing from a perspective which reflects her historical personal experience of cultural psychology, educational psychology and identity psychology, and using computer mediated communication as her method of data collection, Ligorio (*ibid.*, p. 96) presents teachers' identity as a shifting process, which is continuously challenged by 'I-positioning'. Most importantly here, as part of the concept of swapping positions, teachers perceive themselves in positions as learners and also as researchers: not only do they influence (and are influenced by) the research process, but they affect the role of the researcher, who may also perceive themself as a teacher or learner in addition to their original position. Ligorio's findings hint at a research structure which expands possibilities and modalities of dialogue into and across classrooms. In terms of Bernstein's (1996) concepts of 'classification' and 'framing', this is 'weak'.

3.2.1 Critique

Within this short section, I have presented a range of methodological approaches based on a very small number of the empirical studies on the themes of curriculum innovation and teachers' shifting positions, to which I referred in Chapter 2 (**pp. 14-39**). I acknowledge that most of my empirical choices exist in the form of journal articles, where word limits often curb researchers' attempts to offer methodological details, however, I also recognise that the process of undertaking a critical evaluation makes it possible to better understand methodological choices based on ideology and epistemology, and identify potential weaknesses or opportunities for development.

3.3 Positioning stance within a philosophical framework

By encompassing three ontological domains: the 'empirical', the 'actual' and the 'real' (Bhaskar, 1978, p. 56), critical realism is an appropriate starting point for exploring teachers' developing understanding of enquiry based learning since it accepts concepts of time and space, which influence multiple layers of experience and perception.

Indeed, Bhaskar (1993, p. 155) and Archer (1995, p. 76) offer helpful models of 'transformation' (Kennedy, 2005), which involve the interplay of social structure and agency, and are central to this research study. As a researcher, my stance addresses my desire to investigate and identify the multidimensionality of teachers' experiences and the underlying cultural, social and political issues that influence the process of developing enquiry based learning in their school (Danermark *et al.*, 2002, p. 21).

Importantly, however, my research position has developed primarily as a result of the changing nature of my relationships with the teachers both during the KTP project and in the one and a half year period following its conclusion. For example, my awareness and effective practice of 'relational agency' (Edwards and D'Arcy, 2004) occurred as a direct result of my ability to manage teachers' responses to the development process through talk, and use the resources available to me to support them to the next stage. This led to my personal discovery of concepts of 'self' and 'other' (James, 1890), which feature prominently in the field of psychology. Over time, I have become able to perceive different dimensions of myself, both within myself and in relation to the teachers. In terms of the KTP project, in the period of time since its conclusion, I have become aware of teachers' different 'voices' in coaching sessions but also in everyday interactions. I have gained a sense of teachers' changing perceptions not only of enquiry based learning, but of their 'selves' when involved in developing enquiry. With hindsight, I realise that this context was emotionally charged and highly personal. As a result, once I began my doctoral studies, I sought a philosophical framework which would include models of transformation suggested by advocates of critical realism whilst at the same time address themes of emotion and personal change.

Edwards and D'Arcy's (2004) concept of 'relational agency' emphasises the synthesis of knowledge in, on and for practice to enable change. It allows for shifting identities which impact on practice. Conversely, I wonder whether certain conditions must be in evidence for 'relational agency' to take place. For example, Poonamallee (2009) raises concerns regarding researchers' feelings of affirmation and discomfort in relation to their personal beliefs. Additionally, I was not omnipresent and I cannot account for every single interaction of each individual teacher. Finally, there were many overt ethnographic features to my work (Bentz and Shapiro, 1998); I was immersed in the school context, and although I influenced teachers' lived experiences of enquiry based

learning in coaching sessions, I also observed them. However, this was just one aspect of my role. I was in school most days but not always. I was not a school employee. Instead, I was at times caught between feeling like an 'insider' and knowing I was not. Indeed, Campbell and Groundwater-Smith (2007) and Perryman (2011) present reasonable arguments for the 'insider-outsider's capacity to uncover individual subjective perceptions because of their personal knowledge and understanding of the research participants. From this perspective, the case for the researcher as an 'insider-outsider' is credible. Going further, Elliott's (1988) classification of different concepts of this research position provokes a discussion of dimensions of ontology, epistemology, ethics, politics and theory-practice. It marks the significance of the researcher's perceived relationship between 'understanding', 'being', and the social/political order (*ibid.*, p. 165). By addressing concepts of contingency and multiple truths, Elliott's (*ibid.*) view of research hints at a critical realist approach (Bhaskar, 1978), which offers neither purely positivist nor solely interpretivist viewpoints but rather a 'both-and' approach to society as an open system (Danermark *et al.*, 2002). From this perspective, truth and reality exist in multiple layers (Bunge, 1979); the world is 'structured, differentiated, stratified and changing' (Danermark *et al.*, 2002, p. 5) and can be analysed in terms of underlying issues (Harré, 1970; Harré, 1979) which influence continuity, discontinuity and incongruity (Archer, 1995). I acknowledge Elliott's (*ibid.*) concept of an 'insider-outsider' research position, which includes principles of 'relationality' and 'transformativity' underpinning the KTP project. It also takes into account the period of reflexive evaluation (Archer, 2000), which I experienced in the two years after the project's end.

3.4 Purpose, quality and ethics

By conducting a brief evaluation of research strategies, design and methods from studies of empirical attempts at curriculum innovation and teachers' shifting perceptions, I recognise that

> '… the community of educational researchers is multi-disciplinary and that within the paradigms and methodologies espoused by various disciplines, and often variously by their sub-divisions, a variety of concepts may be problematic.'
>
> (BERA, 2011, p. 4).

Indeed, some authors question the purpose of educational research (Stenhouse, 1981; Hammersley, 2003). Others raise important issues relating to its quality (Edwards,

2002; Kemmis, 2012). Neither the Economic and Social Research Council, the largest provider of social research funding in the UK, nor BERA disputes

> 'the aim of educational researchers to extend knowledge and
> understanding in all areas of educational activity and from all
> perspectives including learners, educators, policymakers and the public.'
>
> (BERA, *ibid.*)

Yet concepts such as 'data', 'reliability', 'validity', 'subjectivity', 'objectivity', 'truth' and 'reality' are often named as sources of creative tension within a diverse and fast moving research environment (*ibid.*). In response, ethical principles, procedures and guidelines attempt to ensure the overall quality of educational research.

3.4.1 Critique

The ethical principles, procedures and guidelines published by the Economic and Social Research Council (2006) and BERA (*ibid.*) do little to provide explicit solutions to problematic concepts encountered by educational researchers. Instead, I suggest that they exist to promote a culture of openness, honesty and truthfulness within the educational research community. By addressing these more encompassing principles, educational researchers are left to struggle with the purpose of their work (Kemmis, *ibid.*), which is not limited to ethical approval at the beginning of a research project, but rather bound to the contingency of contexts (Edwards, 2002; Lindén and Cermák, 2007). Examples of the working protocol for the KTP project and a teacher consent form for the third round of interviews are in Appendices B and C (**pp. 155-156**).

From an ethical perspective, my thesis contains two dilemmas: one professional, the other, personal. On one hand, I seek to gain an advanced knowledge and a deep theoretical understanding of educational concepts, coupled with training in research methodologies within education, in order to be able to gain the practical skills to communicate my own research ideas to an academic and practitioner audience. This is the professional dilemma. Ultimately more pressing, however, is the personal imperative (**p. 2**). On a daily basis over a period of two years, I worked with teachers at Tableford School with the aim of developing a formative assessment framework for enquiry skills in order to improve the overall quality of teaching and learning. Here, my role was deliberately provocative, yet it is my perception that the nature of our relationships became increasingly trusting and that I played a key role in changing the

culture of teaching and learning in the school, in spite of the dominant culture of performativity. In terms of research ethics, therefore, I am guided by the critical evaluations which are dispersed within my work in the form of 'critiques'. These evaluations highlight my deliberate attempt to address contextual issues as they occur. They also express the tensions I experience along the way.

3.5 Dialogic research methodologies

I am not the first researcher to pursue a methodology for studying enquiry based learning, teachers' perceptions and inter-subjectivities or the concepts of dominance and social power, teachers' professional learning and change. However, there are very few empirical studies which attempt to integrate each of these aspects within the research design. Hermans (2008) offers the concept of the 'dialogical self' as a framework for empirical work. This is the starting point for this section. More importantly, however, I am keen to evaluate the empirical literature of others who have sought a 'dialogic' approach to research methodology before me since this will inform the decisions I make in terms of my own approach.

3.5.1 Hermans' (2001b) 'dialogical self theory' as a stimulus for empirical work
Hermans (2008) clearly states his intention for 'dialogical self theory'; concepts of the 'other-in-the-self', 'multiplicity-in-unity', 'dominance and social power', and 'openness to innovation' to be used as a stimulus for empirical work using research methods inspired by scientific and interpretivist epistemologies. Indeed, he introduces the 'Personal Position Repertoire' ('PPR') as a matrix for organising and reorganising personal meanings that are associated with different positions (Hermans, 2001a, p. 323). Hermans (2001a, p.327-8) uses the case of 'Nancy' to exemplify prominence ratings of 'internal' and 'external' positions for further development as part of the therapeutic process. In this example, 'internal' positions are placed in rows. 'External' positions are in columns (Appendix D, **p. 157**).

This method is both quantitative and qualitative;

> 'The quantitative part of the method enables the researcher or practitioner to compare, on the basis of particular dimensions, the commonality and differences of several positions within the same individual and facilitates the comparison of different individuals. The qualitative aspect is based upon the consideration that the construction of meaning is more than a measurable,

quantitative matter. Meaning construction and reconstruction require proper attention to the stories people tell about their lives and to the ways people affectively organize events that are part of their personal and collective histories.'

(*ibid.*, pp. 323-324)

Importantly, Hermans (*ibid.*) makes two key points in relation to the 'PPR';

- It is intended to be adapted and revised according to the purposes and needs of the individual researchers or practitioners in their specific settings and circumstances (*ibid.*, p. 324),
- The method functions as a skeleton, and the flesh around the skeleton is evidence of cooperative enterprise of two parties (*ibid.*, p. 325).

In terms of Bernstein's (1996) concepts of 'weak classification' and 'weak framing', the 'PPR' is a desirable tool for my study since it is compatible with the theme of change from within the 'self'. Furthermore, the 'PPR' creates patterns of 'person-world interactions' (Hermans, 2001a, p. 325). Finally, as an analytical tool for exploring teachers' developing understanding of enquiry, the 'PPR' creates possibilities for identifying examples of *where* and *how* teachers' perspectives shift over time.

3.5.2 Critique

The 'PPR' is a helpful tool for recording and exploring multiple dimensions of voices within teachers' dialogue. However, there are limitations. Firstly, much of Hermans' research is conducted in the field of psychoanalysis where the 'PPR' requires an on-going commitment of psychologist and participant. As the KTP Associate, I was limited to a period of two years in school (Appendix A, **p. 154**). Secondly, Adams and Markus (2001) question the 'dialogicality' of the 'PPR', suggesting that positioning reifies personal, social, historical, cultural and political contexts by treating flowing patterns as fixed locations. This means that by placing clients' positions in matrices and then within circles signifying 'internal', 'external' and outside' domains of their 'dialogical selves', Hermans interrupts the continuous 'dialogic' process of knowledge creation. Thirdly, both Cresswell and Baerveldt (2011) and Lyra (1999) identify flaws in Hermans' interpretation of the 'self'. Writing with the intention of presenting an extended view of 'dialogical self theory' (Hermans, 2001b) the former are concerned

that the 'PPR' neglects embodied experience. For them, Hermans favours the construction of narratives that constitute conceptual knowledge of experienced life rather than experimentally lived life. Lyra (*ibid.*) offers a definition of dialogue as an epistemology of the human mind along the lines of Bakhtinian thinking (**p. 30**). She is interested in the concept of historical explanation within 'dialogical self theory';

> 'the kind of agreement that liberates partners for new developments on
> the basis of basic understanding – We know each other, so there is no
> need to spend effort on this topic'.
>
> (Lyra, *ibid.*, p. 483)

For Lyra, the extended past plays an important role in understanding new positions. This strongly resembles the concept of 'relational agency', which I have already highlighted as a major theme of my work. Finally, in addition to the general ideas of complexity (Cross, 2010; Lyra, 1999), and contingency (Adams and Markus, 2001; Ligorio, 2010; Cresswell and Baerveldt, 2011), other researchers have experienced the empirical challenge of describing and making inferences about dialogic processes implicated in self-innovation and change. For example, Cunha and Gonçalves (2009) are critical of the instability of 'multivoicedness' in terms of internal and external subjectivities. In particular, they are wary of the suppressive force of the coalition of two voices or a dominant voice so that a research participant does not fully take part. This concerns concepts of power and control as identified by Bernstein (1996).

3.5.3 Revisiting ethics

Hermans' (2001a) 'PPR' exists as one particular framework for using dialogic theory to conduct research. There are still a number of issues concerning this worldview, which have not yet been resolved either by the wider research community or within this study. It is, therefore, particularly important that I clarify my ethical position, since it affects the extent to which I can be open, honest and truthful. The tone of my thesis so far suggests a real concern for a consistent ontological and epistemological approach to my work. This has arisen because I recognise the need to explore the dynamic confrontation of teachers' 'dialogical selves' (*ibid.*) not only for myself, but in order to contribute to the existing knowledge base regarding concepts of enquiry based learning, power and control, and teachers' professional learning and development in schools.

In terms of using Hermans (2001b) 'dialogical self theory' as a stimulus for empirical work, some authors have chosen to conduct qualitative studies using interviews as the main method of data collection (Aveling and Gillespie, 2008). Some have used mixed methods (König, 2009). Others have developed innovative approaches using quantitative methods when sharing findings (Kluger *et al.*, 2008). Although I will address issues relating to analysis and findings in the next chapters (**pp. 65-76; pp. 79-116**), my response to ethical dilemmas resides within the context of my research study. My ultimate choice of research design and data collection methods will be influenced by my perception of the most honest and truthful options available to me. This will almost certainly be influenced by the concept of 'relational agency' (**p. 10**).

The concept of 'relational agency' facilitates my understanding of 'dialogical self theory'. It certainly applies to my position as KTP Associate (**p. 1**) and it is congruent with 'dialogic' methodology, where the study of subjective interactions leads to a complex web of human interactions. Some authors question the involvement of their peers in the research process (Clandinin *et al.*, 2009), however, for me, Ligorio's (2010) findings are too convincing. Within her own context and mine (Reid, 2008), there was a need to influence the research process. From this perspective, research ethics become interactive (Kearns *et al.*, 1998) and decision-making is a process, where actions are 'aimed for the good of those involved and for the good of humankind' (Kemmis, 2012, p. 894) in accordance with contextual factors.

3.6 Designing the research study

My thesis is concerned with the subtleties and complexities of individual teachers' perceptions of reality as they develop their understanding of enquiry based learning. There is therefore a need to recognize the complexity and ''*embeddedness*' of teachers' truths' (Adelman *et al.*, 1980) in relation to their individual, social, cultural, historical and political contexts. Along with the research questions, these are the factors, which essentially determine the choice of research design (Simons, 2009). Robson (2002) classifies five main types of research design into 'fixed' and 'flexible' strategies. This not only serves as a useful reminder of theories of 'convergence' and 'divergence' (Pryor and Crossouard, 2008; **p. 2**), but it also points to case study as a particular design for my research study.

Case study is a process or record of research, in which detailed consideration is given to the development of a particular matter over a period of time (Bryman, 2008, p. 691). It incorporates many different aspects of research, focuses and perspectives, bound up in a variety of philosophical, epistemological and methodological approaches. There is much consensus amongst educational researchers regarding the purpose of case study to probe the particularity or uniqueness of a case (Simons, 2009, p. 19). Indeed, Stake (1995) focuses on qualitative enquiry into a single case and Merriam (1998) relies on the inductive analysis of multiple data sources. Yin's (2009) perspective is broader than this, however. For him, case study is a strategy, which relates to both qualitative and/or quantitative methods to investigate phenomena in real-life contexts.

Interestingly, Simons (*ibid.*) uses the metaphor of 'story' for the process of case study and the underlying narrative structure of the case. Primarily focused on the evolution and practice of case study research in educational research and educational evaluation, however, she has not yet produced her own case study paradigm therefore I relate to Bassey's (1999) reconstruction of case study which is consistent with dialogic theory, and acknowledges the complexity of educational settings. For Bassey, the choice of research method generates outcomes, which facilitate interpretation. Professional discourse sits at the heart of his perception of case study. For example, in discussing their professional experiences, teachers contribute to the professional discourse. Reports of professional discourse contribute to educational research and vice versa. Professional discourse provides ideas that add to craft knowledge of both teaching and of education and politics. Importantly, for Bassey (*ibid.*, p.58), there is no requirement that research findings are consistent with scientific or even dialectic epistemologies. From this perspective, I propose to conduct an educational case study from a dialogical point of view; including both researcher and participant intra- and inter-subjectivities.

3.6.1 Critique

There are reasons to suggest a cautious approach to case study as a research method. Yin (2009, pp. 13-16) lists the 'lack of rigour', 'little basis for scientific generalisation' and 'lengthy studies, which 'result in massive, unreadable documents'. Going further, Grünbaum (2007) shares a useful analysis of the varying definitions and characteristics of case study before calling for greater clarity regarding concepts of 'validity' and 'reliability'. Other common criticisms of case study research are the potential for

generating too much data, which results in unclear findings, researcher bias, and the pitfalls of policy-making from a single case (Simons, 2009, pp. 162-170). I will address these issues in more detail in the next chapter.

3.7 Selecting research methods

Bassey (1999, p.69) reveals his ontological position as a constructivist when urging researchers to be creative and adventurous in their choice of data collection methods. Indeed, I suggest that he favours a relationally ethical approach to data collection, which does not follow a fixed model, but represents the contingency of the context being explored.

3.7.1 Interviews

From an empirical point of view, my process of teachers' developing understanding is predominantly mediated by dialogue. Interviews allow the researcher to enter a 'dialogical relationship with the local activity under investigation' (Engeström, 1999, p. 9). Following structured, semi-structured or unstructured questioning and transcription, researchers generate findings by analysing dialogue which is translated into text. They may then return to their respondents for clarity or validation. Notably, Kvale's (1996) perception of interviews as an exchange of views is congruent with the conceptual framework for this study: through dialogue, participants give voice(s) to their own and others' perceptions of a particular issue. However, the relationship between interviewer and participant can be contentious, particularly in relation to the validity of research findings that are made based wholly or predominantly on interviews (Bryman, 2008, pp. 435-471). For example, in terms of Bernstein's (1996) concepts of 'classification' and 'framing', interviews have been criticised for being too 'strong' and producing 'just one possible version' of events (Rapley, 2001, p. 303). Indeed, they can appear problematic for some researchers when the interviewer becomes 'a central and active participant' in the interaction that occurs (*ibid.*, p. 317). In these cases, concepts of power and control return.

My response to criticism of interviews as a data collection method serves as a reminder of Bernstein's (*ibid.*) 'weak classification' and 'weak framing'. It concerns the ethically interactive relationship between the researcher and the participant within an interview

situation. Indeed, the relationship itself has the capacity to elicit considerable responses from participants (Horn and Little, 2010), especially within a context of respecting the rights of each participant, valuing the views of everyone and compromising no-one (Bryman, *ibid.*). Providing interviewees with the interview questions in advance of the interview (Appendix H, **pp. 161-163**); making it explicit that questions do not need to be answered; and discussing the subsequent findings from the interview analysis all help to establish relationships and validate the data collection process.

3.7.2 Using video

Going further, it is not uncommon in UK schools to make use of video recorded lessons in order to review and develop classroom practice (Brophy, 2004). This is considered by some researchers to be an innovative methodology, which, if used appropriately within a given context, has much to contribute to the transformation of teachers' professional and personal learning (Hess, 2004). Theoretical rationales concerning educational researchers' use of video emphasise concepts of situated learning and the co-construction professional knowledge within a learning community (Schon, 1983; Shulman and Shulman, 2004). Indeed, video recordings present open-ended stimuli for discussing teachers' actual practice. They can be replayed without the delay of transcribing narratives collected during interviews, and they have the potential to convey the social fabric and other contextual details of classroom practice (Clarke and Hollingsworth, 2002). Video recordings also supplement and can be supplemented with other resources to build meaningful and authentic cases for aspects of teachers' professional development (Putnam and Borko, 2000; Abell and Cennamo, 2004; Bliss and Reynolds, 2004).

Video technology also has constraints. In terms of their development, I accept that teachers do not gain many new insights or ideas about improving their teaching from simply watching classroom videos. They require a clear purpose. In my own experience, video recorded material is best used as a tool to support teachers' professional learning when there is a clear focus on a specific aspect of teaching practice. Furthermore, some teachers make better use of video recordings than others. They have a natural disposition which reflects constructivism and a capacity for learning through dialogue. Finally, regarding authenticity, I question the dimension of

reality conveyed in lessons, which are prepared with the teacher's prior knowledge of the recording.

3.7.3 Critique

This critical evaluation of case study, interviews and video recordings as methods of research design and data collection sharpens my awareness of the need to secure my final choices. Indeed, each method faces criticism by other members of the research community who seek 'objectivity' over 'subjectivity', and 'validity' and 'reliability' over 'relationality' (BERA, 2011). I am, therefore, particularly mindful of authors who are critical of mixing data collection methods (Pring, 2000). As a researcher whose interest lies in teachers' multi-dimensional perceptions of enquiry based learning, I suggest a flexible approach (Robson, 2002), which weakens 'strong classification' and 'strong framing' (Bernstein, 1996), and facilitates dialogue. I know this will attract criticism.

3.8 A dialogic methodology for exploring teachers' shifting perceptions of enquiry

'Dialogical self theory' (Hermans, 2001b) acknowledges Wegerif's (2008) position on knowledge and development. It also corresponds to 'relational' and 'transformative' aspects of this research study because, as 'dialogical selves', human beings narrate their own stories in a personal meaning system (Hermans, 2006b), which is made up of 'internal' and 'external' positions. These positions reflect the multiple dimensions of the 'self' and the 'other' (Hermans, 1999a), which Hermans (2001a, p. 362) attempts to explain in the form of 'exchanges of intersubjectivity' from one individual at a particular point in time and within a given context. As such, 'dialogical self theory' (*ibid.*) involves multiple levels of human cognition and emotion, including tensions and contradictions. These are 'uncertainties' (Hermans and Hermans-Konopka, 2010, p. 3). Importantly, within the framework of 'dialogical self theory', dialogical relations reflect social relationships and the human capacity to innovate (re-invent the 'self') through positioning and re-positioning (Hermans, 2003; Hermans, 2006b). They acknowledge the multitude of perspectives voiced by each individual teacher at any one time. This allows for a multi-layered exploration of their perceptions (Hermans, 2008).

In order to be a valid framework for this research study of teachers developing understanding of enquiry based learning, 'dialogical self theory' (Hermans, 2001b) must be able to accommodate the themes of knowledge and knowledge transfer (from the KTP project), as well as emerging concepts of agency and contextual factors of power and control. For Hermans, knowledge is relative to the 'self'. It is not a fixed entity but it exists as a dialogical reaction to the influences of time and space; the constant abstract construction and de-construction of meaning between the 'self' and 'others' (Hermans and Hermans-Konopka, 2010, p. 3). Within a framework of 'dialogical self theory', new knowledge is created when a person reacts 'dialogically' in order to cope with uncertainties, tensions or challenges of a particular situation. Knowledge transfer is the extent to which an individual is then influenced or changed by their dialogical encounter.

Going further, much of Hermans' work has been conducted within the field of psychoanalysis. Here, uncertainty, tensions or challenges are experiential features of the 'dialogical self' in action when a person undergoes a process of self-innovation by working on their individual perceptions of the relationships between their 'selves' and 'others'. Indeed, a 'healthy' mind acknowledges the complex interconnectedness of parts of the self and society, the concept of ambiguity through a lack of clarity, and a lack of control (Hermans and Oles, 1996). From this perspective, 'dialogical self theory' (Hermans, 2001b) has the capacity to demonstrate the process of personal transformation when individuals face up to uncertainty, tensions or challenges, rather than avoid them (*ibid.*). In such cases, human agency is enabled as a result of increased self awareness and a desire to change.

3.8.1 Case study

Appendix F (**p. 159**) serves to illustrate how I intend to use the case study design to address my research questions. In terms of Yin's (2009, p. 46) four basic types, my study follows a single-case embedded design. The case is analogous to teachers' developing understanding of enquiry and the embedded design allows for the in-depth exploration of within teacher and across teacher analysis (*ibid.*, pp. 50-53) from trails of interview and video data. Findings are 'validated' by loops of teacher feedback. An example of teacher feedback is in Appendix W (**p. 180**).

3.8.2 Multiple data collection methods

My choice of data collection methods responds to the desire to find out about individual teacher's shifting perceptions of enquiry based learning, and reasons for such shifts. In two phases, my choice of approach hints at the creativity and sense of adventure advocated by Bassey (1999), however, a more realistic explanation lies with the availability of KTP project data up to two years after its completion. It is in two phases with a 'stopping off point' (Greene, 2010).

The first phase of data collection took place during the KTP project between January 2008 and December 2009. As the KTP Associate, I collected large amounts of information from teachers, students and senior school leaders in order to facilitate the iterative decision making process of KTP project, and maintain high levels of feedback and support to the teachers. Developmental work principally took the form of video recordings of lessons and coaching sessions with the teachers on planning and resourcing enquiries, however, I also conducted one series of semi-structured interviews in April 2008 following the teachers' first attempt at enquiry in order that I might work with my academic supervisor from the northern university and publish at least one journal article about the project. Documentation was abundant, ranging from teachers' leaning journals and articles written for national publication, as well as external monitoring visit reports by the Office for Standards in Education Children's Services and Skills (Ofsted). A second series of interviews was agreed by the school Principal and the KTP academic supervisor and conducted by another researcher from the northern university in March 2009. Findings were presented in research papers in September 2009 at two international conferences aimed at an academic audience (Leat and Reid, 2009b; Leat and Reid, 2009a). A data collection schedule is in Appendix G (**p. 160**).

The end of the KTP project in December 2009 was a timely 'stopping point' (Greene, *ibid*.) as this marked the end of my employment contract with the northern university. This meant that I no longer worked there and formal links to Tableford School ceased. Instead, I was appointed to the senior leadership team of another school but I maintained a collaborative relationship with Tableford in 2010 and was coached by the school Principal on a leadership development course. In practice, this period of time

was a crucial point in my personal and professional learning, during which I made the decision to pursue my doctoral studies.

The second phase of data collection took place in May 2011 and on one afternoon in September 2011. Following an evaluation of the data collected during the KTP project and their relevance to my research question, I conducted a final series of semi-structured interviews with six of the seven teachers. One teacher (Andrew) was on paternity leave at this time and not able to attend. I re-arranged his interview for early in the Autumn Term. With one exception (Michael), each of the seven teachers took part in three semi-structured interviews over a period of three years and nine months (encompassing four school years), from January 2008 to September 2011. Interviews took place in April 2008, March 2009 and either May or September 2011. The interview schedules were made up of series of open-ended questions, which provide structure but 'deviation from the agenda' is 'expected and accepted' (Limerick *et al.*, 1996, p. 451). This allows for teachers' individual subjectivities. A record of the interview questions is in Appendix H (**pp. 161-163**).

In terms of video recorded observations of lessons and enquiries, I recorded a whole lesson with each teacher at the beginning of the KTP project in February 2008. This was intended as a baseline against which to measure future developments. From this beginning, I carried the video camera around wherever I went in school so that it became a common and accepted feature of my practice. As part of my case study, I selected at least one other video recording from each teacher's collection as an example of their interpretation of enquiry based learning in the classroom. A final lesson/enquiry was recorded at the end of the project as a record for the individual teacher and in order to compile a DVD of enquiry in action for prospective visitors to the school.

3.8.3 Research participants

My case study records just some of the lived experiences of seven teachers involved in developing understanding of enquiry based learning at Tableford School. There are two female teachers and five male teachers, two each from core curriculum areas of English, Maths and Science, and one from Art (Table 5, **p. 59**). The teachers were recruited following an informal invitation by the school Principal and his Deputy Principal. In

the current political climate of high stakes performance in schools, and especially this school, given its position in terms of external inspection and examination results (**pp. 1-7**), the choice of curriculum areas sent a clear message that the KTP project was a significant step forward in terms of raising the quality and profile of teaching and learning. At the start of the KTP project, Ethan, Isobel and Chloe had been teaching for five years or less and were relatively new to the profession. In positions of responsibility, Christopher, Michael and Matthew were asked to be involved, not only because of their potential as ambassadors for the KTP project, but also for the Principal's vision for the school and its improvement (Fullan, 1996). Andrew acted on his own initiative and approached the Principal himself because he heard about the project brief and it appealed to him personally. I was also an active participant in the KTP project. Indeed, I have already clarified my role in this, as well as my research position as part of my thesis.

Table 5: Research participants

Name	Gender	Age	Years teaching	Curriculum area
Andrew Walker	Male	21-30	7	Art
Chloe Taylor	Female	21-30	5	English
Christopher Lewis	Male	31-40	8	Science
Ethan Thomas	Male	21-30	4	Science
Isobel Smith	Female	21-30	2	English
Matthew Brown	Male	31-40	12	Mathematics
Michael Wilson	Male	41-50	10	Mathematics
Anna Reid*	Female	31-40	7	Languages

n=7. Approximately 10% of the school's teaching staff plus the KTP Associate* (me)

Six of the seven teachers continue to work in the school. Andrew left at the end of the summer term in 2012.

3.8.4 Ethical processes and procedures

In accordance with Newcastle University procedures for research projects involving human subjects in a non-clinical setting, this study began once I had applied for and was granted ethical approval. My application involved a consideration of the type of project I intended to conduct and how I intended to conduct it, as well as participants, risk management, informed consent and debriefing participants once the research had been completed.

By acknowledging that the predominant nature of my study involved the use of video evidence and semi-structured interviews produced during the KTP, I provided evidence of the ethical approval granted to this preceding project. In doing so, I clarified the overlap concerning my suggested approach to data collection methods, which involved resources collected during the KTP and at a later stage as part of my doctoral studies. I also made clear that the outcomes would be used to inform my own practice as a senior school leader but also that of other practitioners interested in building internal capacity for change in schools.

In terms of participants, although my study mainly concerns teachers developing understanding of enquiry based learning, their ages ranged from 12 to 55 years. I also name the school as a participant. My study included teachers and students. All of the teachers were over the age of 18 years at the beginning of my study and competent to give consent. Students were all given a letter to be signed by a parent or carer granting permission for their son or daughter to be included in the study. If a student did not return their consent slip, they were not involved in lessons or parts of lessons which were being used for the purposes of data collection. Approval was granted by the school in the form of a letter from the Principal. There were no other participants.

Participants were informed both verbally and in writing that their involvement would be voluntary and that they could withdraw from the research at any time (Appendix B, **p. 155**). Withdrawal would have created particular issues, which I would have been required to resolve in my roles as KTP Associate and later as a researcher, however this was at no time communicated to participants. In personalised letters, participants were told that their data would be treated with the maximum confidentiality within the context of the study and in the wider academic community. This was particularly

problematic because participants were well known within the school community at the time of the KTP. They were trying out new approaches to learning and discussing them with colleagues who were not directly involved in the project. Following an open discussion, the teachers acknowledged this issue and suggested that they and the school appear in my thesis under pseudonyms, which only they would know, unless they decided to tell someone else. I would not reveal exactly which teacher appeared under each name in the thesis. This does not completely eradicate the issue of being able to identify particular participants however it is a solution, which was reached in collaboration with the teachers and which they accepted.

Participants were also exposed to the general risks that are associated with being in a busy secondary school, psychological risks involved in 'risk-taking' as part of the developmental nature of curriculum innovation, social risks involved in being part of the core group of seven teachers, and the risk of disclosing personal information. Tableford School has generic risk assessment procedures, which were adhered to throughout my study. In addition, I had regular meetings with the Deputy Principal and my academic supervisor in order to identify potential issues causing concern to individual participants, and I had an open approach to working with the teachers themselves. They each had my contact details and took it upon themselves to get in touch with even the slightest concern.

Going further, there was the potential for risk to, damage to, or destruction of artefacts arising from my research, particularly in relation to the loss of video or audio recordings, or my thesis itself. All electronic documentation was stored on the Newcastle University network with password protection and appropriate back-up systems. The transcription of video and audio data occurred as soon as possible after making the recording. Once checked for authenticity, the original recordings were then destroyed. Data were stored using a simple, accurate filing system to ensure quick and easy retrieval.

Prior to giving their consent, a written information sheet was distributed to all teachers, students and their parents at the beginning of the KTP project in January 2008. A letter was sent to all parents of students in Years 7 and 8 in February 2008 requesting permission to use video in lessons. Invitations to drop-in sessions were sent home and

articles relating to the KTP project appeared regularly in the school newsletter. Letters of re-introduction were sent to teachers and students prior to the final round of interviews in September 2011 (Appendix C, **p. 156**).

Finally, teachers played an integral role in my process of data analysis. This is presented in more detail in Section 4.7 of my thesis (**pp. 76-77**). They also underwent a debriefing process once I had completed the writing up stage of my work. Each participant, as well as the school Principal, was given a copy of my thesis for comment and approval prior to submission. Participants' full consent is recorded in the form of their signed letter of re-introduction. They have the originals. Photocopies are stored in a locked fire-proof filing cabinet at Newcastle University.

3.8.5 Critique

The layers of complexity consistent within educational research are undoubtedly in evidence within my choice of methodology for this study. As a result, it is not without limitation. Indeed, limitations include the influence of time and space on my research design as well as issues concerning my data collection methods and research participants.

Firstly, the timing of my research and analysis as well as my methods of data collection. My research study was conducted in a 'localized place in time' (Bassey, 1999). Indeed, the KTP project ran between January 2008 and December 2009 and I conducted a series of subsequent interviews in May and September 2011. However, the intervening period constituted a break away from Tableford School and a personal awareness of my own 'discursive gap' (Bernstein, 1996). This undoubtedly influenced me as a human being. As a result, I heed Bakhtin's (1981, pp. 84-258) warning about the potential of time and space to distort realities depending on an individual's experience and personal perspective. I am also critical of the lack of a consistent interviewer within my research study, my reliance on transcribed audio material up to three years after its initial recording and my justification of using audio material which was not originally intended for this research study. These issues are mainly due to the timing of my decision to pursue my thesis and can be justified on the basis of solutions from empirical literature or accepted research protocol. However, by highlighting them here,

I am also maintaining that my work is 'real' and that it is bound by the challenges of its context.

Concerning the participants, the initial team of seven KTP teachers was put together by the school Principal and Deputy Principal prior to my involvement with the project. It did not include the 'best teachers' based on lesson observation outcomes. Indeed, the decision was also made to avoid staff members who had a particular established reputation within the school (Reynolds *et al.*, 1996). Instead, the final group of teachers, which represented approximately ten percent of the teaching staff in the school, comprised of two teachers each from the core curriculum areas of English, Maths, Science, and one teacher from Art (Table 5, **p. 59**). In the second year of the project, and in accordance with the overall plan, I was instrumental in doubling the number of teachers participating in the development of a formative assessment framework for enquiry skills to fourteen. Although I have chosen to exclude them as participants from the focus of this research study, primarily because I emphasise the importance of relationships and I feel I simply did not know the second cohort of teachers as well as the first, the seven teachers refer to them in their interviews. Some of the teachers from the second cohort of the KTP project appear in my analyses and findings. They are Anthony Jones, Daniel Williams, Elizabeth Davies and Mia Evans. None of the teachers' names within this research report are their own. I have changed them. This is in part in accordance with conventions of educational research which surround concepts of anonymity and participant care (BERA, 2011). It is also an attempt to encourage my critical evaluation of teachers' selves and teachers' own self review. For example, the process of analysing issues faced by teachers as aliases lessens opportunities for me to react in an overly subjective, and therefore emotional, manner to their transcribed interview data and video recorded lessons. This is especially important if a teacher raises an issue concerning an aspect of my involvement in the KTP project. Names were selected at random from online lists of the twenty most common male first names, female first names and family names in the UK. In actual fact, my desire to ensure anonymity is somewhat naïve. Firstly, all of the participants were well known to the teaching and professional support staff at Tableford School. Secondly, the small size of my sample and my inclusion of a brief description of each participant makes it very easy for anyone who knew the context of the school to identify each teacher. I have discussed this with the participants and we have agreed that,

realistically, their anonymity is maintained where readers of this research study are not biased by prior knowledge of either the KTP project or the school.

My final concern involves the concepts of power and control during the process of selecting the initial group of seven teachers. At no time were they directed to take part in the KTP project. However, each teacher was approached by either the Principal or his Deputy Principal and invited to participate and members of the school's leadership team influenced participation. Once the project began, however, I believe that there was very little explicit influence from the Principal or Deputy Principal, although this did occur. Lastly, teachers did not benefit from any kind of remuneration. Although it would have greatly complicated both the success of the KTP project, my task of managing it, the teachers were free to disengage at any time, and in good faith. This is outlined in the agreed working protocol (Appendix B, **p. 155**).

3.9 Conclusion

I have arrived at a methodology for exploring teachers' developing understanding of enquiry based learning by considering issues of research strategy, design and methods within the context of a dialogic conceptual framework. Including concepts of time, space and interpretation, my case study – as with much educational research - is not without flaw. Nevertheless, I trust that other researchers will engage with what I am attempting to do, even if they do not agree with it. In the next chapter, I will present more precise details of my analysis and a critical evaluation of my framework for analysing the resources I have collected regarding teachers' shifting perceptions. Then I will present my findings.

Chapter 4. Analysis:
A relational process of continuous revision

In this chapter, I pursue the concepts of enquiry based learning, power and control, teachers' professional learning and change. Following a 'dialogic' model of knowledge creation (Wegerif, 2008), I perceive analysis to be a relational process of 'continuous revision and enrichment of understanding' (Lincoln, 2002, p. 331) therefore I will re-consider Hermans' (2001a) 'Personal Position Repertoire' ('PPR') as a mechanism for exploring the multiple dimensions of teachers' developing understanding of enquiry based learning via interview transcriptions and video recorded lessons before presenting my own interpretation of his model and accompanying rationale. As my analysis moves from general to more specific aspects of teachers' developing understanding of enquiry based learning, I will explore each of the four dimensions of Hermans' (2008) 'dialogical self theory'; 'other-in-the-self', 'multiplicity-in-unity', 'dominance and social power', and 'openness to innovation'. Indeed, I provide a visual models for portraying findings regarding the fluid and dynamic 'inter-relationality' of teachers' 'internal' and 'external' selves.

My critique of Hermans' (2001a) 'PPR' in Chapter 3 (**p. 48**) highlights a number of methodological issues in relation to my research study. However, as a framework for analysing concepts of 'other-in-the-self', 'multiplicity-in-unity', 'dominance and social power', and 'openness to innovation' (Hermans, 2008), it provides an innovative stimulus for exploring teachers' 'internal' and 'external' 'selves', and presenting subsequent findings. For example, in conjunction with a method of self confrontation with clients of psychotherapy, Hermans (2001a) uses the 'PPR' to produce findings related to personal valuations placed on 'internal' and 'external' positions. This facilitates the creation of themed narratives for further therapeutic exploration. Essentially, following a dialogic encounter with the therapist, this 'self confrontation method' (Hermans and Oles, 1994) is constructed of scaled responses to personalised questions, which are then analysed using the correlation coefficient, to produce findings which enable insights into problematic 'internal' or 'external' positions, and ultimately, self-innovation. My study does not involve psychotherapy, however, and the 'PPR' is not the only analytical tool available to me. Indeed, there is an abundance of empirical

evidence which presents numerous different methods for analysing teachers' transcribed interviews and video recorded lessons (Bryman, 2008, pp. 273-338).

4.1. Answering the research questions

In total, the main sources of information which I have collected in order to explore teachers' developing understanding of enquiry equate to approximately fifteen hours of teachers' transcribed interviews and fourteen and a half hours of video recorded lessons. My initial dilemma therefore involves having to decide where to begin my analytical process. Indeed, I need to be certain that the information I have gathered will provide answers to my research questions. Consequently, I revisited the questions asked in my series of semi-structured interviews and I used a simple online concordance program (Reed, 2012) in order to explore the frequency of each word in an interview sample. This small scale content analysis gave an almost instantaneous indication of the content of teachers' transcribed interviews, and their appropriateness for my study, because the questions asked within the interview schedule resonate with my research questions for this thesis and volume of words which signify dimensions of teachers' 'dialogical selves' within the sample of interview data is high (Appendix I, **p. 164**).

4.1.1 Critique

Two issues emerge as a result of my decision to begin the analytical process in this way. The first concerns the influence of format of the interview transcriptions used in the online concordance program. The second involves the role and prominence of information from video recordings of teachers' lessons. In terms of methodology, teachers' transcribed interviews were simply copied and pasted into the web tool. No changes were made to their format. Indeed, the initials of the speaker and line numbers were included in the source sample for the resulting word list. Secondly, information from video recordings of teachers' lessons is notably absent from this stage of the analytical process but it has not been overlooked. Indeed, by selecting to begin my analysis with teachers' transcribed interviews, I am led to re-consider the various roles of each of my sources of information, and whether the transcribed interviews should be more prominent. I will address this issue in the section on using video recordings to crystallise findings (**p. 108**).

4.2 An integrated approach to analysis

An integrated approach to analysis is appealing yet controversial (Greene, 2008). However I perceive it as an opportunity to crystallise my emerging research findings by comparing the outcomes of my explorations of teachers' interview data and video data (Thomas, 1998, p. 8). From this perspective, I do not necessarily seek to synthesise information from each data source. Instead, I aim to develop insights into important aspects of teachers' 'dialogical selves', which can be missed by focussing on one particular method of analysis (Porter, 2011). The integration of analyses can also serve to satisfy expectations of validity held by some members of the research community, who seek triangulation (Sutton and Wheatley, 2003). Conversely, however, there is a need for caution in this process. It is important that I do not overly interpret and transform meanings to 'fit' with emerging findings (Yanchar and Williams, 2006).

My research follows a case study design. A common criticism of case study research targets 'thick' narratives, which are difficult to summarise (Flyvberg, 2006). Other researchers argue for allowing a case study to be sufficiently open for interpretation by the reader (Mattingly, 1991; Peattie, 2001). Both of these scenarios implicitly highlight the rich resources with which the researcher has to work as part of their study. In my case, I was unsure where to begin my analysis; with teachers' transcribed interviews or with examples of their video recorded lessons. Importantly, I needed to know if the resources I had collected as part of the KTP project and then later in 2011 would provide sufficient information for me to answer my research questions. Since I had already gained experience of working with interview transcriptions (Leat and Reid, 2009b; Leat and Reid, 2009a), I started here and followed a cycle of continuous revision until I felt I had reached a point, where it felt acceptable to stop.

4.3 Preparing teachers' interviews for analysis

Satisfied that teachers' transcribed interviews contain sufficient information for me to continue my exploration of their 'dialogical selves' (Hermans, 2001b), my next task was to prepare them for analysis. Bryman (2008) considers coding as the principal method of doing this. Coding enables inter-textual coherence, it facilitates systematic as well as situated analysis, and it allows for a responsive approach to data. Essentially, coding is the process of assigning a code to something so that it can be classified or identified (*ibid.*). Hermans' (*ibid.*, p. 363) standard list of 'internal' and 'external'

positions (Appendix J, **p. 165**) is an example of a coding system which identifies areas for development in therapy. Bernstein's (1996) concepts of 'classification' and 'framing' represent codes for exploring 'symbolic control' (**pp. 24-28**). My approach to coding each of the seven teachers' interviews provides a language for describing their 'dialogical selves' in order to identify their shifting perceptions of enquiry based learning over time. Furthermore, it represents a responsive, 'relational' approach to analysis which allows 'voices' to emerge, fade and interact within teachers' 'internal' and 'external' positions (Appendix K, **p. 166**).

From this perspective, I have opted for an inductive approach to coding teachers' transcribed interviews. Working through each teacher in alphabetical order of first name, their interviews in chronological order, and then each sentence within each interview, my coding system represents the teacher's utterance at that particular point in time as an interaction of an 'internal' position with an 'external' position. When applied to the teachers' transcribed interviews, each code appears as a combination of two numbers. The first two digits signify the teacher's 'internal' position. The final two digits represent their 'external' position (Appendix L, **pp. 167-169**).

4.3.1 Critique

There is more than one reason for being critical about this particular approach to preparing teachers' interview transcriptions for analysis. Principally, reasons relate to whether or not my approach acknowledges teachers' individual contexts and ways of expressing themselves, my rejection of coding and analysis software in the process, and my decision not to involve the teachers at this stage. Firstly, I did not involve the teachers in this process because I perceive it to be the role of the researcher and not the teacher. Indeed, I am better informed about the purposes and aims of this study, therefore I am the most appropriate person to make coding decisions. Secondly, I have chosen not to use popular coding and analysis software mainly because of my desire to be personally involved in the process. I want the freedom to track particular positions as I read them and they develop, rather than by searching for a code without seeing the whole document. Finally, in terms of my process of preparing the transcribed interviews for analysis, once identified, a code is applied to subsequent transcriptions.

I acknowledge that each individual teacher has their own style of expressing their perceptions of enquiry based learning. Indeed, the tone and structure of their individual discourses are very different. Importantly, however, my coding system has two functions. Primarily, it makes it possible to mark particular 'internal' and 'external' positions from my conceptual framework, which can then be analysed in greater detail at a later date. Secondly, the system generates patterns of prominence because some positions appear more or less frequently than others (Appendix M**, p. 170**). This is particularly useful for exploring the concept of 'dominance and social power' (Hermans, 2008, pp. 190-192) within teachers' shifting perceptions of enquiry.

4.4 Using information from video recordings to crystallise findings

My chosen method for analysing teachers' interview transcripts will produce findings relating to teachers' shifting perceptions of enquiry based learning over time. However, this is not the only focus of my research study. One of the main aims of the KTP project was to improve the quality of teaching and learning at Tableford School (**pp. 1-2**). This includes the concept of change, particularly within a restrictive culture of 'performativity' (Ball, 2000) in education in the UK (**p. 6**). In terms of analysis, my study requires an exploration of these areas. I therefore use information from video recordings of teachers' lesson to crystallise my findings relating to aspects of teachers' dialogical selves, most notably Hermans' (2008, pp. 192-194) dimension of 'openness to innovation', since I perceive the video recordings of teachers in action to be empirical evidence of their dialogical processes, and the extent to which they adopt enquiry based learning in their classrooms.

My method of preparing the video recordings for analysis (Table 6, **p. 70**) is primarily determined by key findings from teachers' transcribed interview data relating to talking, listening, observing and thinking (**p. 100**)[2]. Interactions are recorded every thirty seconds, and where it occurs, teacher talk and pupil talk is recorded verbatim. A completed proforma for analysing Chloe's video data is in Appendix N (**p. 171**). It demonstrates what Chloe is doing during each lesson her position in the classroom. This is important for identifying shifts in teachers' perceptions of enquiry based learning because I anticipate evidence of more reciprocal working relationships between

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[2] Codes 1-12 relate to aspects of teachers' talking, codes 13-15 relate to aspects of teachers' listening, codes 16-18 relate to aspects of teachers' observing and codes 19-21 relate to aspects of teachers' thinking. Additional codes 22-24 relate to student activity. Code 25 is used to record an aspect of the lesson which is not covered by codes 1-24.

the teachers and their students over time (**p. 4**). This includes the concept of physical space. I would expect teachers to increasingly position themselves alongside or amongst their students when developing enquiry.

Table 6: My coding system for teachers' video data

Code	Meaning
1	Teacher asks a question to an individual student
2	Teacher asks a question to a group of students
3	Teacher asks a question to the whole class
4	Teacher responds to a question from an individual student
5	Teacher responds to a question from a group of students
6	Teacher responds to a question from the whole class
7	Teacher makes a comment to an individual student
8	Teacher makes a comment to a group of students
9	Teacher makes a comment to the whole class
10	Teacher responds to a comment from an individual student
11	Teacher responds to a comment from a group of students
12	Teacher responds to a comment from the whole class
13	Teacher listens to an individual student
14	Teacher listens to a group of students
15	Teacher listens to the whole class
16	Teacher observes an individual student
17	Teacher observes a group of students
18	Teacher observes the whole class
19	Teacher thinks about an individual student
20	Teacher thinks about a group of students
21	Teacher thinks about the whole class
22	Noise level
23	Student asks a question
24	Student makes a comment
25	Other

Code	Meaning
F	Front of the room
B	Back of the room
BS	Beside a student/students
A	Amongst students

4.4.1 Critique

Some aspects of classroom activity are more obvious than others and therefore less difficult to code. For example, the position of the teacher in the classroom is beyond question. Conversely, I acknowledge that my records of examples of teachers' thinking in the classroom are open to my personal interpretation of events. Furthermore, although I have positioned my rationale for using video data towards the end of this section, this does not mean that their role within my case study is inferior to teachers' transcribed interviews. Indeed, by integrating both sets of data, my findings about teachers' developing understanding of enquiry based learning reinforce the rich complexities of their 'dialogical selves' (Hermans, 2001b).

4.5 Adapting Hermans' (2001a) matrices of 'internal' and 'external' positions to address contextual research issues

My approach to preparing teachers' interview transcriptions and video data for analysis has led to the creation of coding systems for exploring teachers' perceptions of enquiry based learning. In particular, I can organise the codes from teachers' interview data in matrices of 'internal' and 'external' positions, which are not dissimilar from Hermans' (2001a, pp. 327-328) example (Appendix D and Appendix M, **pp. 157 and 170**).

In order to demonstrate the potential of this model for exploring teachers' shifting perceptions of enquiry, I have highlighted the positions of codes 1/4, 7/32 and 18/32 from the first section of Andrew's first interview within my own matrix of 'internal' and 'external' positions (Table 7, **p. 72**). The interaction of Andrew's 'internal' position as 'I as a son' with the 'external' position 'My mother/father' sits at the intersection of positions 1 and 4. The interaction of his 'internal' position as 'I as a Student Performance Leader' with the 'external' position 'My other responsibilities' sits at the intersection of positions 7 and 32. Indeed, by repeating this procedure for each code, I can identify the number of times each position appears within teachers' interviews. This facilitates my exploration of the prominence of 'internal' and 'external' voices because I can account for the frequency of each position within each teacher interview.

Table 7: My matrix of 'internal' and 'external' positions using the first section of Andrew's first interview

1	**Interview number 6 with Andrew Walker. So Andrew, I want you to tell me about your extended**
2	**enquiry.**

3	57/31 24/28
	Well, I did it with Elizabeth, totally out of my comfort zone because I even failed my GCSE French, well I got a
4	
	D.

5	**That's not a fail**

6	1/4 24/4
	Just about. It was in my Mam and Dad's eyes: " You've failed boy". I think at the time that it came
7	18/32 7/32
	up I was a bit pulled doing other things anyway. With the SPL job so I kind of almost went with the
8	27/31 31/29 27/31
	flow a little bit with what was happening initially. I was, yeah, I was happy to go along with it. I think

		0	4	6	7	9	10	15	21	23	24	25	26	28	30	31	32	33	34	35
		Me/myself	My mother/father	My students in enquiry sessions	My students in non-enquiry sessions	My Principal	My fellow enquiry group teachers	Elizabeth Davies	My fellow teachers	A problematic person/people	My KTP Associate	My timetable	My classroom	My personal prior experience	The Habits of Mind	My enquiry/enquiries	My other responsibilities	Other people	My curriculum area	Other curriculum areas
1	I as a son/daughter	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	I as a teacher (general)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
5	I as a subject teacher	0	0	2	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	1
6	I as enquiry teacher	0	0	4	0	0	0	0	0	2	0	0	0	1	4	2	0	0	0	0
7	I as Student Performance Leader	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
9	I as certain	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
10	I as challenged	0	0	3	0	0	0	1	0	2	0	0	0	0	0	1	0	0	0	0
11	I as comfortable	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
12	I as constrained/controlled	0	0	0	1	0	0	1	0	0	0	1	3	0	0	2	1	0	0	0
13	I as creative	0	0	1	0	0	0	1	0	0	0	0	0	0	6	7	0	0	0	1
14	I as critical	0	0	0	0	0	0	1	0	0	0	0	0	0	2	1	0	0	0	2
15	I as disempowered	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
16	I as disengaged	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
17	I as disorgansied	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
18	I as distracted	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0
19	I as doer/user	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

4.5.1 Critique

Hermans involves clients of psychotherapy in the construction of these matrices. Clients provide scaled responses to a standard list of positions, which then facilitates bivariate analysis. A copy of his standard list of 'internal' and 'external' positions can be found in (Appendix J, **p. 165**). In his rationale for this list, Hermans (2001a, p. 331) explains that it is intended to provide participants with a number of positions that have sufficient variation so that they have the opportunity to select those positions that they recognise as relevant in their own lives. Going further, he acknowledges the need for position and opposition in the process of meaning construction (Marková, 1987), therefore his standard lists include a series of opposite pairs. Although I accept Hermans' conceptual framework, to adopt this list without question would refute the practical and ethical issues at the heart of my research. Practically, my choice of methodology and analysis must be appropriate to the research questions so that my findings relate to teachers' developing understanding of enquiry. From this perspective, some of Hermans' positions (for example, 'I as sexual') are not appropriate to my work. Also, from an ethical point of view, I have emphasised the importance of the concept of 'relationality' (**p. 10**) therefore I must allow for the emergence of new possibilities (Kvale, 2002) and new 'internal' and 'external' positions, which are appropriate to the context of my research.

Secondly, Hermans' analytical approach identifies the relationships between 'internal' and 'external' positions in terms of statistical significance, using the correlation coefficient. I have rejected this. Firstly, because I did not have the capacity to return to Tableford School and ask the teachers to complete a series of scaled responses immediately after the end of the KTP project. Secondly, even if I had done so, I am critical of its purpose within the context of my study because it conflicts with my 'relational' point of view. Indeed, my matrices of teachers' 'internal' and 'external' positions produce perceptions which are based on my interpretations of teachers' transcribed interviews. By asking teachers to be involved in the creation of the matrices, I would risk adding another layer of complexity, or even annulling their original perceptions altogether (Gonçalves and Salgado, 2001, p. 371).

4.6 Adapting Hermans' (2001a) 'Personal Position Repertoire' to address contextual research issues

Hermans (2001a, pp. 355-360) presents the cases of a Dutch woman living in the Netherlands, married to an Algerian man, and an Algerian man living in the Netherlands, married to a Dutch woman (Appendix E: Figures C and D, **p. 158**) to exemplify his 'model of positions of the dialogical self' (Hermans, 2001b, p. 253) and the potential of the 'Personal Position Repertoire' as a visual method of presenting findings from his matrices of 'internal' and 'external' positions. Here, the 'self' is represented as a space composed of a multiplicity of positions. 'Internal' positions, within the inner circle, are felt as part of the internal 'self', whereas 'external' positions, within the outer circle, are felt as part of the environment, and external 'self' (Appendix E: Figure B, **p. 158**).

As a visual method of presenting findings, my radar graphs produce living dialogic spaces because they include arrows which exemplify the movement of teachers' perceptions of enquiry based learning over time (Figure 9, **below**).

Figure 9: A radar graph showing shifting perceptions of enquiry based learning
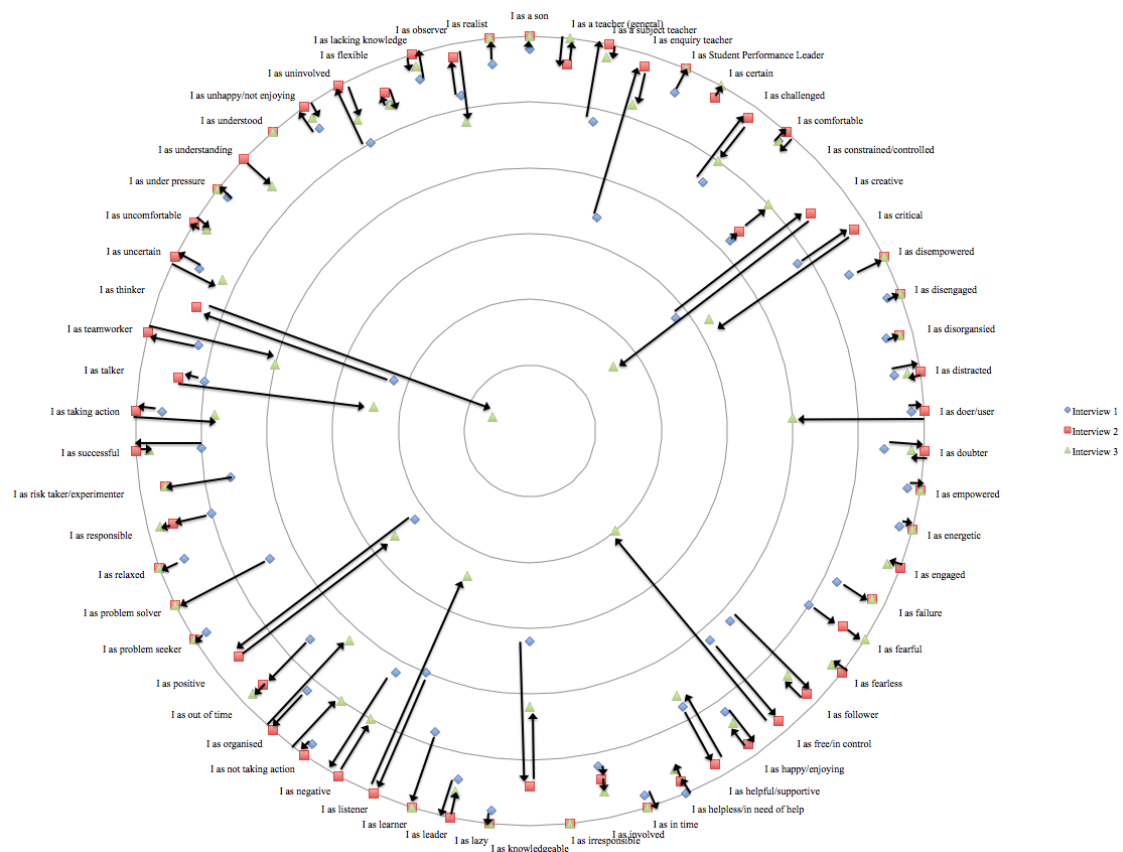
Positions appear in a clockwise direction around the outside of each graph in the order they emerged during the early stages of preparing my system of coding teachers' interview data. The extent to which each position shifts is determined by its increasing or decreasing prominence in the teacher's matrix for each interview. Positions which feature along the outside edge of the graph occur less frequently than those which are placed nearer the centre. They move towards the middle of the graph as a result of an increase in the number of times they feature in an interview. Here, there is scope for mathematical error, and also misunderstanding in relation to the terms 'increasing prominence' and 'decreasing prominence'. In relation to the former, each calculation was performed in a Microsoft Excel spreadsheet and checked by a colleague. Furthermore, radar graphs represent the numerical value of teacher's positions as they appear in each matrix. This allows me to account for their placement.

Figure 9 (**p. 74**), is an example of Andrew's radar graph. It shows the prominence of each of his 'internal' positions within each of his interviews. Interview 1 data appears as a blue diamond, a red square signifies interview 2 data, and interview 3 data is represented by a green triangle. Arrows signify the general directionality of his shifting perceptions as each position increases or decreases with prominence over time. The prominence of Andrew's 'internal' positions 'I as creative', 'I as free/in control', 'I as critical', 'I as listener' and 'I as thinker' all clearly increased over time. Hermans' model does not demonstrate this kind of shift. There is also evidence that Andrew's 'internal' positions 'I as constrained / controlled' and 'I as involved' underwent the greatest shifts over time. By exploring the relationships between these 'internal' positions and Andrew's 'external' positions, it is possible to uncover aspects of dominance and social power as reasons for his shifting perceptions of enquiry based learning.

4.6.1 Critique

The 'PPR' is an interesting tool for visually representing findings relating to 'internal' and 'external' positions because both Hermans' model and subsequent adaptations (Kluger *et al.*, 2008) provide very clear snapshots of the multiple dimensions of an individual person's 'dialogical self'. However, my research study is concerned with *how* teachers' perceptions of enquiry based learning shift *over time*, therefore I am compelled to pursue a visual model which demonstrates movement and emerging

positions as I interpret each of the teachers' transcribed interviews, which cover a period of three and a half years. Furthermore, although Hermans (2001a, p. 341) discusses the concept of 'emplotment' which allows for the juxtaposition of events over time, it is unclear how he has done this exactly within the 'PPR'. Indeed, in the cases of the Algerian man and the Dutch woman, I cannot find reasons to explain why the 'internal' and 'external' positions are placed in the precise positions that they are. Using radar graphs, my adaptation of the 'PPR' includes a rationale for the placement of each position.

4.7 Maintaining teachers' original voices

I have written very little about the involvement and influence of the seven teachers in my analytical approach. Indeed, I have an overview of data from teachers' interview transcriptions and video recordings. This perspective encompasses aspects of the whole study and allows me to explore the four dimensions of teachers' 'dialogical selves'. By including teachers' feedback in the analytical process, their individual viewpoints have the potential to create additional dimensions to my findings. For example, not only are teachers able to voice their opinions regarding aspects of validity, they are at the same time governing my accountability as a researcher, as I endeavour to develop my knowledge of their shifting perceptions of enquiry based learning. Indeed, by choosing to include teachers' feedback in my findings, the process by which I make sense of their developing understanding of enquiry is fluid and interactional over time.

In practical terms, then, I returned to Tableford School on a number of occasions between September 2011 and July 2012 in order to hold a series of short thirty minute meetings with each individual teacher. Initially, I asked the teachers to check the content of their transcribed interviews and return them to me with any amendments. Then, I introduced my method of analysis, including the coding systems, which I had used to prepare the interviews and video recordings. During our third meeting, I presented each teacher with a copy of their 'Personal Position Repertoires' (Hermans, 2001a) of 'internal' and 'external' positions, and a summary of findings from their interview and video data. Lastly, I gave each teacher a copy of my final version of findings. In meetings three and four, teachers wrote down their feedback using a template for suggesting 'plus-minus-interesting' aspects of my work. An example of teacher feedback from Isobel can be found in Appendix W (**p. 180**). Since the teachers

had prior experience of completing this type of activity with their students in their classrooms, it was not an onerous task. I did not include this activity in our first two meetings, whose purpose was primarily to check the accuracy of my resources.

4.7.1 Critique

This dimension of my analytical process was messy. It involved a number of issues including the influence of the passage of time on teachers' perspectives and their occasional disagreements with my findings. As a result, I considered omitting teachers' feedback from my study altogether. Going further, three of the teachers have been promoted to more senior positions in school since the end of the KTP project. I perceive that this at least partly influenced their responses to the 'plus-minus-interesting' task because their viewpoint has shifted as a consequence of their additional responsibilities. Importantly, however, I view my decision to include feedback from the seven teachers as a test of my commitment to dialogic values and beliefs of viewing a phenomenon from different perspectives (Marková, 1987) in order to develop my understanding of it.

4.8 Conclusion

Although it was originally intended to be used in conjunction with quantitative and qualitative research methods (Hermans, 2001a, pp. 323-324), I have struggled to find empirical examples of the 'PPR' as a tool for the researcher to directly analyse or present findings from interviews and video recordings, which are my main methods of data collection. Rarer still is empirical evidence of the 'PPR' as a tool for analysis within educational research, let alone within the context of teachers' developing understanding of enquiry based learning in a state secondary school in the UK. Importantly, however, the 'PPR' is a framework for allowing new knowledge about the 'self' to emerge as part of a fluid inter-and intra- personal process. This is a notable concept within my work, which also exposes power differentials (Gonçalves and Salgado, 2001). As a consequence, I acknowledge that I cannot wholly understand teachers' perceptions, however I can draw on my personal experience and I can present findings, which are complemented not only by data from video recordings of teachers' lessons, but also a dimension of teacher feedback. From this perspective, the 'PPR' is an innovative tool for analysing teachers' developing understanding of enquiry because

it is a mechanism for demonstrating shifting 'internal' and 'external' positions over time.

Chapter 5. Findings:

Uncovering the interactions of teachers' 'dialogical selves' (Hermans, 2001b)

5.1 Introduction

My study of teachers developing understanding of enquiry based learning consists of multiple dimensions. Dimensions include the interplay of teachers' personal and social positions as part of the 'other-in-the-self', 'multiplicity-in-unity', 'dominance and social power', and 'openness to innovation' (Hermans, 2008). In terms of research design, my choice of embedded single case study includes its potential for exploring shifting perceptions not only at the level of the individual teacher, but also groups of teachers, and the whole group. Within this section, I acknowledge that I am limited by the number of words available to me as part of this thesis therefore I do not have the space to respond to every single aspect of each dimension of teachers' 'dialogical selves' (*ibid.*). Therefore, I will draw on my experience of analysing the data within this study to prioritise enough new information to stimulate a discussion of the main findings (**pp. 117-135**). My priorities are determined by the features of Hermans' (*ibid.*) 'dialogical self theory' in relation to a culture of 'performativity' (Ball, 2000) in UK schools.

I will begin by using interview data to introduce the teachers involved in this study in their own words. In doing so, I will not only provide an initial context for my findings, I will also demonstrate the concept of multiple voices from the outset. Next, I will present findings from the dimension of the 'other-in-the-self', since they exemplify the multiplicity of teachers' 'internal' and 'external' positions (*ibid.*). Within this dimension of the 'dialogical self' (*ibid.*), I will address the first of my two research questions and focus on providing initial examples of teachers' shifting perceptions of enquiry based learning over time. Here, findings result from analyses at the level of the group of teachers from interview data. Remaining at the level of the group, there is evidence of 'multiplicity-in-unity' when 'internal' positions fluctuate to suggest agreement, disagreement and tensions. Some 'internal' positions increase in prominence. This provides evidence of emotions or roles which teachers discuss frequently in their interviews. Disagreement and tensions occur where positions fluctuate or decrease in prominence. As in the previous section, these findings also

emerge from my analyses of teachers' interview data. Disagreement and tensions are the primary features of findings relating to the dimension of 'dominance and social power*' (*ibid.*). Here, I report perceptions at the level of the group of teachers as well as individuals. Interview data remain the source of evidence for these findings, which relate to people, practice and teachers' selves. Lastly, in terms of 'openness to innovation' (*ibid.*), findings result from my analyses of interview and video data. They portray not only shifting perceptions, but emerging ones, as teachers respond to the process of developing enquiry based learning in their school. References to teachers' interview data include the first name of the teacher, the interview (I1, I2 or I3), and the relevant lines of the transcription. In order to demonstrate particular examples, I have also added the relevant code from my analytical process (Table 7**, p. 72**). Video data is referenced in a similar way; teacher's first name, the recording (R1, R2, R3 or R4) and the position of the extract in minutes and seconds.

5.2 The teachers

Teachers describe their involvement in the KTP project in their second round of interviews;

5.2.1 Chloe

> 'I was approached to join it at the end of 2007. I met Anna. I was one of the original members. I was in my fourth year of teaching and I felt it was the right time. I was very enthusiastic and felt it sounded good.'
>
> (Chloe, I2, ll.2-4)

5.2.2 Isobel

> 'I was asked by the Headteacher and Deputy Head in January 2008 – at the beginning. They said we were going to have someone who would come in who would work on enquiry. They said it would improve teaching and learning. I agreed partly because I was in my second year of teaching and also because I thought it would be more beneficial for the students – it would make them more creative and independent.'
>
> (Isobel, I2, ll.2-6)

5.2.3 Matthew

> 'I became involved right at the beginning. I was on the interview panel for Anna's role. The Head was keen for Heads of Department to become involved to give it prestige – to give it more of an influence.'
>
> (Matthew, I2, ll.2-4)

5.2.4 Michael

> 'At the end of 2006/2007 a notice came round saying that a
> student would be coming to do a research project. I put my
> name forward. They were particularly wanting people from the
> Maths department. In 2007/2008 I was still interested and we
> met Anna, and that was it.'
>
> (Michael, I2, ll.2-4)

5.2.5 Christopher

> 'I was approached at the beginning of the project by Anna –
> she asked if staff wanted to be involved. It sounded interesting
> and I had done some work on thinking skills in science at a
> previous school.'
>
> (Christopher, I2, ll.2-3)

5.2.6 Ethan

> 'It was Christmas last year, [the Deputy Headteacher]
> approached me about developing enquiry in the curriculum,
> mainly in Key Stage 3. I was keen to be involved.'
>
> (Ethan, I2, ll.2-3)

5.2.7 Andrew

> 'I was there from the start – the Head thought it would be a
> good thing to do. I have found the time hard, even though I am
> committed – I feel that my lessons haven't been enquiry
> lessons. I am doing it with a group and it has informed my
> practice. I think it needs a commitment on timetabling –
> especially initially.'
>
> (Andrew, I2, ll.3-6)

Within this series of short extracts, the teachers present a range of reasons for becoming involved in the KTP project. In doing so, they echo the rhetoric of the Principal and the Deputy Principal, which highlights the need to improve teaching and learning in their school and provide benefits for the students. Matthew's motivation for being involved signifies his perception of the influence of middle leaders in ensuring the success of the project. Chloe and Isobel both seek opportunities to participate in something which will further develop their practice, whereas Christopher reflects on previous experiences to influence his decision to participate. His extract also suggests that I, as the KTP Associate, played a role in persuading him to take part. Michael's view is entirely different, however. His interest in the project is personal. I detect the voices of 'others' within teachers' dialogue. For example, Matthew's reason for being involved in the KTP project echoes the messages conveyed by the school Principal. This is an early insight into Hermans' (2001b) concept of 'other-in-the-self'.

5.3 'Other-in-the-self'

How do teachers' perceptions of enquiry based learning shift over time?

- Teachers' perceptions are represented by 70 *'internal'* positions, 42 'external' positions and 2619 'internal-external' position interactions.
- Multiple 'internal' and 'external' positions interact to portray shifting perceptions of enquiry based learning over time.
- 'External' positions indicate the structure of the social context of this research study**.**

'Other-in-the-self' is a term used by Hermans (2008, pp. 186-188) in order to describe the processes of negotiation and interchange which involve 'internal' and 'external' positions of the 'dialogical self' (*ibid.*). I will begin this section by presenting the range of 'internal' and 'external' positions within my research study. Next, I will use findings from the teachers' matrices of their interview data to provide an overview of their shifting perceptions of enquiry based learning. In the final part of this section, I will present findings from my analysis of teachers' 'external' positions to identify four domains of teachers' developing understanding of enquiry within this study.

5.3.1 Teachers' perceptions are represented by 'internal' and 'external' positions
Findings from my process of coding teachers' transcribed interviews include a total of 70 'internal' positions, 42 'external' positions and a total of 2619 'internal-external' position interactions. Principally, teachers' 'internal' positions reflect the different roles they assumed as they developed their understanding of enquiry, as well as a range of positive and negative emotions over time (Table 8**, p. 83**). Teachers' 'external' positions connote the involvement of people and contextual factors in their experiences of developing understanding of enquiry based learning (Table 9, **p. 84**). They also include tools which were introduced as part of the KTP project (Figure 2, **p. 5**).

Table 8: Dimensions of teachers' 'internal' positions

Roles

I as a colleague
I as creative
I as doer/user
I as follower
I as idealist
I as individual worker
I as leader
I as learner
I as a Learning Area Leader
I as listener
I as a man/woman
I as observer
I as a parent
I as realist
I as a son/daughter
I as a Student Performance Leader
I as talker
I as a teacher (enquiry)
I as a teacher (general)
I as a teacher (subject)
I as team worker
I as thinker

Positive emotions	**Negative emotions**
I as certain	I as challenged
I as comfortable	I as constrained/controlled
I as curious/interested	I as critical
I as empowered	I as disempowered
I as energetic	I as disengaged
I as engaged	I as disorganised
I as fearless	I as distracted
I as flexible	I as doubter
I as free/in control	I as failure
I as happy/enjoying	I as fearful
I as helpful/supportive	I as helpless/in need of support
I as in time	I as inflexible/fixed
I as involved	I as irresponsible
I as knowledgeable	I as lacking knowledge
I as organised	I as lazy
I as positive	I as negative
I as problem solver	I as not taking action
I as relaxed	I as out of time
I as responsible	I as problem seeker
I as risk taker	I as uncertain
I as successful	I as uncomfortable
I as taking action	I as under pressure
I as understanding	I as unhappy/not enjoying
I as understood	I as uninvolved

n = 70

Table 9: Dimensions of teachers' 'external' positions

People	Personal experience
A fellow teacher	My other responsibilities
A problematic person/people	My personal prior experience
Andrew Walker	The residential weekend
Anthony Jones	
Chloe Taylor/Isobel Smith**	
Christopher Lewis	
Daniel Williams	
Elizabeth Davies	
Ethan Thomas	
Matthew Brown	
Mia Evans	
Michael Wilson	
My child/children	
My fellow enquiry teachers (group)	
My fellow teachers	
My husband/partner	
My KTP Associate	
My line manager	
My mother/father	
My Principal	
My students in enquiry sessions	
My students in non-enquiry sessions	
My teacher	
My wife/partner	
Me/myself	
Other people*	

Contextual factors	Enquiry tools
My classroom	Enquiry/my enquiries
My curriculum area	The assessment framework for enquiry skills
My rules and routines	The Habits of Mind***
My timetable	The toolkit for enquiry
My school	
Other curriculum areas	
Other things*	
The KTP project	
Whole school CPD	

n=42

A critique of these categories appears at the end of this section. In particular, I evaluate the positions I have marked with asterisks (*) in Table 9 (**above**). Importantly, however, by placing them in matrices, teachers' 'internal' and 'external' positions begin to portray shifting perceptions of enquiry when their prominence varies

and the number of interactions changes from interview to interview (Appendix M, **p. 170**).

5.3.2 Multiple 'internal' and 'external' positions interact to portray teachers' shifting perceptions

Table 10 (**below**) summarises the number of different 'internal' and 'external' positions which appear in each individual teacher's interviews. At this early stage of presenting findings, I note the emergence of patterns which require further investigation. For example, the total number of 'internal' positions for Andrew, Ethan and Isobel fluctuates over time. This is not the case for Chloe and Michael, who demonstrate an increasing number. Conversely, the number of 'internal' positions decreases for Christopher and Matthew. The summary information for teachers' 'external' positions follows a similar pattern. Going further, some positions are unique to particular teachers (both Andrew and Ethan demonstrate evidence of the 'internal' position 'I as a son') whereas other positions are in evidence in all of the teachers' interviews; the 'internal' position 'I as a thinker' and the 'external' position 'My students in non-enquiry sessions'.

Table 10: The number of teachers' different 'internal' and 'external' positions by interview

Number of different 'internal' positions			
Teacher	Interview 1	Interview 2	Interview 3
Andrew	43	25	29
Chloe	18	30	33
Christopher	26	25	21
Ethan	24	28	27
Isobel	27	22	33
Matthew	24	24	23
Michael	N/A	25	28

Number of different 'external' positions			
Teacher	Interview 1	Interview 2	Interview 3
Andrew	19	16	24
Chloe	15	18	20
Christopher	13	14	8
Ethan	21	19	22
Isobel	16	15	19
Matthew	14	16	14
Michael	N/A	16	19

n = 2619 different interactions

These initial observations offer insights into the potential for exploring Hermans' (2008) dimensions of 'multiplicity-in-unity', 'dominance and social power' and 'openness to innovation' because there is no particular pattern of interactions at this stage. This triggers a personal curiosity to find out even more about the interplay of teacher's 'internal' and 'external' positions over time.

5.3.3 'External' positions indicate the structure of the social context of this research study

Before embarking on a more detailed exploration, I am able to use findings from teachers' 'external' positions to indicate the structure of the social context of my research study. These findings exist in Figure 10 (**p. 87**) in an adaptation of Hermans' model of positions of the 'dialogical self'. Positions are sequenced in the numerical order of their code (Appendix K, **p. 166**). Exceptions to this are where the length of the text is too great for the intended order. In these cases, positions are placed so that they can be read in one line and in the original font size. The 'outside' domain relates mainly to the voices of people or contextual factors outside of school. The 'external' domain principally reflects the voices of colleagues or students within school who were not directly involved in the KTP project. It also includes general school systems and contextual factors which influence and affect teachers' practice. The 'internal' domain involves teachers' own voices. This is an issue which I will address in the final section of my findings regarding teachers' shifting and emerging positions and 'openness to innovation' (**pp. 106-115**).

Going further, I have also identified a sub-domain; 'external – KTP project', which includes relationships, systems and contextual factors in school which *were* directly involved in the KTP project. This includes the voices of students, other teachers, both collectively and individually, the KTP Associate and the school Principal. In order to highlight this domain for readers of this work, I have included a dotted line to denote the proximity of these 'external' positions to the 'internal' domain of teachers' 'selves'.

Figure 10: The structure of the social context of my study
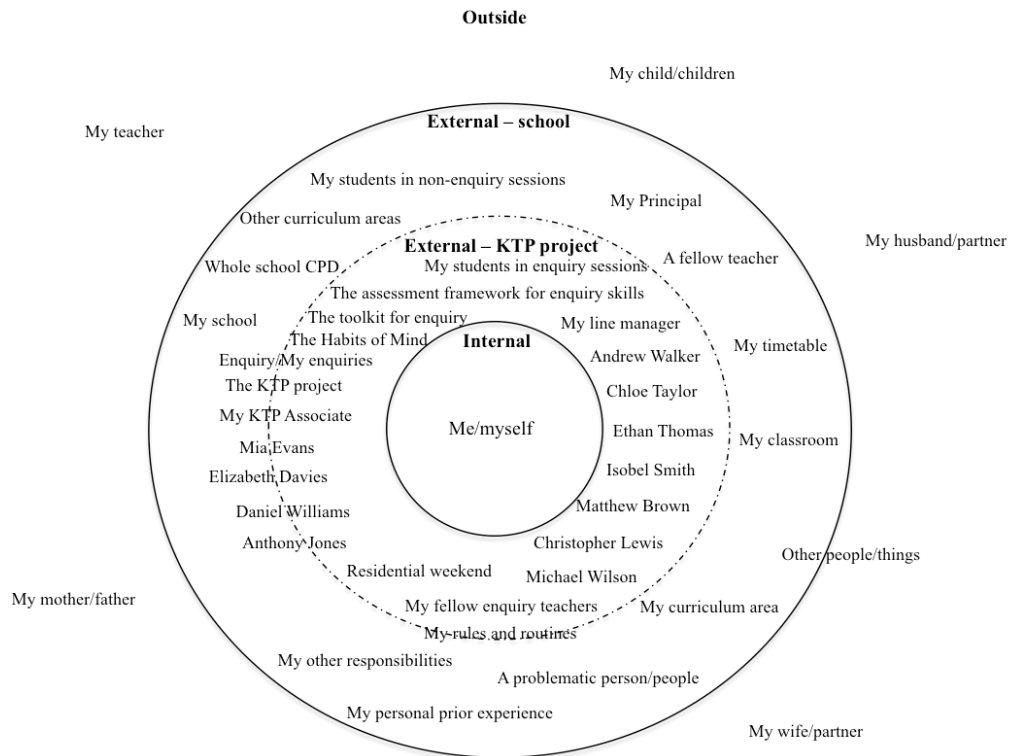
Within the wider contexts of 'performativity' (Ball, 2000) and change in UK education (Kennedy, 2005), I am particularly keen to find out more about the manner in which teachers' 'internal' positions interact with 'external' positions (Hermans, 2001b) from within the KTP project compared to those within school, outside school, or even within the teachers themselves since I anticipate agreement, disagreement and tensions which affect teachers' shifting perceptions of enquiry based learning over time.

5.3.4 Critique

Criticisms of these initial findings relate to the manner in which I have categorised teachers' 'internal' and 'external' positions (*ibid.*), the range of 'internal' and 'external' positions within each teacher interview, as well as the number of interactions, and also to my adaptation of Hermans' (*ibid.*) model of the positions of the 'dialogical self'.

My rationale for categorising teachers' 'internal' and 'external' positions relates to the wider context of my study which includes issues of 'dominance and social power' and 'openness to innovation' (Hermans, 2008). Indeed, I intend to draw on these categories

when I discuss my findings in the next chapter of my work because they are central concepts to the theme of 'performativity' in UK education (Jeffrey and Troman, 2012). I acknowledge that my choice and placement of each position within a category is subjective. For example, the 'external' position 'Other people/things' appears in more than one category so that the total number of positions equals forty-two and not forty-one. This is because a small number of 'external' positions emerged at the end of the final stage of analysis and I grouped them together. Only when I sharpened the focus of my findings, did I realise that they relate to different dimensions of the teachers' 'dialogical selves' (Hermans, 2001b). Secondly, I present Chloe Taylor and Isobel Smith as one 'external' position. This is because they worked very closely together in developing their understanding of enquiry and the other teachers often referred to them together. I wanted to highlight this in my findings. Finally, as an 'external' position, 'The Habits of Mind' relate to teachers' *perceptions* of Costa and Kallick's (2000) framework of alternative intelligences, which was adopted in order to develop a framework for assessing enquiry skills at Tableford School (**p. 5**). Teachers' perceptions do not always echo Costa and Kallick's (*ibid.*) intentions. In order to highlight this difference, I present teachers' perceptions as 'the 'external' position 'The Habits of Mind'. Where teachers refer to the original source materials, I will include the appropriate reference to Costa and Kallick's (*ibid.*) work.

Going further, I report a total of 70 'internal' positions and 42 'external' positions. However without scanning through each of the matrices, it is unclear in my table of positions by interview and by teacher (Table 10, **p. 85**) exactly how they occur in teachers' coded interviews, particularly since they were not fixed[3] but continued to emerge until coding was completed on the last interview transcription. Indeed, each teacher interview is different. They vary in length and present the interactions of 'internal' and 'external' voices at a point in time. It is possible to cross reference the location of each position within each interview in my matrices of teachers' interview data (Table 7**, p. 72**) however this detracts from my more pressing interest in *how* the positions shift over time.

---

[3] 'Internal' positions 'I as realist', 'I as idealist' and 'I as curious/interested' did not feature in teachers' first interviews. Neither did external positions 'Other curriculum areas', 'The KTP project', 'Whole school CPD', 'The assessment framework for enquiry', 'My school' and 'The residential weekend'.

Next, it is reasonable to be critical of my adaptation of Hermans' (2001b) model of positions of the 'dialogical self' (Appendix E, **p. 158**). Indeed, I do not propose a rationale for plotting teachers' 'external' positions but rather place them in a clockwise order of rotation within each domain, which is consistent with the pattern in which they emerged during my process of analysis. Furthermore, I offer no explanation for my positioning of 'external' positions 'My rules and routines' and 'Enquiry/my enquiries', for example, which lie on a perceived boundary between contextual factors which are internal to the KTP project and those which concern the wider context of the school. This is intentional and reserved for the final section of my findings, where I will present evidence of individual teachers' developing understanding of enquiry based learning as a result of 'dominance and social power' (**pp. 99-105**).

Finally, I have come to realise that my representation of Hermans' (*ibid.*) model includes a boundary between the 'external' domain of the KTP project and the 'external' domain of the school. This is a particularly interesting feature of my findings when considered in relation to my presentation of Bernstein's (1996) theory of 'symbolic control' (**pp. 21-28**), which argues in favour of weak contextual factors and the flow of dialogue.

5.4 'Multiplicity-in-unity'

**How do teachers' perceptions of enquiry based learning
shift over time?**

- Teachers' 'internal' and 'external' positions increase in prominence, decrease in prominence and fluctuate over time.
- Interactions between positions provide evidence of teachers' developing understanding of enquiry.
- Teachers' 'internal' position 'I as taking action' decreases in prominence over time.
- 'Internal-external' position interactions suggest the influence of 'dominance and social power' (Hermans, 2008) on enquiry 'tools'.

In this section, I focus my findings on the manner in which teachers' perceptions of enquiry based learning shift over time. Indeed, Hermans' (2008, p. 185) concept of 'multiplicity-in-unity' includes the interactions of 'internal' and 'external' positions,

which allow for multiple voices, agreement and disagreement. After sharing visual representations of teachers' shifting 'internal' and 'external' positions, I will present the results of my analyses of teachers' perceptions of specific aspects of enquiry; 'Enquiry/my enquiries, 'The Assessment Framework for enquiry skills', 'The toolkit for enquiry' and 'The Habits of Mind'. Finally, I will uncover additional voices, which suggest the influence of 'dominance and social power' (*ibid.*).

5.4.1 Teachers' 'internal' and 'external' positions increase in prominence, decrease in prominence and fluctuate over time

Appendices O-U (**pp. 172-178**) include radar graphs of shifting 'internal' positions from the data within the matrices of teachers' transcribed interviews, and a table of the prominence of teachers' external positions over time. Teachers' 'internal' positions are dominated by external voices which involve a number of roles and negative emotions in developing understanding of enquiry based learning. For example, the role 'I as creative' increases in prominence over time for Andrew, Christopher, Ethan, Matthew and Michael whereas it fluctuates for Isobel and becomes increasingly less prominent for Chloe. Another role, 'I as thinker', is prominent within each teacher interview however it interacts with 'external' positions to fluctuate over time for Andrew, Chloe, Ethan, Isobel, and is increasingly less prominent for Matthew and Michael. Concerning negative emotions (Table 8, **p. 83**), 'I as challenged' is an increasingly prominent 'internal' position for Isobel and Michael yet it fluctuates for Chloe, Christopher, Ethan and Matthew. I intend to draw on these findings in order to present aspects of 'dominance and social power' (Hermans, 2008) in the next section of my work. From there, I will share each individual teacher's shifting perceptions of enquiry within the final section of this chapter. For now, however, I will pursue findings which relate to my main research question by exploring the interaction of 'external' positions concerning enquiry 'tools' (Table 9, **p. 84**); 'Enquiry/my enquiries', 'The assessment framework for enquiry skills', 'The toolkit for enquiry' and 'The Habits of Mind'.

5.4.2 Interactions between positions provide evidence of teachers' developing understanding of enquiry

The 'external' position 'Enquiry/my enquiries' interacts with seventeen different 'internal' positions over time (Appendix V, **p. 179**). Many of these 'internal' positions vary in prominence and fluctuate[4]. Some become less prominent[5]. At this second stage of presenting my findings, although I have the opportunity to explore the interactions of the most prominent 'internal' positions over time; 'I as thinker', 'I as creative', and 'I as positive', I am especially interested in the interactions of the 'external' position 'Enquiry/my enquiries' with 'internal' positions 'I as understanding' (59/31), which is increasingly prominent, 'I as taking action' (52/31), which is decreasingly prominent, and 'I as not taking action' (42/31), which also decreases in prominence. Indeed, by investigating these relationships further, I will not only present initial findings in relation to the title of my study, I may also begin to uncover examples of agreement, disagreement and tensions which affect teachers' shifting perceptions of enquiry.

In the initial round of teachers' interviews, only Ethan presents three examples of the interaction between the 'internal' position 'I as understanding' and the 'external' position 'Enquiry/my enquiries'. At first, he expresses his frustration with a colleague because he wanted to 'get going' (Ethan, I1, 59/31, ll.33-34,) however he understands that 'you need to plan these things properly' (*ibid.*). Next, he demonstrates his understanding of the need for students to take ownership of an enquiry (*ibid.*, ll.68-70). In his third example, Ethan recognises why he got 'bogged down' in certain aspects of a joint enquiry with a colleague in Science;

> 'I can see why we did that in that perhaps we weren't as
> confident that they would be able to do that on their own…'
>
> (*ibid.*, ll.94-96)

Further examples of the interactions of these positions appear in the second round of interviews, with Chloe, Matthew and Michael. For example, Chloe (I2, 59/31, ll.53-55) describes a 'penny drop moment';

> '…when after debating what enquiry is I realised it was
> making them [students] become independent learners which is
> a life skill.'

Matthew's (I2, 59/31, ll.8-9) understanding of enquiry is particularly clear;

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[4] 'I as thinker', 'I as leader', 'I as doer/user', 'I as positive', 'I as organised', 'I as knowledgeable', 'I as successful'.
[5] 'I as creative', 'I as involved', 'I as critical', 'I as challenged', 'I as out of time', 'I as uncertain', 'I as risk taker'.

'My understanding of enquiry is that students are asking
questions of themselves and leading their own learning.
And more importantly they want to ask questions.'

Lastly, Michael's understanding of enquiry represents the voices of 'most teachers' who would like their students to 'take a bit of responsibility' and 'be a bit more proactive' (Michael, I2, 59/31, ll.11-14). Indeed this perception is a perfect example of Bakhtin's (1981) 'heteroglossia': although the utterance is Michael's, he presents views which he has heard in the voices of other teachers in the school regarding the development of enquiry based learning;

'(…) this was seen as something that could make students
a bit more proactive.' (*ibid.*, ll.13-14)

By the third round of interviews, the prominence of the *'internal'* position 'I as understanding' increases to include interactions from Andrew, Ethan, Matthew and Michael. For Andrew, (I3, 59/31, ll.81-83) enquiry is an opportunity to 'be more flexible and more open*'*. Ethan (I3, 59/31, l.90) perceives enquiries as 'big two or three lesson projects' and Michael's (I3, 59/31, ll.131-132; *ibid.*, l.144; *ibid.*, ll.155-156) perception requires students to work responsibly in groups. Interestingly, Matthew is able to offer a rationale for developing enquiry based learning in his school. Indeed, his understanding shifts from the perception he presents in his first interview. In addition to students' capacity to 'ask the right questions', he includes the skill of problem solving;

'(…) students taking what they know, or information
they are given and applying it in new situations.'
(Matthew, I3, 59/31, ll.6-12)

Matthew (*ibid.*, ll.89-92) defines his rationale for developing his understanding as 'the right thing to do' which required 'a conscious effort to gain an understanding of the process of enquiry itself'. Indeed, the concept of developing understanding as a process rather than an outcome is important for him (*ibid.*, ll.112-120).

These findings portray varying degrees of teachers' understanding of enquiry based learning over time. For Ethan and Michael, the 'internal' position 'I as understanding' relates to contextual factors. Andrew and Chloe's understanding of enquiry concerns systems. However for Matthew, developing understanding of enquiry includes a personal imperative and a contingent approach.

5.4.3 Teachers' 'internal' position 'I as taking action' decreases in prominence over time

The 'internal' position 'I as taking action' only interacts with the 'external' position 'Enquiry/my enquiries' in the initial interviews with Christopher and Isobel. Here, Christopher (I1, 52/31, ll.186-188) describes the compatibility of enquiry based learning with Science and states that he ensures there are elements of it in classroom practice. As for Isobel (I1, 52/31, ll.46-47), at the time of her first interview, she describes an enquiry which she has just begun with a Year 7 class. She also discusses a speaking and listening task in English which she carried out with students in Year 10 'on an enquiry model' (*ibid.*, ll253-254). Indeed, she appears keen to include enquiry in her teaching practice (*ibid.*, ll258-259);

> 'I'm determined to make sure that with every year group, I do
> at least something with the enquiry cycle'
>
> (*ibid.*, ll.262-263).

There is further interaction between these two positions, and for a greater number of teachers, in the second round of interviews. Now, Chloe (I2, 52/31, ll.4-5) gives an account of successful attempts at approaches to enquiry following my suggestions as the KTP Associate. She also describes a project she is conducting with Year 8 students in English lessons (*ibid.*, ll.5-6). Matthew's approach (I2, 52/31, ll.14-16) involves 'a specific enquiry focus in some lessons and then focus on some of the skills in other lessons'. As for Christopher (I2, 52/31, ll. 6-7), despite whole school responsibilities, he mentions his continuous attempts to maintain an enquiry based element to his Science lessons and 'a shift away from teacher led lessons and discussions' (*ibid.*, ll22-23). For Isobel (I2, 52/31, ll.10-12), the interaction of 'I as taking action' and 'Enquiry/enquiries' provokes a shifting perception which is not dissimilar to Christopher's view;

> 'I have been developing the pupils' enquiry skills and their
> independent learning. I have been handing the reins over to
> them. I had been a traditional teacher. I did far too much in the
> past. Now the pupils are more in charge.'

By their third round of interviews, the number of interactions between 'I as taking action' and 'Enquiry/my enquiries' has decreased to include one example each from Andrew (I3, 52/31, ll.76-80), Christopher (I3, 52/31, ll.122-133), Michael (I3, 52/31,

ll.141-142) and Isobel (I3, 52/31, l.119). Here, the teachers typically give accounts of enquiry style lessons they have conducted around the time of the interview and Isobel discusses future plans to have more enquiries in the summer term.

Findings from interactions concerning these two positions certainly suggest shifting perceptions towards a more open style of teaching. I am now curious to discover the extent to which teachers act on their changing views and include enquiries in their regular practice, particularly in relation to concepts of 'transition' or 'transformation' (Kennedy, 2005) and their professional learning, in order to explore their developing understanding in greater detail.

Interactions between the 'internal' position 'I as involved' and the 'external' position 'Enquiry/my enquiries' become less frequent over time (Andrew, I1, 34/31, l.12; *ibid*., ll.30-32; *ibid*., ll.37-41; Matthew, I2, 34/31, ll.5-6; Matthew, I3, 34/31, ll.89-92). As for 'I as not taking action', Andrew and Chloe provide examples of this 'internal' position in relation to 'Enquiry/my enquiries' in the first round of teachers' interviews. Although he explains that he has taken responsibility for the schemes of work for Year 7 and Year 8 Art, Andrew (I1, 42/31, ll.238-242) has not written any enquiries into them. Chloe (I1, 42/31, ll.91-94) recalls examples of developing enquiry skills with her students after tasks in lessons. By the final round of interviews, interactions between 'I as not taking action' and 'Enquiry/my enquiries' only feature in the interviews of the two English teachers. However, Isobel (I3, 42/31, ll.110-111) refers to changing GCSE specifications and feeling unable to take risks with classes of older students. This is a view, which is echoed by Chloe (I3, 42/31, ll.166-168);

> 'I think you reach a point where we are now getting close to their exams, you need to show them how to structure an essay and I think you get conscious in terms of how much time you've got left'

> '(…) so you think, 'Do you know what it is, it would be quicker if I modelled to them how to do it' because I think that at the end of the day, you can't get away from the fact that we are judged on results.'
>
> (*ibid.*, ll.173-175)

This particular finding encourages me to suggest that there is evidence of dominance and social power within the context of teachers developing understanding in their

school because Andrew presents a perception of his timetable which prevents him from planning enquiries in Key Stage 3 schemes of work. Going further, Chloe and Isobel's perceptions of external voices hint at the possible consequences of not complying with the 'performativity' culture in UK education (Jeffrey and Troman, 2012). As a result, I am in no doubt that these views negatively influence their capacity to 'take action' in relation to the 'external' position 'Enquiry/my enquiries'. I am now keen to explore 'internal-external' position interactions involving other aspects of enquiry; the 'tools' which were designed and developed during the KTP project to support teachers' developing understanding (Table 9, **p. 84**). In doing so, I intend to find out whether there is a similar pattern of decreasing prominence over time.

5.4.4 'Internal-external' position interactions suggest the influence of 'dominance and social power' (Hermans, 2008) on enquiry 'tools'

'Enquiry/my enquiries' is just one of four aspects of enquiry developed during the KTP project, which manifest themselves as 'external' positions within teachers' 'dialogical selves' (Hermans, 2001b). The three other aspects include 'The assessment framework for enquiry skills', 'The toolkit for enquiry' and 'The 'Habits of Mind' (***ibid.***). In the context of my findings so far concerning 'Enquiry/my enquiries', it is hardly surprising that 'The assessment framework for enquiry skills' does not appear as an *'external'* position in the last round of teachers' interviews. Indeed, if teachers present increasingly less frequent opportunities for enquiry with their classes, they are unlikely to pursue a framework for assessing the skills involved in this style of learning. From this perspective, therefore, I am drawn to teachers compelling perceptions of 'The toolkit for enquiry' and 'The Habits of Mind' which serve to both confirm and reject my previous findings.

As an *'external'* position 'The Habits of Mind' interacts with an increasing number of 'internal' positions over time (Appendix V, **p. 179**). This is a particularly interesting finding, which I will present in more detail in the final section of this chapter concerning teachers' 'openness to innovation' (Hermans, 2008, pp. 192-194). In terms of teachers' developing understanding of enquiry, however, as in the previous section, I will focus my attention on 'I as taking action', 'I as not taking action' and 'I as understanding'.

I recall that Andrew was quick to adopt the 'The Habits of Mind' during the KTP project. This is reflected in his first interview and the interaction with 'I as taking action'. Here, Andrew (I1, 52/30, l.128) describes a display in his classroom and makes constant references to the Habits in his first attempt at an extended enquiry. By the time of his third interview, however, the corners of the display are 'all curled up' and Andrew (I3, 52/30, l.163) states that he refers to them 'very, very rarely'. Instead, he highlights one particular 'Habit'; 'persisting' (Costa and Kallick, 2000), which he describes as 'a key one for me and I think it is a key one for a lot of the kids in this school where they lack self-esteem' (Andrew, 52/30, I3, ll.163-168).

Ethan (I2, 52/30, ll.62-64) talks openly about his initial perceptions of this 'external' position;

> 'At the beginning we discussed what Habits of Mind are. I was frustrated because I wanted actual definitions. I thought, 'If I don't know what the Habits of Mind are, how could the students know?'

Indeed, during the early stages of development, Ethan's self perception as a 'scientist' contributes to his feeling 'baffled' by 'The Habits of Mind' (I2, 55/30, ll.65-66). After a time, however, he recognises that he already includes many of them in his teaching practice without making any conscious attempt to use them;

> 'I realised that a lot of the Habits of Mind we were doing anyway, we just didn't realise.'
>
> (Ethan, *ibid.*, ll.66-67)

By his third interview, Ethan (I3, 59/30, ll.321-323) acknowledges that his understanding has developed;

> 'I understand what they mean now as opposed to that day when I was staring at a wall for three hours at [the residential weekend]. Well, I say I understand what they mean, I understand some of them.'

Echoing Ethan, Chloe discusses complexities involving 'The Habits of Mind'. Importantly, although she understands the language herself, Chloe's concern is that it is 'too hard' for some of her students (I3, 59/30, ll.60-70). At this point, the interactions of 'internal' positions 'I as understanding', 'I as taking action' and 'I as not taking' with the 'external' position 'The Habits of Mind' do not provide any definitive findings other than perhaps the dominance of an academic text in a school

based project. However, by widening the scope of teachers' perceptions to include the 'internal' positions 'I as doer/user' and 'I as critical', other factors begin to emerge concerning the social context of their developing understanding of enquiry.

The 'internal' position 'I as doer/user' interacts with 'The Habits of Mind' in each of Ethan's interviews. This leads me to suggest the influence of one particular aspect of the social context of developing understanding of enquiry in the findings from Chloe's interviews above. As early as his first interview, Ethan (I1, 19/30, ll.23-24) refers to his experiences of developing 'The Habits of Mind' with students in his Year 8 Science class. In particular, he gives an account of developing the skill of 'persistence' with them (Ethan, I2, 19/30, l.34). By his third interview, Ethan (I3, 19/30, ll.329-330) has begun to include 'The Habits of Mind' in the learning objectives for his lessons 'so students know which ones you are using'. I detect the influence of Ethan's students in his accounts of classroom practice regarding this 'external' position. This is also true for Andrew (I3, 19/30, ll.167-170), Matthew (I3, 19/30, l.173) and Michael (I3, 19/30, ll.64-69). For example, Matthew indicates that his students required some time to develop their understanding of 'The Habits of Mind' (I1, 14/30, ll.153-154), whilst Andrew (I2, 14/30, ll.29-30) echoes Chloe's perception of 'The Habits of Mind' as 'too academic';

> 'The staff in school don't have enough time – it needs to be simplified.'

There is an important difference, however, between the Chloe's perception of 'The Habits of Mind' and those of Andrew and Matthew. This relates to the concept of time, and lack of it. The need for 'time' is further echoed by Christopher in his final interview in relation to the Habits of Mind and the enquiry toolkit (I3, 44/30, ll.181-183);

> '… all of the Habits of Mind and the toolkit take time to introduce slowly and they need to be revisited regularly with classes.'

Typically, the range of teachers' 'internal' positions concerning 'The toolkit for enquiry' increases over time, as does the range of interactions involving 'I as doer/user' and 'The toolkit for enquiry skills'. Indeed, these are the most prominent interactions involving the enquiry tools in teachers' final round of interviews

(Appendix V, **p. 179**). Importantly, however, the influences of students and contextual factors (including time) do not go away.

5.4.5 Critique

My findings relating to Hermans' (2008) concept of 'multiplicity-in-unity' are not without flaw. Indeed, by focussing on the particular interactions of five 'internal' positions and four 'external' positions, I exclude others, which have a greater prominence within this study. Furthermore, findings are not presented systematically but rather in a narrative style of my own.

In terms of my focus for this aspect of teachers' 'dialogical selves' (*ibid.*), although I present a general interpretation of enquiry based learning which involves the interactions of multiple 'internal-external' positions, I have limited my findings within this section to a literal interpretation of the term; aspects, which I have identified as 'tools' when they appear as 'external' positions, and were developed as part of the KTP project. This is because these findings reveal the extent to which enquiry based learning was developed in the school. They also provide further details of the social and cultural context of my study.

Secondly, I am aware that the discursive style of writing may appear untypical for some readers, who anticipate a more objective tone. In response, I reiterate the importance of my research position, and personal involvement with the study (**pp. 1-2**). Furthermore, I suggest that this style accommodates the accumulation of information in preparation for the next chapter, where I have a great deal more to discuss.

5.5 'Dominance and social power'

How do teachers' perceptions of enquiry based learning shift over time?
For what reasons?

- 'Dominance and social power' (Hermans, 2008) exist in a variety of forms and contexts.
- Control is evidenced by the prominence of teachers' perceived 'roles' in developing enquiry.
- Teachers hear the enthusiastic voices of their students.
- Teachers hear the limiting voices of their students.
- Teachers hear conflicting voices associated with the rules and routines of their curriculum areas.
- Teachers hear the conflicting voices of others.

The concept of 'dominance and social power' relates to voices, which are deeply penetrated by the culture of institutions, groups and communities in which they participate (Hermans, 2008, p. 192). I have already begun to exemplify this within my findings by introducing four domains of teachers developing understanding of enquiry; the 'internal' domain, the 'external - KTP project' domain, the 'external – school' domain, and the 'outside' domain (Figure 10, **p. 87**). Within this section, I intend to demonstrate that 'dominance and social power' (Hermans, *ibid.*) exists in a variety of forms and contexts. I will also present the concept of power as evidenced by the prominence of the interactions of teachers' 'internal' and 'external' positions. Finally, I will draw on my findings regarding the distribution of power to suggest reasons for teachers' shifting perceptions of enquiry.

5.5.1 Dominance and social power exist in a variety of forms and contexts
Teachers' 'external' positions 'My students in non-enquiry sessions', 'My rules and routines' and 'My curriculum area' dominate the social context of my research study because they appear with increasing prominence in teachers' interviews over time (Appendix V, **p. 179**). They come as no surprise following my earlier findings regarding the influence of students, time and 'performativity' (Ball, 2000) on teachers' shifting perceptions of the enquiry 'tools' (**pp. 82-88**). Crucially, these 'external' positions suggest the influence of voices from within the school but outside the KTP

project on teachers' developing understanding of enquiry. For example, 'My rules and routines' typically relate to teachers' classroom practice; lesson planning, opportunities for enquiry and general classroom management. 'My curriculum area' concerns the subject specialisms of each teacher.

Table 11 (**below**) exemplifies the number of interactions for the group of teachers' most prominent 'internal' and 'external' positions over time. The figures which appear in bold type reinforce my finding that students and contextual factors dominate teachers' perceptions of enquiry based learning. For example, the group is decreasingly influenced by the voices of students in enquiry sessions and increasingly influenced by those of students in non-enquiry sessions. However, students are not the only influence. There is also evidence that my voice, as the KTP Associate, became increasingly prominent over time.

Table 11: Interactions of the most prominent 'internal' and 'external' positions

		'External' positions														
		Students in enquiry sessions			Students in non-enquiry sessions			Rules and routines			Curriculum area			KTP Associate			
		Interview			Interview			Interview			Interview			Interview			Total
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
'Internal' positions	I as constrained	1	0	0	1	1	2	0	1	0	**1**	**0**	**4**	2	0	1	14
	I as listener	**17**	**0**	**4**	**0**	**0**	**20**	0	0	1	0	1	0	**1**	**4**	**5**	53
	I as talker	**21**	**1**	**5**	**5**	**4**	**42**	0	0	3	0	1	1	**2**	**0**	**4**	89
	I as thinker	**29**	**1**	**7**	**3**	**12**	**40**	**3**	**10**	**38**	4	3	2	1	0	2	155
	Total	68	2	16	9	17	104	3	11	42	5	5	7	6	4	12	311

n = 311 interactions

5.5.2 Control is evidenced by the prominence of teachers' perceived roles in developing enquiry

Teachers' perceptions shift most prominently in relation to 'internal' positions which signify negative feelings of being 'constrained' as well as a range of roles; 'I as creative', 'I as listener', 'I as talker' and 'I as thinker' (***ibid.***). Indeed, these 'internal' positions become increasingly prominent for the group of teachers over time. Of greater interest, however, is the feeling of 'I as constrained' or having to be 'creative' imply degrees of power by a person or social structure over another person. Going further,

'internal' positions which involve 'listening' and 'talking' suggest that teachers' negotiate their developing understanding of enquiry in relation to that which is going on around them. From this perspective, I am keen to explore the interactions between the 'internal-external' positions I have highlighted in this section because I sense that there may be particular distributions of power which influence teachers' perceptions of enquiry.

5.5.3 Teachers hear the enthusiastic voices of their students

More than any other 'external' position, 'My students in enquiry lessons' and 'My students in non-enquiry lessons' dominate teachers' perceptions of enquiry based learning. Importantly, however, these positions do not always convey the same voices. Nor do they convey consistent messages. For example, in the case of 'I as listener', Andrew (I1, 40/6, ll.157-162) reflects on predicting the voices of students during his enquiry lessons as they recognise the 'Habits of Mind' as part of a system for gaining rewards;

> '(…) and the way we recognised it was if they, if we wanted
> the kids to look at it as a way of engaging them. So if they saw
> it and they thought, 'Right, there's points to be had if we
> recognise these key words ...they'd say, they'd put up their
> hand and say, "I'm doing such and such." '

Chloe's (I1, 40/6, ll.94-96) perception of this 'internal' position portrays students reflecting on 'Habits' they have used;

> 'I think they do, even just a little task, think, "Oh, I had to
> persist there."'.

Matthew (I3, 40/7, ll.114-120) reports an increase in the number of questions asked by his students and a shift in the quality of talk in the classroom as they work more 'interdependently' (Costa and Kallick, 2000). Interestingly, however, Christopher's (I1, 40/6, ll.88-91) perception of students' reaction to initial enquiries suggests that he expected them to protest;

> 'But they showed determination and perseverance in that they
> didn't, you know, they didn't sort of throw their pens down and
> say, "Oh well, I can't do this. It's too difficult." They showed
> amazing tenacity to kind of push through the areas that they
> were struggling with and find the answers.'

This is an early view which is shared by Ethan (I1, 40/6, ll.89-91). In fact, the opposite happened. Indeed, Isobel (I1, 40/6, ll.59-61), Matthew (I1, 40/6, ll.79-82) and Chloe (I2, 40/6, ll.36-37; *ibid.*, l.45) all report hearing students' enthusiastic response to initial enquiries. By the time of teachers' second interviews, the prominence of 'My students in enquiry lessons' in relation to 'I as listener' is replaced by 'My students in non-enquiry lessons'. Here, teachers' perceptions shift from including students in lessons conducted specifically for the KTP project to a wider view of enquiry involving all students, generally. Indeed, some of the teachers recall hearing students telling them about their different experiences of enquiry across curriculum areas. They make comparisons which convey positive messages and encourage the teachers to continue to develop their understanding (Michael, I2, 40/7, ll.64-66; Ethan, I2, 40/7, ll.34-35; Chloe, I2, 40/7, ll.36-37). Conversely, however, the messages conveyed by students' voices in teachers' final round of interviews connote a definite shift in tone.

5.5.4 Teachers hear the limiting voices of their students

Examples of students' potential to limit teachers' perceptions of enquiry begin to emerge in Ethan's second interview. Here, their voices represent views of approaches to teaching and learning, which have penetrated the culture of their school;

> 'The Year 11s wanted to be told what to do, and say why don't you just give us a book? Why don't you just tell us the information, that's how we need to learn. Now they are alright with it. I thought they would enjoy the independence of doing it, but they don't.'

> (Ethan, I2, 40/7, ll.36-37)

In this example, Ethan not only hears students' requests to be taught following a 'transmission' model (Biggs and Moore, 1993), he also recognises their reluctance to engage with the new 'open' style of learning associated with enquiry. This perception of students' views is not shared by all teachers, however. Andrew (I3, 40/6, ll.94-101) reflects on his perceptions of younger students, who prefer to follow 'a series of pathways' and 'really dig down in something deep' as part of a learning process. When presented with the perceived views of Ethan's students, Andrew (*ibid.*, ll.112-121) offers a number of insights into reasons for their opposition to enquiry;

> 'Maybe the expectations are different during an enquiry because it's, they're more responsible for their own learning and, I think, the outcome rather than saying, "The teacher's standing there, I know what's going to happen, I don't really

fancy it today. I'm just going to sit back and cruise for the
lesson" which I remember doing at school myself. But
actually, if it's an enquiry thing then they have to take much
more responsibility so it's possible that where the stress comes
in there. I don't know. I don't want to speculate. I guess it
depends on individuals as well because I don't know if some of
the kids involved in the project were very conscientious and
they really want to achieve and maybe they just don't want to
be seen to not be achieving. It's possible there's an element of
that as well.'

5.5.5 Teachers hear conflicting voices associated with the rules and routines of their

curriculum areas

In the example above, Andrew presents an understanding of students' potentially

negative views of enquiry and a range of perspectives which reinforces the concept of

multi-dimensionality. Going further, however, I suggest that students' multiple

perceptions of enquiry relate at least in part to their Key Stage, and the opportunities for

enquiry which are created for them by their teachers. This is Isobel's view (I3, 42/7,

ll.149-160);

> 'I do think there is a difference in Key Stage 3 teaching to Key
> Stage 4. I think, I don't know maybe that's because speaking
> from an English point of view, I don't know whether it's
> because that's the way we approach it and think, you know, we
> are very conscious of 'I've got to do this, and this, and this by
> then', and there's less scope for making mistakes possibly. I
> would say we do less enquiry, or I do, at Key Stage 4 and I
> would probably say in English we do. I think in Key Stage 3,
> and it seems a shame, really because we did quite a lot of it in
> Key Stage 3 so it seems a shame that, you know, we don't push
> it at Key Stage 4 and then we pick up again in Key Stage 5 but
> I don't know. Maybe we just need to have more opportunity to
> be able to do that but then with pressure from the exam board
> and the results and the position that we are in as well, I can see
> where they are coming from.'

Here, Isobel certainly highlights perceived pressures to get good exam results at Key

Stage 4, however, in doing so, I perceive that she also presents a personal view, which

dominates students' voices and reduces opportunities for enquiry. Indeed, I suspect that

by reducing the number of opportunities for enquiry with students in Key Stage 4,

Isobel projects a perception of enquiry which is inferior to the 'transmission' model of

teaching and learning (Biggs and Moore, 1993). Students then echo this view when

they talk about enquiry and it limits the capacity of Isobel's 'internal' position 'I as

taking action'. Isobel is not the only teacher to feel and act this way. Andrew (I3, 12/7, ll.18-21; *ibid.*, ll.129-132) and Michael's (I3, 12/34, l.9) 'dialogical selves' (Hermans, 2001b) include interactions between the 'internal' position 'I as constrained' and the 'external' positions 'My students in non-enquiry sessions' and 'My curriculum area', with similar outcomes.

5.5.6 Teachers hear the conflicting voices of others

'Students' are not the only external voices which teachers recall in their interviews. Teachers also receive messages carried by 'My fellow enquiry group teachers', 'My fellow teachers', 'A fellow teacher', 'A problematic person', 'My Principal', 'My KTP Associate' and 'Other people'. These people represent different domains of teachers' developing understanding of enquiry (Figure 10, **p. 87**). 'My fellow enquiry group teachers' and 'My KTP Associate' relate to the 'external – KTP project', 'My fellow teachers', 'A fellow teacher', 'A problematic person' and 'My Principal' represent voices from the 'external – within school' domain. Lastly, 'Other people' convey opinions from the domain 'outside' the school. They include voices, which represent the culture of 'performativity' in UK education (Jeffrey and Troman, 2012). Of these 'external' positions, the prominence of 'My fellow teachers' and 'A fellow teacher' fluctuates over time, however, there is evidence to suggest that interactions between the 'internal' position 'I as listener' and 'external' positions 'My Principal', 'My KTP Associate' and 'Other people' all increase in prominence, conveying messages which are both positive and negative (Appendix V, **p. 179**).

For example, in the first round of interviews, when asked about her role in developing enquiry with other colleagues, Chloe (I1, 40/22, l.242) conveys a perception of their desire to work collaboratively. Ethan (I1, 40/22, ll.243-250) retells a conversation where, based on his perception of their response, he presents enquiry as a manageable approach to teaching and learning within a busy teaching timetable. In both of these cases, the voices of colleagues in school convey positive messages. Teachers also demonstrate that they are aware of their colleagues' negative perceptions of enquiry. This is true for Ethan (I1, 40/21, ll.226-227), who offers an account of an incident where a fellow teacher refuses to adopt enquiry per se because they perceive it as one style of teaching and learning among many. In Chloe's case (I2, 40/21, ll.40-42), colleagues were reluctant to engage with her experience of developing enquiry because

they could not initially understand why she, and not they, had been selected to take part in the KTP project. By the final round of interviews, however, almost all of the teachers report examples of positive incidents like Isobel's (I2, 55/21, ll.18-19) encounter with a colleague;

> 'People come up and ask you things – advice. It has raised the profile of some members of staff and that has made other staff members more interested.'

When they occur, interactions concerning 'I as listener' and 'My Principal' and 'The KTP Associate' portray consistent and encouraging messages to the teachers regarding the necessary role of enquiry based learning in their school. They become more prominent but do not dominate teachers' interviews. Instead, Andrew (I3, 40/33, ll.87-89) gives an account of one of his lessons during a period when the school was inspected, which leaves him profoundly affected by the messages of 'performativity' and accountability in schools (Ball, 2003);

> 'I think schools are still stifled by the teacher concern about that horrible thing of saying, 'That was an inadequate lesson.''

It is hardly, surprising, then, that the 'internal' positions 'I as talker' and 'I as thinker' feature so prominently in teachers' interviews (Table 11, **p. 100**) as they come to terms with their perceptions of enquiry based learning in a variety of contexts of multiple voices.

5.5.7 Critique

Having highlighted them at the beginning of this section, I acknowledge that by omitting 'I as talker', 'I as creative' and 'I as thinker' from my findings on 'dominance and social power', I have neglected to include examples of interactions concerning three of the teachers' most prominent 'internal' positions (Appendices O-U, **pp. 172-178**). This is intentional, however, as I feel they are better placed within the final section of this chapter, which addresses the concept of 'openness to innovation' (Hermans, 2008).

Secondly, in the research papers that I have already had published, I have identified the influence of student researchers in the process of curriculum development (Leat and Reid, 2012). This research study has identified similar discoveries. Key differences are emerging, however. Voices in this study are not the students' actual words, but rather the teachers' recollections and perceptions of them. A second difference between the

findings in this research study compared to those in my journal articles lies in the variety and quality of the quotations I have included from teachers' interviews, which reflect not only the richness of our working relationships but also my intimate knowledge of the data. Most importantly, my report on findings from each of the aspects of teachers' 'dialogical selves' (Hermans, 2001b) is not yet complete. I have yet to address the final dimension.

5.6 'Openness to innovation'

How do teachers' perceptions of enquiry based learning shift over time?
For what reasons?

- Shifting positions create opportunities for change.
- Findings from video data crystallise teachers' perceptions of enquiry.
- New positions create sub-systems in teachers' selves and opportunities for change.

'Openness to innovation' occurs when voices occupy different positions and the 'dialogical self' takes initiatives, and responds to situations (Hermans, 2008, pp. 192-194). In terms of teachers' developing understanding of enquiry, shifting positions and new positions create a sub-system in the self, and opportunities for change. 'I as thinker' and 'I as creative' are 'internal' positions which dominate teachers' 'dialogical selves' (*ibid.*) in each round of interviews. However it is ultimately through the 'internal' position 'I as talker' that teachers create opportunities for change.

5.6.1 Shifting positions create opportunities for change

It is hardly surprising that the 'internal' position 'I as thinker' maintains a prominence in teachers' interviews since one role of the interviewers was to encourage the teachers to reflect on their developing understanding of enquiry based learning. Nevertheless, interactions of this 'internal' position with a wide range of 'external' positions highlight the complexities of all of the teachers' experiences. In their first round of interviews teachers' thoughts are dominated by the voices of their students and thinking about enquiries. Students' voices prevail in the second round of interviews, however, teachers also reflect on 'My rules and routines', 'My personal prior experience' and 'Me/myself'. Importantly, by their third round of interviews, six of the seven teachers

discuss their thinking about 'The KTP project' or 'The KTP Associate'. This is best summarised by Andrew (I3, 55/36, ll.250-252) who describes the period after the project ended and I left the school;

> 'Yeah, I think there was a definite dip. I thought, 'Oh.'' You know you sort of worry about how that's going to be the end of it because these things do end but there has been, it has been driven and pushed.'

Here, Andrew talks about a 'dip' during the transition period where Anthony Jones assumed responsibility for the leadership and management of the process of developing enquiry. Importantly, however, Andrew also confirms a continuing focus on enquiry in school.

In terms of being 'creative', every teacher includes examples of interactions between this 'internal' position and the contextual factors represented by 'My rules and routines'. Chloe (I3, 13/26, ll.146-150), Isobel (I3, 13/26, l.26) and Michael (I3, 13/26, ll.225-228) give examples of changing the way in which they manage 'My classroom' and Ethan (I3, 13/25, l.198) explains how he manipulates the 'external' position 'My timetable' to his advantage. Going further, the prominence of the 'internal' position 'I as talker' intensifies over time to involve an increasing number of people, and depth of teachers' thinking. This is particularly the case in teachers' final round of interviews, once the KTP project has ended, and this position interacts not only with 'Me /myself', 'My students in enquiry sessions' and 'My students in non-enquiry sessions' but with a variety of colleagues in school; those who were involved in the KTP project and those who were not. For example, Andrew (I1, 53/10, ll.246-247) considers talking to 'My fellow enquiry group teachers' before planning and delivering an enquiry, he then recalls a conversation where he advises 'A fellow teacher' to take a risk and try an enquiry approach to their lessons (Andrew, I2, 53/21, l.37). In his final interview, the parameters of his conversations with colleagues extend to his line manager in Art;

> 'I spoke to Laura about it, it's the how to impact their learning and I think it's filtering through.'
>
> (Andrew, I3, 53/8, ll.142-143)

Although he no longer conducts the kind of enquiries that he led during the KTP project, Andrew (I3, 56/31, ll.57-58; *ibid.*, 53/22, l.72; *ibid.*, l.75) suggests that he continues to instigate conversations with his Learning Area Leader, a Student Performance Leader and one of the Deputy Principals about getting students to really

understand aspects of their learning. Indeed, these examples of interactions between 'I as talker' and colleagues in school are typical of the other teachers in my study. They accept the need for an enquiry based approach to learning in their school and continue to advocate its role however they do not appear to have fully engaged with it in terms of their classroom practice. I will return to issues involving this 'internal' position in relation to my concepts of 'contractual' (**p. 127**) and 'internal' (**p. 134**) teacher agency in the next chapter.

5.6.2 Findings from video data crystallise teachers' perceptions of enquiry

The results of my analyses of teachers' video crystallise the evidence I have presented for the dimensions of 'multiplicity-in-unity' and 'dominance and social power' (Hermans, 2008). They also enrich the concept of teachers' 'openness to innovation' (*ibid.*). For example, Andrew's first recording contains a lot of whole class teaching from the front of the room. Sometimes he moves amongst the students as they complete their artwork. There is a lot of noise. Recording 2 contains more questions to individual students. There is also evidence of Andrew responding to questions from individuals. There is an increased amount of time spent amongst the students as opposed to at the front of the room. Students are encouraged to make comments. Recording 3 suggests a definite increase in the amount of time spent amongst the students and a decrease in the amount of whole class teaching. Andrew's final recording contains evidence of an increase in the number of teacher responses to student questions and an increase in the amount of time he spends listening. Andrew now sits beside students as they complete their artwork. There is much in the recordings of four of Andrew's lessons to reinforce findings around his 'internal' positions 'I as talker', 'I as listener' and 'I as helpful'. There is evidence to suggest a shift in Andrew's use of talk away from whole class teaching to a focus on individual students, and listening. By positioning himself amongst or beside his students in class, he challenges the 'traditional' rules and routines of teaching . In terms of enquiry, Andrew's fourth recording contains evidence to suggest that he is beginning to adopt a task sheet, which contains learning objectives and enquiry skills to be met by the students by working in groups to produce a report on the work of Henri Matisse. Here, Andrew weaves enquiry based learning into his Art curriculum.

Christopher challenges traditional classroom rules and routines as early as his first video recording. His time is relatively evenly spread between the front of the class and among the students and he spends a lot of time listening to individual students. Indeed, Christopher uses talk as a supportive tool for learning. Recording 2 marks a transition in terms of Christopher's developing understanding of enquiry. On one hand, there is an increase in the number of teacher comments to the whole class, and Christopher appears to listen less frequently than in the first recording. Conversely, he is more observant. Christopher's final recording takes the form of a joint enquiry with a Maths teacher. Students work in groups on an issue concerning the collision of a meteor with planet Earth. They appear to be enjoying the lesson. In comparison to data from his first two recordings, Christopher addresses very few questions to the whole class. There is an increase in the number of questions he asks, but also in the number of questions asked by students. In terms of Christopher's perceptions of enquiry based learning, evidence from Christopher's video data suggests a shift towards this pedagogical approach. His 'internal' position 'I as team worker' is certainly evidenced by his physical positioning amongst the students as they work in groups. Crucially, however, concerning the focus of his enquiries, Christopher maintains control by dictating the structure and topic.

The most interesting feature of Chloe's first video recording is her insistence on silence. This conveys a significant message about the concept of control in her classroom. It reinforces the confession in her interview data; Chloe (I3, 14/27, l.118) is a 'control freak'. She controls much of the activity in this first lesson on facts about a character in a novel. The lesson follows a definite structure and there is a feeling that Chloe is 'conducting' the class in a similar manner to an orchestra. Physically positioned at the front of the classroom, she makes a large number of comments to the whole class and invites the students to speak. There is some group work but Chloe retains the focus of students' learning. Chloe's second recording could not be more different. It is evidence of the manner in which she embraced the KTP project. Many of the rules and routines of her classroom have been broken down (she has even exchanged the suit she would normally wear for a T-shirt) and half of the students in Year 7 are taking part in an afternoon of enquiry, which Chloe planned with Andrew and Isobel. A large proportion of Chloe's time is spent amongst the students, there is a decrease in the number of comments she makes to the whole group, and students are encouraged to make

comments rather than be asked to contribute. Chloe's interview data highlights tensions she experienced with the external position 'A problematic person/people'. The class of students in Chloe's third recording features a number of these. Her reaction is interesting. Instead of simply rejecting enquiry based learning, she focuses on enquiry skills in the form of 'The Habits of Mind' (Costa and Kallick, 2000) and enlists my help, as the KTP Associate. Although much of her talk is in the form of comments to the whole class, in terms of her physical presence, she spends an increasing amount of time observing her students from the back of the room. Chloe's fourth video recording provides evidence of her compromised position towards enquiry based learning, however. Having experienced tensions caused by the slow pace of her progress with the students in recording 3, Chloe resorts to using an enquiry tool in a lesson which is highly structured in terms of her questioning, her dominant position at the front of the room, her insistence on silence, and even her students' position in rows.

In his third interview, Ethan (I3, 55/0, l.58) describes himself at the beginning of the KTP project as being 'so laid back I was almost horizontal'. This is certainly in evidence in his first video recording. Indeed, there is little evidence of lesson planning and I suggest that Ethan is relying on his personality. In physical terms, he positions himself both at the front of the classroom and amongst the students. He is involved with the students. In this lesson, Ethan not only embraces the spirit of enquiry: he relinquishes control and allows students to take the lead in taking five measurements of an apple; it is a learning experience for him, too. His first attempt at an enquiry, Ethan is interested in finding out what his students are capable of before he intervenes. Concerning his second recording, Ethan (I2, 10/31, ll.53-54) mentions an 'awful lesson' in his second interview. This is it. A lesson on burning fuels, students are given an information sheet and no further input from the teacher. The result is chaotic. Crucially, Ethan (R2, 37 mins 20 seconds) asks all the students to stop what they are doing and he mediates;

> 'Although this hasn't gone as well as I'd hoped, I've learned quite a
> few things;
> 1. I let you come in a little bit hyper
> 2. Quite frankly, some of you, most of you did very well
> 3. When we do a practical, it is probably better that I demo
>   things first and show you what you've got to do'

In terms of Ethan's shifting perceptions of enquiry based learning, this is a crucial point. Ethan assumes responsibility for the chaotic episode in his classroom. He does not blame the students. He also realises that enquiry based learning, although open in structure, requires planning. Finally, it is important to observe existing rules and routines in order evaluate the extent to which students are expected to work outside their normal conditions. Ethan's third recording is an example of a more structured approach to enquiry. A joint project combining Science and Mathematics, Ethan is working with Matthew Brown and a large group of students in Year 8 as they solve a murder mystery. There are many examples of teachers' comments to individuals, groups and the whole class and some evidence of the teacher taking time to observe the students. The atmosphere is one of collaboration. Ethan's fourth video recording exemplifies his emerging clarity towards enquiry based learning in contrast to a colleague who is only just beginning to explore it. It contains many of the features highlighted in his interview data concerning changing structure and rules and routines. Students are tasked with producing a group poster and presentation on the theme of healthy lifestyles. After giving them direction in terms of 'good practice' in enquiries, Ethan listens and observes. When asked about his shifting perceptions of enquiry based learning, Ethan (I3, 55/0, l.235) responds, "I think I just grew up". His final approach is certainly more mature.

Findings from Isobel's video data suggest experimentation with enquiry, which results in compromise. Like Chloe, Isobel controls her classes. This is palpable in the form of her insistence on silence in her first recording. Physically positioned at the front of the room, Isobel dominates her lessons through the questions she asks, however she does listen to her students. Recording 2 takes the form of a Year 7 afternoon of enquiry with Chloe and Andrew. There is a lot of evidence to suggest shifting perceptions of enquiry based learning in terms of rules and routines. Like Chloe, Isobel changes her appearance and swaps her normal school dress for a T-shirt, students are arranged to work in groups, and the boundaries which divide classrooms are broken down as Isobel positions herself amongst the student as they work. She listens to their conversations. Isobel (I3, 41/28, ll.71-73) mentions video recording 3 in her third interview;

> 'And when we delivered the first session, we were just…, we
> sort of looked at each other and thought, 'Oh my god. That
> was just dreadful'.

A joint enquiry with Chloe's Year 7 English class, there are clear tensions where her expectations of silence in the classroom clash with students' excitement and the format of the room is not consistent with the normal layout; students are seated in groups of four instead of rows and in pairs. The lesson is dominated by teacher talk in the form of comments to the whole class. Isobel's final recording suggests a solution to developing enquiry based learning which is similar to Andrew's. Enquiry principles are a feature of this lesson but it is not an enquiry itself. Group work is in evidence, where Isobel (I3, 27/7, l.44) 'takes a backseat' and students use a tool for enquiry. In general, however, it is a lesson around teacher questioning.

Findings from Matthew's video data serve to reinforce many of my interpretations of his interviews. For example, his first recording is dominated by teacher questioning and teacher comments to the whole class. However, there is increasing evidence during recordings 2 and 3 of occasions where Matthew takes time to observe his students, and the boundaries between the students' and teacher's position in the classroom are blurred when he moves among them to listen to their comments and responses to his questions. Matthew's fourth recording is interesting and suggests clashing methodologies. For example, Matthew is committed to trying to get students to find things out for themselves. This is evidenced by the decreasing amount of teacher talk and the increase in the amount of time he spends listening to students' responses. He believes in the principles of enquiry based learning. Crucially, however, tensions are caused by the content of the lesson; the relationship between the diameter and circumference of a circle. Matthew is correct in his attempts to remind students of their prior mathematical knowledge. He also encourages a culture of finding out through trial and error. However, by maintaining a mathematical content, there are many opportunities for the students to get things 'wrong' when there is only one 'right answer'. Enquiries are not supposed to have 'right answers'. Matthew's video data provides evidence of the compromised position towards enquiry as suggested by Andrew, Chloe and Isobel. By including 'The Habits of Mind' (*ibid.*) as 'skills' within learning objectives, Matthew's final position is one of enquiry *within* Maths rather than *through* Maths.

Finally, Michael's video data provide evidence of remarkable shifts in his perspective on enquiry based leaning. He demonstrates how it is possible to break down the boundaries created by 'My rules and routines' in school. Conversely, however, his

interview data suggest that these shifts are compromised by his 'internal' positions 'I as controlled' and 'I as constrained', and possibly the 'external' position 'My prior personal experience'. In his first recording, a Year 7 Maths lesson on angles on a straight line and angles on a point, talk is dominated by teacher comments to individuals and the whole class and questions. Physically, his position is predominantly at the front of the classroom. Michael's second and third recordings offer glimmers of shifting perspectives towards enquiry based learning. For example, one student asks why the learning objectives, a previously common feature of his practice, are not on display. Additionally, Michael begins the lesson with a review of the Habits of Mind; skills for enquiry, instead of a mathematical starter. Recording 4 is most interesting, however. In the style of a 'Self Organized Learning Environment' ('SOLE') (Mitra, 2005), students sit in groups around a laptop in order to use the internet to search for ways of answering mathematical questions set by the teacher. They have not previously covered the topic in class. There are no rules and students are free to ask each other for help. 'Copying' is even allowed. As a result, there is a productive working environment. It is neither noisy nor silent. Students are engaged with the task for the whole lesson. Michael is free to speak to individual students rather than in front of the whole class. On these occasions, the length of student comments generally increases. In his third interview, Michael (I3, 10/31, ll.188-192) discusses the tensions he feels when conducting enquiries. In Michael's case, there is a 'gap' between the activity evident in his fourth video recording and the issues which I have identified in his final interview. Indeed, it appears that he reverts back to the more 'traditional' model of teaching and learning over time.

These summaries uncover issues of 'dominance and social power' (Hermans, 2008) in Christopher, Isobel and Chloe's classes when they struggle to allow their students to lead their own learning. Going further, Ethan, Michael and Matthew negotiate different forms of tension caused by their attempts to include enquiry based teaching and learning in a school system which is dominated by a 'transmission' model (Biggs and Moore, 1993). Crucially, however, my most important findings involve 'internal' and 'external' positions, which shift or emerge over time to create sub-systems in teachers' 'dialogical selves' (Hermans, 2001b).

5.6.3 New positions create sub-systems in teachers' selves and opportunities for change

I have already demonstrated that teachers' 'internal' and 'external' positions shift in terms of prominence over time (**pp. 90-91**). This suggests changes in their perceptions of enquiry based learning. Going further, 'new' positions emerge over time. Positions are 'new' when they have not previously existed for a particular teacher and then appear in a subsequent interview. For example, Michael's radar graph (Appendix U, **p. 178**) shows that the 'internal' positions 'I as creative', 'I as free/in control', 'I as thinker', 'I as doer/user' and 'I as leader' did not feature in his second interview but they do in his third one. His 'external' positions 'My students in non-enquiry sessions', 'My rules and routines', and 'My curriculum area' are also 'new' for the same reason (Appendix V, **p. 179**). Tables 12-15 (**below and p. 115**) summarise my findings on teachers' shifting and new 'internal' and 'external' positions.

Table 12: Teachers' shifting 'internal' positions, which increase in prominence over time

	'I as creative'	'I as critical'	'I as free/in control'	'I as listener'	'I as talker'	'I as thinker'
Andrew	✓	✓	✓	✓	✓	✓
Chloe		N			✓	✓
Christopher	✓		✓		✓	✓
Ethan	✓	✓	✓	✓	✓	✓
Isobel	✓	✓		✓		✓
Matthew	N			✓		
Michael	N		N			N

N This 'internal' position does not shift. It is new.

Table 13: Teachers' new 'internal' positions

	'I as doer/user'	'I as follower'	'I as leader'	'I as lacking knowledge'	'I as observer'	'I as responsible'
Andrew	S				S	
Chloe	✓	✓	✓	✓		
Christopher			S			
Ethan	S	S	✓	✓		✓
Isobel	✓	✓			✓	
Matthew		S			✓	✓
Michael	✓		✓			

S This 'internal' position is not new. It shifts.

Table 14: Teachers' shifting 'external' positions, which increase in prominence over time

	'Me/myself'	'My personal prior experience'	'The Habits of Mind'	'Enquiry/my enquiries'
Andrew	✓		✓	✓
Chloe	N		✓	✓
Christopher				✓
Ethan	✓	✓		
Isobel	✓	✓		
Matthew	✓		✓	
Michael				N

N This 'external' position does not shift. It is new.

Table 15: Teachers' new 'external' positions

	'My students in non-enquiry sessions'	'Anthony Jones'	'My fellow teachers'	'My rules and routines'	'Other people / things'	'My curriculum area'
Andrew	✓	✓	✓	✓	S	S
Chloe	✓	✓	✓	✓	✓	✓
Christopher	✓			✓	✓	
Ethan	✓	S		S		
Isobel	✓			✓	✓	✓
Matthew	✓		✓			✓
Michael	✓			✓		✓

S This 'external' position is not new. It shifts.

Hermans' (2008) concept of 'new' positions is useful for my study because it suggests that teachers' perceptions of enquiry based learning are not only shifting but adding extra dimensions to their 'dialogical selves'. From this perspective, they are changing: the 'internal' positions 'I as doer/user', 'I as follower' and 'I as leader' emerge over time and there are new 'external' positions; 'Anthony Jones' 'My fellow teachers' and 'Other people/things'. Going further, the 'external' position 'Me/myself' shifts to become increasingly prominent for four of the teachers. Here, in addition to perceiving enquiry based learning in terms of a growing number of external voices within their social and cultural contexts, some of the teachers amplify their own.

5.6.4 Critique

By shifting the focus of my findings from the group of teachers in the sections devoted to 'other-in-the-self' and 'multiplicity-in-unity' to my interpretation of individual teachers' video data at the end of the final section on 'openness to innovation' (Hermans, 2008), I acknowledge that their 'dialogical selves' (Hermans, 2001b) cannot be fixed to a group profile. However, the teachers who took part in this research study began their experience of developing enquiry based learning as a group. My decision to

presenting my findings in this way is intended to stimulate a discussion concerning the effectiveness of the form of teachers' professional development included within this study.

None of the teachers disagree with my findings in their feedback. Instead, their written comments serve to strengthen the suggestions I have made within this chapter as well as issues involving my choice of methodology. Interestingly, Isobel expected more (Appendix W, **p. 180**). This is valuable information and it relates to the focus of my findings. Had I chosen to concentrate on the interactions of alternative 'positions', for example, or even include findings from video data throughout this section rather than leaving them until the end, Isobel may have been more satisfied with the outcomes.

5.7 Conclusion

My findings present insights into the complexities of teachers' 'dialogical selves' (*ibid.*). Indeed, teachers receive, reproduce and even echo voices from multiple domains of their personal social and cultural contexts, as they endeavour to develop enquiry based learning in their school. Three and a half years after the beginning of the KTP project, although teachers report little in terms of continuing to develop actual enquiries in their school, there is considerable evidence of shifting perceptions, which influence their practice. In the next chapter, I will focus on a smaller sub-sample of teachers in order to concentrate on uncovering deeper underlying reasons for my findings, and how we can learn from them.

Chapter 6. Discussion:
Exploring teachers' shifting perceptions of enquiry based learning

My research findings in Chapter 5 (**pp. 79-116**) resonate with the key themes of my review of empirical literature in Chapter 2 (**pp. 14-39**). Furthermore, they provoke a discussion of issues regarding teachers' identity and agency within the context of curriculum innovation and change. The issues which I will discuss in this penultimate chapter are based on my personal exploration of three of the seven teachers' developing understanding of enquiry based learning at Tableford School. By focussing on a smaller number of teachers, I will present a further framework for exploring underlying interactions of social and cultural aspects of teachers' developing understanding of enquiry. This enables my contribution to the existing knowledge base regarding the concept of teacher agency. In the later sections, I re-evaluate some of the main methodological and ethical issues, which feature in my findings. And finally, my critique of this chapter signposts further areas of exploratory work into the fields of curriculum innovation and teachers' professional learning and development.

6.1 Revisiting the literature

I began my review of the empirical literature on enquiry based learning, dominance and social power, and teachers' professional learning with the suggestion that teachers' capacity to engage with enquiry and adopt it as a feature of their classroom practice relates to their personal philosophy of teaching and learning (**p. 7**). Indeed, enquiry is an example of 'divergent' teaching;

> 'It requires providing students with open, challenging tasks
> which generate meaningful experiences, but it is also dependent
> on teachers developing more flexible planning that is
> responsive to students' emerging learning and questions.'
>
> (**p. 10**)

Representing a socio-cultural model, enquiry is a pedagogical approach, which is particularly problematic in a culture of 'performativity' in UK education, where power and control are often exercised by external agenda and the publication of public league tables, targets and inspection reports that regulate teachers' practice (Jeffrey and Troman, 2012).

The KTP project between a northern UK university and Tableford School was designed to improve the quality of teaching and learning by developing a community of enquiry for students in Key Stage 3 and a formative assessment framework for enquiry skills (**p. 2**). In an unconventional approach to curriculum innovation, the project was led by me, an 'insider-outsider' to the school (**pp. 43-44**). It represented an intensive period of development for seven teachers selected from four subject areas; two each from English, Maths and Science and one from Art (**p. 57**), with whom I worked on a daily basis. There were real opportunities for 'transformation' (Kennedy, 2005) through curriculum innovation as teachers' perceptions of enquiry shifted over time and changes emerged not only within the school but also within teachers' 'dialogical selves' (Hermans, 2001b).

My definition of teachers' perceptions draws from empirical work by three particular authors. Indeed, my conceptual framework for this research study is based on a desire to explore Priestley *et al.*'s (2012a) ecological view of agency and the manner in which teachers cope with the tensions created by 'discursive gaps' (Bernstein, 1996), which emerge when the developing culture of enquiry in their school clashes with the culture of 'performativity' (Ball, 2008). My findings suggest that tensions exist in multiple dimensions of teachers' 'dialogical selves' (Hermans, 2001b). Within this chapter, I will discuss the implications of blending Hermans' (*ibid.*) theory with Bernstein's (1996) concept of 'symbolic control' to uncover the intricacies of the interactions of teachers' 'internal' and 'external' (Hermans, *ibid.*) positions because I suggest that it is the nature of these interactions, which influence teachers' shifting perceptions of enquiry, and ultimately their agency.

6.2 Reviewing my findings

My findings present teachers as 'dialogical selves' (Hermans, 2001b) composed of a polyphony of 'voices' (Bakhtin, 1981). Voices are a strong feature of Bernstein's (1966) concept of 'framing'. They are the real or perceived messages communicated by people and contextual factors within the social and cultural context of developing enquiry based learning at Tableford School. In terms of Hermans' (2001b) 'dialogical self theory', these are expressed through 'internal' and 'external' positions. 'Internal' and 'external' positions exist in a state of perpetual interaction with teachers'

perceptions of their 'selves', reflecting a 'dialogic' view of knowledge creation (Wegerif, 2008). My findings suggest that tensions occur when aspects of 'dominance and social power' (Hermans, 2008) interact with teachers' capacity to develop understanding of enquiry in their school. For example, there is very little evidence of teachers and students working together on actual enquiries in lessons three and a half years after the start of the KTP project (**pp. 93-105**). Indeed, it is possible to infer that empirically, teachers' perceptions of enquiry barely moved over time, that there was little or no professional learning, and that change simply did not happen. However, this could not be further from my perception of what actually occurred. Having adapted and presented a 'Personal Position Repertoire' (Hermans, 2001a) ('PPR') for each teacher (Appendices O-U, **pp. 172-178**), I now suggest that although they were originally selected to work as a group (**p. 57**), Andrew, Chloe, Christopher, Ethan, Isobel, Matthew and Michael encountered unique personal experiences of developing enquiry based learning in their school. In order to discuss this further, I have devised a framework for exploring the influence of teachers' 'dialogical selves' (Hermans, *ibid.*) on their shifting perceptions of enquiry based learning. By including Bernstein's (1990) system of coding dominant and non-dominant discourses (Table 2, **p. 26**), my framework facilitates a detailed exploration of the influences of power and control. It exemplifies the intricate complexities of teacher agency as well as teachers' capacity to identify changes within their 'selves' (Hermans, *ibid.*) and their teaching practice.

6.3 Identifying and exploring social and cultural gaps

My findings regarding the stunted development of enquiry at Tableford School typify Bernstein's (1996) concept of the 'discursive gap' (**p. 28**). Here, although the teachers demonstrate their various theoretical understandings of this pedagogical approach, they also give reasons for not taking action or not including it in their teaching practice. For example, Chloe (I2, 36/31, ll.53-55) recognises that enquiry based learning is a platform for developing independent learning skills (**p. 91**) and she describes many successful attempts at it. Conversely, however, her final words on the topic reflect the voice of 'performativity' (Jeffrey and Troman, 2012) (**p. 94**). Chloe (I3, 12/33, ll.165-175) is concerned by having to implement a new GCSE specification in a very short period of time. Her perception reflects tensions between applying an open and flexible, enquiry based, approach to learning within a rigid cultural context. This creates a 'cultural gap' and Chloe reverts to the dominant, 'transmission' model of teaching and learning (Biggs

and Moore, 1993) within her curriculum area. Furthermore, I perceive a 'social gap' when Chloe (*ibid.,* 3/1, ll.177-178) positions herself as the parent of one of her students. Here, she describes a voice which expresses a reluctance to engage with a divergent pedagogic model. In this example, although Chloe's personal philosophy of teaching and learning appears to resonate with an enquiry based approach, her perception as a parent is entirely different: students have to pass their exams and Chloe accepts the dominant pedagogical model. Here, she is neither lazy nor is she taking the easy option. Instead, Chloe is caught in the 'discursive gap' (Bernstein, 1996) between adapting her classroom practice in accordance with her shifting perceptions and being able to do so within the context of the features which make up her social and cultural environment (Leat and Reid, 2012). Within Bernstein's (1996) concept of 'pedagogic discourse' (Table 3, **p. 28**), there is little synthesis between the 'instructional discourse' of the classroom and the 'regulative discourse' of Chloe's wider social context. Chloe is not alone in this dilemma. Findings from Isobel's (I3, 59/7, ll.149-160) video data suggest that she experiments with enquiry in a similar way to her colleague in the English department. She, too, ultimately settles for a position of compromise (**p. 103**). Andrew (I3, 40/33, ll.87-89) is affected by his first-hand experience of the consequences of not adhering to the dominant model of teaching and learning in UK schools during an inspection visit (**p. 105**) and although Christopher (I3, 44/30, ll.181-183) is initially spurred on by his students' positive response to enquiry, he is gradually influenced by his perceived lack of time to develop it appropriately (**p. 97**). In the last two examples, Andrew and Christopher perceive 'strong' social and cultural contextual factors within their context of developing enquiry (Bernstein, 1996).

Social and cultural 'gaps' occur in multiple dimensions of teachers' 'dialogical selves'. For Hermans (2008), the 'dialogical self' is made up of interactions of 'internal' and 'external' positions as part of the 'other-in-the-self', 'multiplicity-in-unity', 'dominance and social power' and 'openness to innovation'. Indeed, I have used these sub-headings to organise the Findings chapter of my thesis (**pp. 79-116**). In doing so, I highlight the tensions which were created by introducing 'weak' social and cultural structures (Bernstein, 1996) to a social and cultural context dominated by 'performativity' (Ball, 2000). Importantly, however, I have also found that 'gaps' occur within teachers' 'internal' positions, as well as within and across a range of 'external' ones. Teachers' shifting perceptions of enquiry based learning are influenced by an array of internal and

external voices, which do not automatically translate into agency, improved teaching and learning or even innovation. Instead, within my research context, and stimulated by my conceptual framework for developing their understanding of enquiry, findings regarding the interactions of teachers' 'internal' and 'external' positions suggest that their perceptions shift to create 'discursive gaps' within multiple dimensions of their 'selves' (Hermans, 2008), which are far more complex than I originally perceived. In the next section, I uncover a system of underlying social and cultural aspects of teachers' 'dialogical selves' (Hermans, 2001b), which I adopt to further explore teachers' shifting perceptions of enquiry based learning.

6.4 Underlying social and cultural factors within teachers' 'dialogical selves'

The theme of underlying aspects of society is not new within this research study. It is a thread which runs from my review of the empirical literature on enquiry based learning, power and control, and teachers' professional learning (**pp. 14-39**), through my ontological position of critical realism (**p. 43**) and my discussion of my research stance as an 'insider-outsider' (**p. 45**) to my choice of research methodology (**p. 54**). Underlying social and cultural issues exist within the voices of teachers' 'dialogical selves' (Hermans, 2001b; **pp. 99-106**). For example, teachers hear voices, which provide reassurance (**p. 101**) but they also create tensions where the dominant discourses in school are perceived to be too 'strong' (**pp. 103-105**). Indeed, up to this point, my main findings suggest that, in terms of their practice, teachers' perceptions of enquiry based learning do not shift very much at all (**p. 116**). From my position of 'insider-outsider' (**p. 45**), however, I perceive that although these findings provide a great deal of information about the dominance of social and cultural factors within the context of this particular research study, they merely scratch the surface of what was really happening within teachers' 'dialogical selves' (Hermans, 2008). By using Bernstein's (1990) coding system for his theory of 'symbolic control' (Bernstein, 1996) and classifying each individual voice, I can uncover further interactions of teachers' 'internal' and 'external' positions not only within their context of curriculum innovation, but also in relation to the 'strong' contextual factors of 'performativity' (Ball, 2000) and the 'weak' (Bernstein, 1996) aspects of society, which underpin their developing understanding of enquiry based learning. These more detailed interactions provide further insights into teachers' shifting perceptions.

6.4.1 Identifying underlying social and cultural factors

Bernstein's (*ibid.*) theory of 'symbolic control' contains a coding system which provides a language for discussing aspects of social and cultural dominance (Table 2, **p. 26**). In the examples which follow, 'strong classification' represents controlling, hierarchical contextual factors in school, such as the timetable. 'Strong framing' signifies the concept of power, which is often distributed from the top of an organisation towards the bottom. In this context, the content of teachers' continuous professional development is often dictated by senior school leaders in relation to a school improvement plan. As a result, teachers often have very little control over their own professional learning. Conversely, research findings which I have presented in the previous chapter suggest that teachers within my study experimented with combining classes, and collapsing lessons in order to carry out enquiries (**pp. 106-114**). In these cases, 'classification' is 'weak' because the structure of the teaching and learning environment is more flexible and less controlled. 'Framing' is also 'weak' because teachers, not members of the senior leadership team, determine these contextual factors. Here, power over social and cultural factors emanates from the 'bottom' upwards. Within this research study, the socio-constructivist methodological approach of the KTP project was originally intended to be 'weak' in terms of 'classification' and 'framing' (Appendix A, **p. 154**). Working with me as the KTP Associate, teachers were encouraged to make decisions regarding their own developing understanding of enquiry (Figure 3, **p. 9**). Decisions included the structural design of enquiries as well as the distribution of power within their individual contexts.

6.4.2 Exemplifying the interactions of social and cultural factors within teachers' 'dialogical selves'

Appendices X-Z (**pp. 181-183**) exemplify the complex interactions of Bernstein's (1996) concepts of 'classification' and 'framing' within the context of teachers developing their understanding of enquiry based learning. In particular, they relate to Chloe, Ethan and Matthew's 'internal' positions 'I as thinker', 'I as listener' and 'I as talker'. These positions feature prominently in my findings on teachers' 'openness to innovation' (Hermans, 2008; **pp. 106-116**), and their capacity for change. They also exemplify the idea of multiple voices, which convey conflicting messages and create tensions or 'gaps' in terms of teachers' identity and agency within the context of their developing understanding of enquiry. By including more detailed findings for Chloe,

Ethan and Matthew, I acknowledge that I am rejecting potentially insightful information about Andrew, Christopher, Isobel and Michael. However, I suggest that Chloe, Ethan and Matthew present the clearest examples of my findings within this section. The following discussion presents the most realistic view of teachers' developing understanding of enquiry based learning, which I can provide within this research study from my position as 'insider-outsider' (**p. 43**) because it demonstrates the intricate interplay of concepts of power and control within teachers' 'internal' and 'external' positions (*ibid.*), which I had sensed but could not yet defend when presenting my findings (**p. 119**).

Following Bernstein's (1990) model, 'strong classification' is represented as '+C'. '-C' signifies 'weak classification'. 'Strong framing' is represented as '+F'. '-F' signifies 'weak framing'. Two codes appear with a slash (for example '+C/-C' or '+C/-F'), where there are tensions between underlying social and/or cultural factors. By adapting Bernstein's (*ibid.*) coding system for explaining his theory of 'symbolic control' (*ibid.*, 1996), I can magnify the intricacies of the interactions of teachers' 'dialogical selves' (Hermans, 2001b) as they strive to develop their understanding of enquiry based learning further still. For example, Bernstein (*ibid.*) employs the codes ^{i} and ^{e} to denote the concept of 'internal' and 'external' factors. Within the context of my research, I use these codes to signify the 'internal' and 'external' domains of teachers' developing understanding of enquiry (Figure 10, **p. 87**). However, I include the code ^{o} to show that issues involve the 'outside' domain of my findings. From this perspective, I present an interaction of issues relating to 'strong classification' outside Tableford School as '+C^o'. Conversely, I present an example of 'weak framing' involving the 'external' position 'Me/myself' as '-F^i'. As a result, I can suggest research findings relating to the prominence of teachers' 'internal' and 'external' positions (Hermans, 2001b) (**pp. 79-116**), and I can also suggest reasons for their prominence in relation to underlying social and cultural factors which influence teachers' capacity to change. Until now, these factors have remained implicit within my work.

6.4.3 Micro-interactions of contextual factors within teachers' 'dialogical selves'

Contextual factors interact within teachers' 'dialogical selves' (Hermans, 2001b) when I explore the interplay of 'internal' and 'external' positions (*ibid.*) in terms of 'strong' and 'weak' 'classification' and 'framing' (Bernstein, 1996). Indeed, Appendices X-Z

(**pp. 181-183**) uncover multiple micro-interactions within the 'internal' positions 'I as talker', 'I as listener' and 'I as thinker'. Here, voices in teachers' interview data convey messages about dominant contextual factors when they exemplify tensions and creativity as teachers work within perceived boundaries. They also convey messages about divergent, open and flexible, systems.

6.4.4 Micro-interactions signify 'strong classification' and social dominance

Talking to her 'self', Chloe (I3, 53/0, ll.173-174, $+C^i$) considers the value of the dominant teaching structure of modelling answers with her students. Going further, her 'internal' position 'I as thinker' interacts with her 'external' position 'My students in enquiry sessions' in her final interview to present a second example of the dominance of a social structure within her context of developing understanding of enquiry (Chloe, I3, 55/6, ll.247-251, $+C^e$). This contextual factor involves grouping students in classes or 'sets' according to their current and predicted attainment targets. In this case, Chloe initially casts doubt on the appropriateness of enquiry for all students, especially those in the lowest sets. Here, her perception of her students' capacity to engage with enquiry based learning is dominated by her negative perception, and experience, of 'bottom set' students.

6.4.5 Micro-interactions signify 'weak classification' and social divergence

Ethan (I2, 55/27, ll.27-30, $+C^e/-C^e$) considers the length of teacher talk in his lessons and becomes aware that he is spending less time standing at the front of the class and talking to the group. In this same extract from his interview data, he also remarks that his students enjoy and are capable of work independently of him as the teacher. Here, the formal contextual factors of instructional design become less rigid as a result of Ethan's contingent approach.

6.4.6 Micro-interactions signify tensions and creativity as teachers work within perceived contextual factors

Chloe, Ethan and Matthew provide an increasing number of examples of the tensions created by the 'discursive gaps' (Bernstein, 1996) between dominant and divergent contextual factors within interactions of their 'internal' and 'external' positions (Hermans, 2001b) over time. For example, during the early stages of his developing

understanding of enquiry, Matthew (I1, 55/27, ll.174-176, -C^e) perceives that his students are unable to process information in an enquiry in a Mathematics lesson without the usual contextual factors offered by his prescriptive planning. Indeed, it takes time for the students to become aware of the enquiry skills which Matthew (*ibid*., 40/6, ll.100-102, -F^e) expects them to develop over time because they initially focus on managing their behaviour and work rate when they are granted more freedom within the more open structure of enquiry. Lastly, in his final interview, Matthew (I3, 55/31, ll.188-192, -C^e) reflects on the extent to which enquiry has developed within the school. His response highlights inconsistencies between teachers and across subject areas.

Interestingly, there is evidence to suggest that where teachers are unable to close the 'gaps', they adapt existing dominant contextual factors for divergent aims. For example, on his return from a conference, Matthew (I1, 55/33, ll.195-202, +C^o) makes use of his new knowledge about changes to the National Curriculum to reassure the teachers within his Mathematics department that adopting an enquiry based approach to teaching and learning 'is going to be beneficial' (*ibid.*, 55/31, l.200, -C^e/-F^e). Here, Matthew takes a dominant contextual factor and manipulates it to portray a positive message about enquiry to his staff. In a further example, deterred by her experience of attempting to develop 'Habits of Mind' (Costa and Kallick, 2000) with a set of low attaining students, Chloe (I3, 42/30, ll.73-74) reduces the extent to which she includes them in her lesson to her 'starter'; the first section of the learning process, which is expected to take no more than fifteen minutes. Lesson planning is also an example of a dominant contextual factor, which Ethan adapts over time. In this case, in his third interview, Ethan (I3, 55/27, ll.364-367, +C^e/-C^e) describes his developing understanding of planning as a result of his involvement in developing enquiry. He reflects on his shifting perception from simply not planning his lessons, through preparing tasks for his students to complete in lessons using a three part planning template in line with whole school expectations, to planning for enquiry using his own format. In this example, his planning appears to be more rigid because he considers and records the questions he will ask his students and the roles which he will assign them in groups, however, the effect is a more fluid approach to learning in the classroom. Going further, Ethan (I3, 55/27, ll.10-28, +C^e/ -C^e) also discusses the role and purpose of learning objectives, a dominant contextual factor within lesson planning intended to clarify the intended outcomes of each lesson. Here, I sense that he is working within perceived boundaries

of dominance and divergence within the social and cultural contexts of his teaching practice.

I have uncovered further aspects of enquiry which have been manipulated by teachers and reinforce the concept of dominant contextual factors in school. These are the toolkit for enquiry, which was originally devised during the KTP project to stimulate students' thinking, and the manner in which group work is carried out in lessons. Firstly, in terms of the toolkit, it is Chloe (I1, 55/29, ll.50-51) who originally highlights the 8Q sheet as a useful template for encouraging students to ask questions. During her final interview, she claims that many of the templates from the toolkit are commonly used by teachers in the English department (Chloe, I3, 5/29, l.277). Going further, Ethan (I3, 53/27, l.255) states that he has reduced the amount of time he spends planning lessons by using the toolkit for enquiry skills. In relation to the decreasing prominence of enquiry in the school over time, I suggest that some of the teachers have adapted the function of the toolkit so that it no longer resembles that which was originally intended. For example, instead of including a range of templates upon which students can draw in enquiries, it has become a framework of activities for teachers to include in their lesson plans. The manner in which some of the teachers have adapted group work follows a similar pattern. As a divergent contextual factor, group work is an opportunity for students to work interdependently in their pursuit of responses to questions which they have set themselves. Although Matthew (I3, 40/7, ll.114-117, -F^e) and Ethan (I3, 40/7, ll.99-106, -F^e) both indicate that they share this view, they also give examples of re-structuring this approach to learning. In particular, Ethan (I1, 5/31, ll.8-11, +C^e) re-plays the voices of his students as they talk about the 'jobs' they have been assigned within their group during an enquiry. Matthew's (I1, 38/31, ll.115-118, +C^e) approach is to know where he wanted students to get to. In this case, the students work in groups but their rate of progress is determined by the teacher. Ethan and Matthew both demonstrate capacity to explore a more divergent approach to the structure of learning in their classrooms however they both also adapt the design of this approach to maintain control. In each of these cases, teachers come to terms with the dominant factors of their social and cultural contexts. As a result, they reduce their pedagogic practice of enquiry to 'tools' or 'frameworks', which were originally designed to develop understanding rather than examples of enquiry itself. I call this contractual agency.

6.5 Contractual agency

I have developed the concept of contractual agency as a result of my findings of teachers developing understanding of enquiry, which I perceive to be 'pseudo-enquiry'; an under-developed form of enquiry as a consequence of teachers' perceptions of their capacity to develop it in their school (**pp. 108-114; pp. 181-183**). Teacher agency is contractual when 'internal' positions 'I as talker', 'I as thinker' and 'I as listener' of a teacher's 'dialogical self' (Hermans, 2001b) perceive their capacity to mediate the social and cultural context as being limited by structural dimensions of 'dominance and social power' (Hermans, 2008). As a result, the teacher abbreviates or reduces their teaching practice. It is important to point out that teacher agency is contractual because it contributes to a process of knowledge creation, which is not static but fluid, and shifting in relation to dimensions of their individual contexts. It is limited by teachers' perceptions. In a different context, a teacher who has at one time perceived their agency to be reduced to the 'internal' domain may perceive new freedoms to extend the way they work.

The concept of teachers' contractual agency has parallels with how Assessment for Learning has ended up as a 'tool' in many lessons. For example, Marshall and Drummond (2006) distinguish between lessons that embody the 'spirit' of Assessment for Learning and those that conform only to the 'letter'. Teachers' contractual agency relies heavily on Bernstein's (1996) concepts of 'strong' and 'weak' 'classification' (**pp. 21-24**) as well as my findings concerning the 'internal', 'external' and 'outside' domains of this study (Figure 10, **p. 87**). In Figure 11, (**p. 128**), the 'internal', 'external' and 'outside' domains of teachers' 'dialogical selves' are represented by three different types of shading. Solid and dotted lines represent Bernstein's (1996) concepts of 'strong' and 'weak' classification' within teachers' 'internal' positions 'I as thinker', 'I as talker' and 'I as listener'. 'Strong' classification' is represented by a solid line. A dotted line signifies 'weak classification'. In terms of my study, 'classification' exists in the form of the external positions 'My timetable', 'My classroom', 'My rules and routines', 'The toolkit for enquiry skills', 'The Habits of Mind', 'Enquiry/my enquiries' and 'Other people/things'. Where the teacher perceives 'classification' to be 'weak' teachers have greater freedom to act. This is exemplified by the longest of the three arrows, ranging across all three domains. Agency is less likely to be 'contractual'

where teachers have more scope to develop understanding of enquiry. Where 'classification' is too 'strong', teachers reduce their agency to processes of thinking, talking and listening within the 'internal' domain of the 'self'.

Figure 11: Teachers' contractual agency
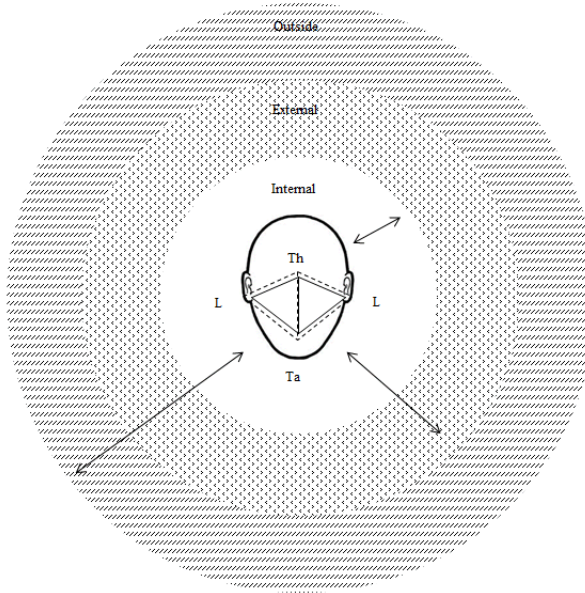
6.6 The distribution of control within interactions of teachers' 'internal' and 'external' positions

My framework for exploring interactions of underlying social and cultural issues within teachers' 'dialogical selves' (Hermans, 2001b) also provides an increasing number of examples of 'weak framing' ('-F') over time (Bernstein, 1996) (Appendices X-Z, **pp. 181-183**). 'Weak framing' occurs when dialogue flows freely through society (Bernstein, *ibid.*). In terms of control, 'weak framing' amplifies the voices from the lower social classes (*ibid.*). In school, these voices belong to students and class teachers without particular responsibilities or standing within the social hierarchy. My findings contain examples of a number of interactions involving the concept of 'framing' within teachers' 'internal' and 'external' positions (Hermans, *ibid.*). Most notably, they include the influence of students' voices and a growing number of colleagues, as the teachers who were part of the original KTP group extend the range of their conversations about developing understanding of enquiry to include other teachers in school (Table 15, **p. 115**). Conversely, however, control is ultimately maintained in the

form of feedback to the teachers which is related to dominant contextual factors of performance management, Ofsted inspections and lesson observations.

In summary, my framework for exploring interactions of underlying social and cultural aspects of teachers' 'dialogical selves' (Hermans, *ibid.*) uncovers a complexity of reasons for teachers' shifting perceptions of enquiry based learning over time. Reasons account for the apparent failure to develop enquiry in the school in that they relate to a further 'discursive gap' (Bernstein, *ibid.*) between powerful contextual factors and the divergent distribution of control. Here, the concept of 'weak framing' becomes increasingly prominent over time yet its capacity to influence change at Tableford School is limited by 'strong' contextual factors (**pp. 181-183**).

6.7 Teachers' perceptions of change

I strongly suggest that the divergent distribution of control in the school during the period of teachers' developing understanding of enquiry played a major role in shifting teachers' perceptions in spite of the existence of powerful contextual factors (***ibid.***). Indeed, in each of their final interviews, Chloe, Ethan and Matthew perceive changes in their teaching style and in their relationships with others, especially their students, as a result of the increasing prominence of 'weak framing'.

Chloe (I3, 55/27, ll.120-123, -C^e) reflects on a conversation with her immediate line managers during which she recognises changes in her teaching style, which reflects 'weaker' 'classification', promoting a different 'working atmosphere'. This is in contrast to the interaction between her 'internal' position 'I as critical' with the 'external' position 'Me/myself', in which Chloe (I3, 14/0, ll.120) signals an emerging self awareness of her own 'strong framing' and controlling behaviour in the classroom. By talking to a colleague in the English department, however, Chloe (I3, 55/27, ll.133-141, -C^e) is able to suggest more specific reasons for her changing style;

> 'What I am conscious of trying not to do so much although I
> have no idea of how much I succeed, is maybe not talk so much,
> maybe make it not quite so teacher led in my lessons, which I
> think it's fair to say, when you first came and observed me, a lot
> of them were.'

In each of these examples, Chloe's perception of her teaching shifts through dialogue and a growing awareness of the controlling nature of talk because of 'weak framing'.

From an early stage, Matthew's (I1, 53/0, l.4, -C[i]) 'internal' position 'I as talker' interacts with his 'external' position 'Me/myself' to interrogate the manner in which he plans for enquiry therefore it is hardly surprising that his perception of change involves the way he creates opportunities for his students and his 'self' to ask questions (Matthew, I3, 55/27, l.12, -C[i]). I have also uncovered a change in the language Matthew uses to describe his experiences of developing understanding of enquiry. Although I sense that he is aware of this, I cannot be certain because I have never asked him about it. In his interviews, Matthew (I1, 51/31, ll.152-156) discusses including the 'Habits of Mind' (Costa and Kallick, 2000) within the learning objectives in Maths lessons, however I have identified that he adopts the language of enquiry when he talks about his pedagogical experiences. For example, when he reflects on the thinking processes which he would like his students to demonstrate, Matthew (I3, 55/28, l.29, -C[e]) uses one of Costa and Kallick's (*ibid.*) terms, which I have emphasise in italics in the quotation below;

> 'So it's about thinking about sort of monitor, sort of reviewing, and that's not the word I am looking for. What's the word I am looking for? *Refining and monitoring* their answer and thinking, 'This is … the calculations are fine but when we apply it to real life and real situations, we can actually answer this question more than one way, which is unique; which can be unique in Maths and it's important that students see that, because typically it is right or wrong…'

Matthew is the only teacher from the group of seven to adopt the language of enquiry which was displayed around the school in the form of metacognitive knowledge and skills during the KTP project (Figure 2, **p. 5**).

Finally, Ethan's perception of change is personal as well as professional. On one hand, he attributes his shifting perceptions of enquiry to a natural process of growing up (Ethan, I3, 55/0, l.235, -F[i]). It is true that Ethan has experienced a number of different personal events during the period of this research study; he is now married (*ibid.*, l.240), he has bought his own house (*ibid.*, l.241), and he was promoted to the post of Student Performance Leader for Year 9 (*ibid.*, l.173). On the other hand, Ethan's 'internal' positions 'I as listener', 'I as talker' and 'I as thinker' interact with more 'external' positions than any other teacher (Appendix V, **p. 179**). The range of his 'external' positions includes 'Me/myself' as well as those from the domain of the KTP project,

within the school but outside the KTP project, and outside school. Many of his perceptions of professional change are included in the section on micro-interactions of dominant and divergent contextual factors within teachers' 'dialogical selves' (**p. 123**). In these examples, professional change refers to shifts in Ethan's pedagogical practice.

Chloe (I3, 55/27, ll.120-123), Ethan (I3, 13/27, ll.12-14, -C^e) and Matthew (I3, 66/7, ll.53-54) each perceive gradual change over time, yet their descriptions of enquiry based learning suggest that it is not fully developed within their school (**pp. 124-127**).

6.8 A 'discursive gap' (Bernstein, 1996)

How is it that teachers perceive changes in their 'selves' and/or their pedagogy, which seemingly do not influence the process of curriculum innovation enough for it to fully emerge as a pedagogical approach? My response to this question involves a return to Bernstein's (1996) concepts of 'pedagogic discourse', 're-contextualisation' and ultimately, the discovery of a 'discursive gap' (*ibid.*) caused by a mismatch of 'instructional discourse' and 'regulative discourse' within my research (*ibid.*; **pp. 21-24**).

I have already demonstrated how these 'instructional' and 'regulative discourses' are evidenced in the context of a school (Table 3, **p. 28**). In terms of my research, however, 'instructional discourse' involves decisions I made about my choice of methodology (**pp. 50-64**). It includes my research position as an 'insider-outsider' (**pp. 43-45**), my pursuit of a dialogic process of knowledge creation using interview and video data as well as teacher feedback (**pp. 52-54**), and my relational approach to my work (**p. 10**). These are all examples of 'weak classification' and 'weak framing' because my research approach is open and contingent. 'Regulative discourse' is dominated by the influence of contextual factors (Bernstein, 2000, p. 13), which can result in contractual teacher agency (**pp. 127-128**), and varying forms of social power as evidenced by Chloe, Ethan and Matthew's 'internal' positions 'I as talker', 'I as listener' and 'I as thinker' (**pp. 122-127**; Appendices X-Z, **pp. 181-183**). Indeed, I detect a 'gap' in the process of teachers developing understanding of enquiry when multiple voices conveying numerous, often conflicting, messages crowd the 'regulative discourse' and dominate the weaker 'instructional discourse' (Bernstein, *ibid.*).

In Figure 12, for example, (**below**), both the dotted line and the dotted arrow below and from 'instructional discourse' (*ibid.*) signify the open style in which I worked with the teachers. Conversely, their developing understanding of enquiry was increasingly restricted because of perceived boundaries created by 'regulative discourse' (*ibid.*). Here, the 'discursive gap' (Bernstein, 1996) is created as a result of the abundance of voices conveyed within Chloe, Ethan and Matthew's 'internal' positions of their 'dialogical selves' (Hermans, 2001b). It reduces their capacity to develop enquiry based learning within an 'empirical' domain of reality (Bhaskar, 1978).

Figure 12: The 'discursive gap' (Bernstein, 1996) within this research study
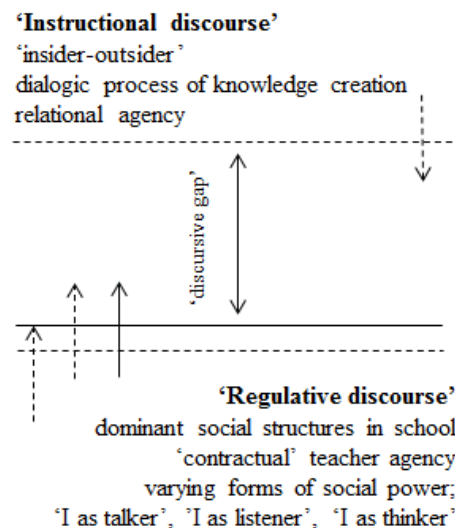
As I approach the end of my process of researching teachers' shifting perceptions of enquiry, my contribution to the existing knowledge base regarding enquiry based learning, concepts of power and control and teachers' professional learning is becoming increasingly clear to me. Indeed, it is precisely because of the 'discursive gap' (*ibid.*) between 'instructional discourse' and 'regulative discourse' (Bernstein, 2000) within my research that I can begin to recognise my increasingly subject-centred approach to researching teachers developing understanding of enquiry. My discovery of a subject-centred approach to teachers developing understanding of enquiry will influence the manner in which I research teachers' professional learning and curriculum innovation in the future.

6.9 A subject-centred approach to teachers developing understanding of enquiry

My conceptual framework for this study (Table 4, **p. 33**) includes an ecological view of teacher agency (Priestley *et al.*, 2012a). Here, agency involves teachers' personal capacity to act in relation to the contingencies of their environments. Indeed, agency is

> 'a dialogical process by and through which actors immersed in temporal passage engage with others within collectively organised events for action.'
>
> (Emirbayer and Mische, 1998, p. 974)

Conversely, I recall referring to a 'paradox of innovation without change' (Priestley *et al.*, 2011) at an earlier stage of my work (**p. 18**). This is certainly one aspect of my research findings (**pp. 118-119**), however I am now able to respond to this concept and suggest a rationale for its existence. Eteläpelto *et al.* (2013) present a review of the multidisciplinary concept of agency. Indeed, I share their interest in the dynamic interplay between contextual conditions and teacher agency. Going further, however, their research perspective is subject-centred (*ibid.*, p. 45). They suggest that although the concepts of individual agency and social context are highly interdependent, they are also analytically separate. I interpret this as an opportunity for exploring the social and cultural dimensions of a teacher's capacity to mediate their environment. Indeed, it causes me to reflect upon the KTP model of knowledge creation during the early stages of my study and the manner in which I have analysed teachers' data more recently. For example, the initial model for teachers developing understanding of enquiry involved teachers as objects working through a process in order to achieve a desired outcome (**p. 9**). In the latter stages of my research, I have presented teachers' subjective experiences of developing understanding of enquiry in relation to multiple internal dimensions of their 'dialogical selves'. This shift in perspective represents a relational view of teachers as complex individuals collaborating on a process for developing the quality of teaching and learning in their school. My subject centred approach is evidenced by my exploration of the micro-interactions of Chloe, Ethan and Matthew's 'dialogical selves' (**pp. 123-127; pp. 181-183**). Here, their agency is an embodied experience comprising many voices. It is embodied because it does not necessarily exist empirically. Teachers carry it within their 'selves' (Elder-Vass, 2008).

6.9.1 Teachers' internal agency

The concept of teachers' internal agency allows me to rationalise the 'paradox of innovation without change' (Priestley *et al*., *ibid.*). Internal agency regards each teacher as an individual subject. It also emphasises multiple layers of activity, which exist as micro-interactions within their 'dialogical self' (Hermans, 2001b) and the increasing prominence of the 'external' position 'Me/myself' over time (Table 14, **p. 115**). Figure 13 (**p. 134**) exemplifies internal agency in relation to the interactions of Chloe, Ethan and Matthew's 'internal' positions 'I as talker', 'I as listener' and 'I as thinker' (**pp. 123-127; pp. 181-183**).

Figure 13: Teachers' internal agency
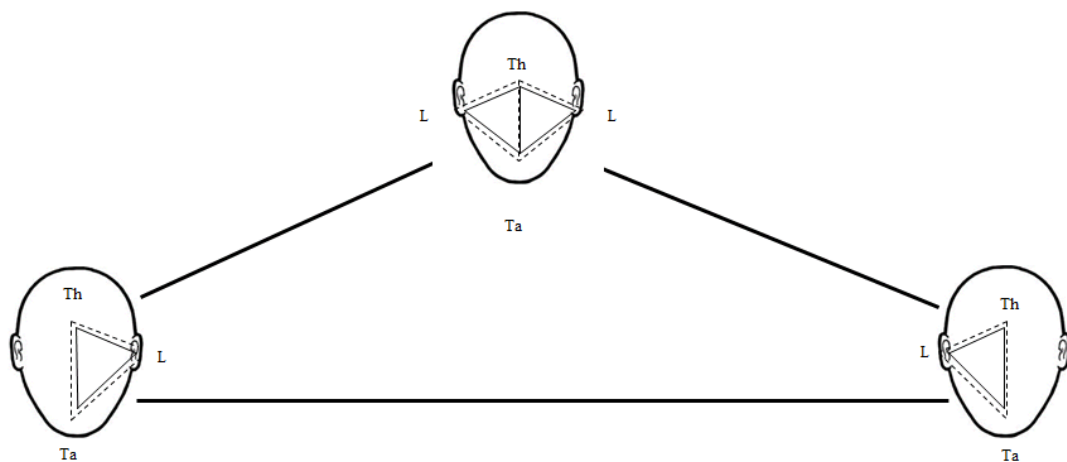
The diagram is intended to demonstrate how each of the three teachers engaged in a process of developing understanding of enquiry which did not result in change in the form of improved or altered teaching practice in school. Here, teacher agency includes Bernstein's (1996) underlying concept of 'framing'. Fixed lines represent 'strong framing' (*ibid.*) , and perceptions of control, which impede development. Dotted lines appear where there is 'weak framing'. Here, teachers control their developing understanding of enquiry by thinking, listening and talking about it in order to enable change. The line between teachers in the diagram signifies how are brought together by doing this. Where teachers perceive aspects of control to be too 'strong' (*ibid.*) for them to enable change, the activities of talking, listening and thinking shift to within their 'selves'. Teachers do not cease to be agentic, however. Their agency takes a different form. It is internal.

6.10 Critique

In general terms, teachers' internal agency has similarities with Archer's (2003) concept of 'internal conversation' because they both attempt to link agency and structure. However, I am not seeking to follow Archer's (*ibid.*) interest in particular reflexive modes at this stage of my research. I am more satisfied with my discovery that teachers as multi-dimensional 'dialogical selves' (Hermans, 2001b) exist as part of a 'theatre of voices' (Hermans, 2006b), with shifting perceptions of enquiry based learning as a result of interactions of power and control within their 'internal' and 'external' positions, and in relation to their changing contexts.

Chapter 7. Conclusion and Recommendations: Comparing experiences

My study of teachers' developing understanding of enquiry was originally motivated by a personal desire to find out whether teachers' personal experiences of developing enquiry based learning involved internal tensions, which were similar to those I encountered as a result of moving from my role in a KTP project, to a position of senior leadership in another school (**pp. 2-2**). In the early stages of my thesis, I positioned enquiry based learning as an innovative pedagogy which is difficult to apply in schools (**pp. 4-6**). I then presented an evaluation of contrasting approaches to teaching and learning; one convergent, the other one divergent (**pp. 9-10**). Going further, I suggested that teachers' personal, social, political and cultural contexts influence their potential for adopting a divergent, enquiry based, approach to teaching and learning (*ibid.*). I inferred that teachers who share an 'innovation-oriented' view of pedagogy tend to adopt new practices more readily than those who do not (Song and Looi, 2012). Next, I highlighted teacher talk as a catalyst for enabling change (**pp. 29-30**). My conceptual framework for this study signalled the importance of teachers' personal, social, political and cultural contexts in curriculum innovation and professional learning (**pp. 31-39**). Indeed, my research position as an 'insider-outsider' (**p. 43**) and my personal view of society as composed of multiple domains (**p. 43**) insisted upon a dialogic methodological approach to this thesis (**p. 47-64**), which would create opportunities for exploring previously undetected dimensions of teacher agency within the context of developing understanding of enquiry. The discoveries which I have made in developing this thesis have implications for the manner in which I conduct research studies with teachers in the future. Other members of the academic community can learn from this, too.

7.1 Teachers' shifting perceptions of enquiry based learning

My study is guided by two research questions;

Main question:

How do teachers' perceptions of enquiry based learning shift over time?

Subsidiary question:

For what reasons?

In terms of teachers' shifting perceptions of enquiry based learning at Tableford School, by focussing in on underlying aspects of teachers' 'dialogical selves' (Hermans, 2001b), I have discovered the existence of two forms of teacher agency which exist within Hermans (2008) concepts of 'other-in-the-self', 'multiplicity-in-unity', 'dominance and social power' and 'openness to innovation'. Here, teachers engage in a multiplicity of micro-interactions involving 'classification' and 'framing' (Bernstein, 1996) within the context of developing understanding of enquiry based learning in their school. These interactions account for perceptions of changes in teaching practice, which provide little evidence of the desired model of enquiry at the beginning of the KTP project. Indeed, the processes of teachers' professional learning within my study include dimensions of 'performativity' (Ball, 2000), which do create tensions, but which are mediated by teachers in the form of contractual agency (**p. 127**) and internal agency (**p. 134**).

7.2 What have I learned?

Contractual and internal teacher agency provide rationales for the difficulties encountered when applying enquiry based learning in schools. Indeed, through these lenses, Song and Looi's (2012) 'innovation-oriented' view is somewhat naïve because I have evidence of teachers who desire to engage with enquiry, but are unable to do so because of their perceived consequences of underperforming within the dominant contextual factors inside and outside school (**pp. 118-119**). From this perspective, teachers' professional learning was dominated by their social and cultural context. Indeed, in the case of Tableford School, the pressures of 'performativity' (Ball, 2003) overcame the prominence of enquiry and it began to fade.

Going further, however, although the experience of developing understanding of enquiry created tensions and was at times difficult for some of the teachers to endure (**pp. 100-105**), I have found no evidence in my study of the profound epistemological crisis, which I encountered prior to beginning my thesis. I account for this by referring to their 'relational' approach to developing enquiry, which manifests itself in the form of contractual and internal agency. Indeed, the concept of 'relational agency' (Edwards and D'Arcy, 2004) reinforces my developing understanding of 'dialogic' processes of researching teachers' professional learning. As a result, I will be aware of the multiple dimensions of teachers' 'selves' in my future research studies and design my projects with this in mind. Indeed, this is a skill set, which I can offer to research teams and

which senior school leaders should develop in order to support the professional learning of teachers in their schools.

7.3 What can others learn?

Although empirical evidence of 'dialogical self theory' (Hermans, 2001b) in education is beginning to emerge (Day and Jesus, 2013; Fecho, 2013; Fransson and Grannäs, 2013; Hermans, 2013; Krotofil, 2013), my approach to researching concepts of social power and control, and teachers' professional learning within the context of teachers' developing understanding of enquiry based learning includes an innovative method of coding teachers' interview data for analysis and radar graphs for presenting my findings. This is an adaptation of Hermans' 'PPR' (2001a) which does not already exist empirically. Other researchers can learn from my choice of methodology, which was designed to meet the needs of my research questions as well as addressing issues involving my epistemological position.

7.4 Recommendations for further research

My recommendations for further research are based on the belief that the culture of 'performativity' (Ball, 2003) in UK education will not disappear in the near future. Teachers developing understanding of enquiry based learning at Tableford School is an example of just one case study of enquiry based learning, concepts of social power and control, and teachers' professional learning. I would like to find out more about the validity of my concepts of contractual agency and internal agency within different school contexts in order to support professionals who experience the tensions described in my study. Future research projects would involve teachers at different stages of their careers, from within particular curriculum areas, and working in schools whose inspection gradings ranging from 'outstanding' to 'requires improvement' (Ofsted, 2013). Finally, I would like to further develop my concepts of prominence and relationality. This is based on my discovery of 'internal' and 'external' positions, which emerged over time and lacked prominence but were perceived as being highly influential in teachers' developing understanding of enquiry.

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Appendices

Assessing learning within a community of enquiry

Project stage and title	Time	Aims and objectives
1 Building foundations	2 months	1.1 Study appropriate knowledge bases through literature searches and use of meta-analysis 1.2 Become familiar with digital ICT resources for recording self and peer (and parental) assessment of enquiry outcomes through literature searches and the use of key Informants 1.3 Organise parental permission for student involvement and form a working protocol for teacher researchers
2 Investigating baseline practice and establishing working methods	2 months	2.1 Collect data from students and teachers on enquiry processes in Key Stage 3 2.2 Analyse existing enquiries and associated learning strategies within the Key Stage 3 curriculum through classroom observation and document analysis 2.3 Analyse existing peer and self assessment practice through classroom observation, video, reading schemes of work, student interview 2.4 Review the research design where necessary (through a research diary, lesson videos, teacher diaries) 2.5 Establish working relationships with students and teachers 2.6 Re-evaluate subject groups for trialling / observation 2.7 Test technologies for suitability for portfolio work with help from students 2.8 Establish 'advisory friends' for support and problem solving
3 Moving on	3 months	3.1 Research and develop a framework for the assessment of enquiry learning outcomes including classroom trialling (short action research cycles), drawing upon worldwide ideas and literature 3.2 Trial ICT in learning settings, using student researchers to test relevance and usability 3.3 Collaboratively design innovations in enquiry procedures with teachers and students, so that enquiries make learning processes and outcomes more explicit and encourage transfer of learning through self-assessment and metacognitive approaches
4 Refining	2 months	4.1 Trial and further develop the framework of self-assessment of pupil enquiry 4.2 Trial and further develop enquiries in learning settings 4.3 Investigate research and development across the whole school with a view to replicating the project's findings in other curriculum areas with other students
5 Planning knowledge transfer	3 months	5.1 Test and refine the whole innovation (innovative enquiry and self-assessment within digital portfolios in key subjects 5.2 Research the learning progression of staff and pupils through focus groups and learning logs, to identify the training needs of a subsequent cohort of staff and students 5.3 Design and produce a training and coaching package for the first wave of staff for a 'transfer of learning' within a school context
6 Knowledge transfer	3 months	6.1 Refine the whole innovation by consolidating the assessment framework, and enquiry and assessment practice in collaboration with trial staff and students 6.2 Train new staff with 'experts' from the first wave of teachers using a training model which will include coaching and video footage of 'good' practice 6.3 Train new students with first wave pupils, through instruction and mentoring 6.4 Negotiate whole school implementation and structure to ensure significant curriculum innovation 6.5 Test parts of the innovation in other schools
7 Develop commercial package	9 months	7.1 Introduce a visitor package for the school 7.2 Produce published work on the project (a series of research papers and presentations to conferences)

We are working collectively, through research and development (R&D) processes, to improve the educational experience and outcomes of the students of Tableford School and increase the professional satisfaction of staff.

The British Educational Research Association (BERA) recommends that researchers endorse and employ their guidelines in support of their work. The BERA (2004) guidelines enable researchers;

- to reach an ethically acceptable position in which their actions are considered justifiable and sound.

As a community of researchers, our aim is;

- to extend knowledge and understanding in the area of developing an assessment framework for critical thinking and enquiry within Key Stage 3 from the perspective of teachers and learners, but also of other educators, policy makers and the public (parents).

We recognise that;

- our research is conducted within an ethic of respect for the person, knowledge, democratic values, quality and academic freedom i.e. we will be careful to ensure that no information provided in confidence can lead to any prejudice, embarrassment or other detrimental consequence.

As a community of educational researchers, we will;

- give our voluntary informed consent to the project,

- avoid deception or subterfuge,

- recognize the right of every participant to withdraw from the research,

- facilitate the fully informed consent of our students,

- seek the collaboration and approval of those who act in guardianship or as 'responsible others',

- comply with legal requirements in relation to working with school children,

- take all the necessary steps to reduce the sense of intrusion,

- seek to minimize the impact of the research on each other's normal working and workloads,

- recognize the entitlement to privacy and the rights to confidentiality and anonymity,

- recognize the right to be identified with any publication of the original work,

- undergo a debriefing period at the end of the research process and be provided with copies of any reports or publications arising from the project.

Anna Reid, version 3, 14 January 2008

Dear

Doctorate in Education – Consent

I am writing to re-introduce myself after leaving your school at Christmas time in 2009. I have been at xxx in xxx but I have recently made the decision to quit my current role and complete a doctorate in Education which I have been working through for a number of years. The doctorate in Education involves writing a thesis of about 50,000-60,000 words. The subject of my thesis is how the original group of teachers in your school developed the tools, habits of mind and enquiries you used during the Knowledge Transfer Partnership project.

I already have a lot of video evidence and information from the KTP but in order to make some final conclusions, I would like to carry out a final round of interviews in school on Wednesday 25 May 2011. The interviews will take place in accordance with the British Educational Research Association guidelines which can be found online at www.bera.ac.uk. The information I get from the interviews will be used mainly for my thesis but there may also be opportunities to make presentations at conferences. In all cases, I will ensure that your identity is kept safe; your real name will not appear anywhere.

Your interview will take place between   and   in xxx. Please wait for me in the school reception and I will escort you through. If you agree to take part, complete the form below and bring it with you on Wednesday. I appreciate that you are very busy but I would be really grateful for 30 minutes of your time. My e-mail address and telephone contact details are below. Contact me at any time with questions or comments.

I look forward to seeing you again soon.

Yours sincerely

Anna Reid
E-mail: a.j.reid1@ncl.ac.uk

FAO: Anna Reid

I agree to take part in the interviews for Anna Reid's doctorate in Education and accept that all information will be kept anonymous.

Signature : _____   Date: _____

'*Table 1*. Nancy's internal positions (rows), external positions (columns) and their prominence ratings'

		Child (Dan)	Partner	Sister (Doris)	Sister (Mary)	Friend (Carla)	Friend (Sally)	Somebody loved	Employer	Father	Figure in book	TV-personality	Somebody admired	Brother (Paul)	Mother	Therapist	Problematic person	Physician	Ex-partner	Acupuncturist	Overall prominence
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
1.	Listening	5	2	4	4	4	4	3	2	1	3	3	4	3	4	3	2	4	1	2	58
2.	Vulnerable	3	3	4	4	3	4	3	3	3	4	4	2	3	3	3	2	2	2	2	57
3.	Understanding	4	3	4	4	5	5	4	1	3	3	3	3	4	2	1	2	2	1	0	54
4.	Freedom seeker	2	2	2	3	4	3	2	3	2	4	4	4	4	3	2	4	0	4	0	52
5.	Faithful (C)	5	5	4	4	3	4	4	4	3	1	1	2	3	2	3	1	1	1	1	52
6.	Accepting	4	2	2	3	5	4	4	1	4	3	3	3	4	2	1	2	2	1	1	51
7.	Warmth seeker	4	4	3	3	2	4	4	1	4	3	3	3	2	4	1	1	2	0	1	49
8.	Recognition seeker	2	5	3	3	3	1	2	5	5	2	2	2	2	5	2	0	2	0	2	48
9.	Recognition seeker	3	2	2	2	3	3	3	4	3	2	2	2	3	3	2	1	1	1	1	43
10.	Caring	5	3	4	2	4	3	3	2	3	1	1	2	0	2	1	3	1	1	1	42
11.	Doubter	3	2	3	3	3	1	2	3	4	1	1	1	3	3	1	3	2	3	0	42
12.	Woman	2	5	3	3	1	3	3	1	1	4	4	3	0	1	2	1	2	1	1	41
13.	Dreamer	3	4	3	3	4	3	4	1	2	3	3	4	0	0	0	0	0	0	0	36
14.	Careless (C)	2	3	4	3	3	2	3	0	1	3	3	3	2	0	2	0	1	0	1	36
15.	Sacrificing	1	2	3	3	1	5	2	2	2	0	0	0	4	4	1	4	0	2	0	36
16.	Uncertain (C)	2	2	1	1	2	1	1	3	4	1	1	3	2	2	1	4	2	1	1	35
17.	Fearful	2	1	2	2	3	3	1	4	3	1	1	0	2	3	0	2	2	1	0	33
18.	Idealist	3	3	2	2	2	3	3	1	0	3	3	1	1	0	3	0	2	0	1	33
19.	Always nice	2	1	3	2	2	3	2	2	3	1	1	3	1	2	1	1	1	1	0	32
20.	Relativizing	2	1	2	2	2	1	1	1	2	2	2	2	2	1	2	1	2	1	2	31
21.	Creative	3	3	4	3	3	2	3	2	0	3	2	1	0	0	1	0	0	0	0	30
22.	Perfectionist	2	2	2	1	1	2	1	5	3	1	1	2	2	0	1	1	0	1	0	28
23.	Child in myself	1	3	3	2	0	2	2	3	1	1	1	2	1	2	2	0	1	0	1	28
24.	Critic	2	2	1	1	0	1	1	3	3	1	1	1	1	2	1	2	1	2	1	27
25.	Spiritual	1	1	3	4	4	0	2	0	2	2	2	1	1	0	1	0	0	0	1	25
26.	Fighter (C)	4	1	2	2	1	1	1	1	0	2	2	0	0	0	2	0	2	1	2	24
27.	Pusher	2	2	2	2	1	2	2	3	1	0	0	0	2	1	0	3	0	0	0	23
28.	Sexual	1	4	0	1	2	0	2	0	1	3	3	2	1	0	0	0	1	0	1	22
29.	Jealous	1	3	1	2	0	1	1	2	0	2	2	2	2	0	2	0	0	0	0	21
30.	Mother	4	2	1	1	2	1	2	1	0	3	2	0	0	1	0	0	0	0	0	20
31.	Demanding	2	2	0	0	2	1	1	2	2	1	1	1	0	2	1	0	1	0	0	19
32.	Materialist	2	2	0	1	0	0	1	3	1	0	0	1	0	1	0	0	0	1	0	13
33.	Aggressive (C)	1	0	1	2	0	1	0	1	2	0	0	0	0	0	0	1	0	1	0	10
Overall prominence		85	82	78	78	75	74	73	70	69	64	62	60	55	55	43	41	37	28	23	

'*Note:* The entries of the matrix refer to the extent to which a specific internal position comes forward in relation to a specific external position. The overall prominence index is the sum of all the ratings within a row or column. The indication C refers to the positions that were added by the client.'
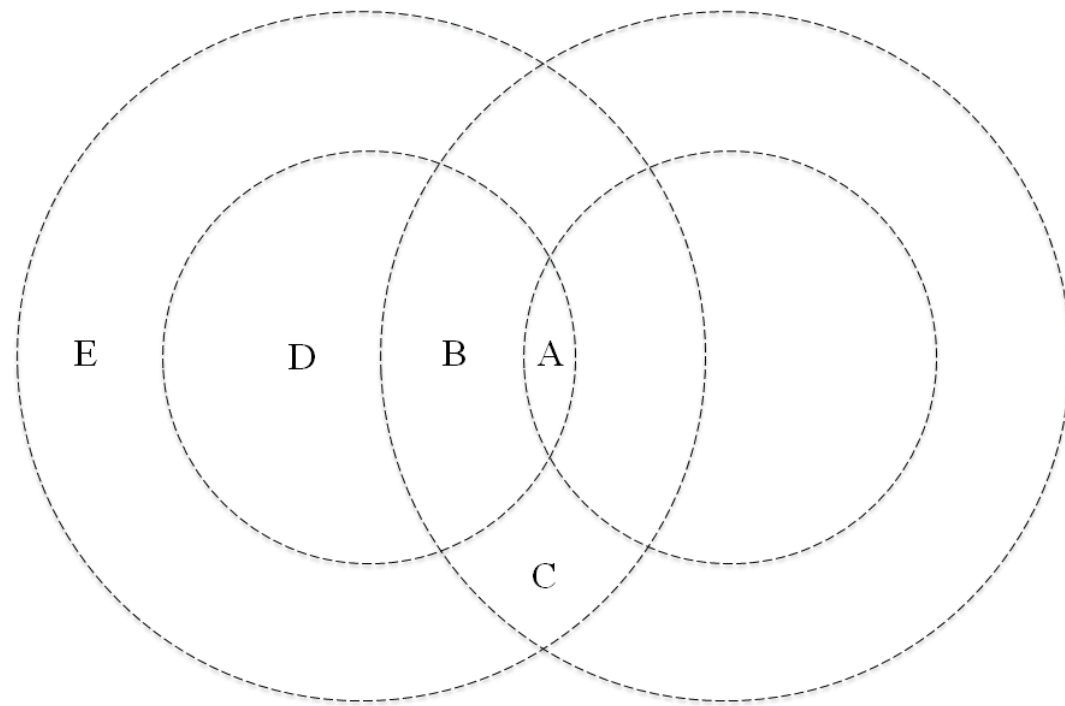
Figure A
(Hermans, 2001b, p, 256)

outside

external

internal
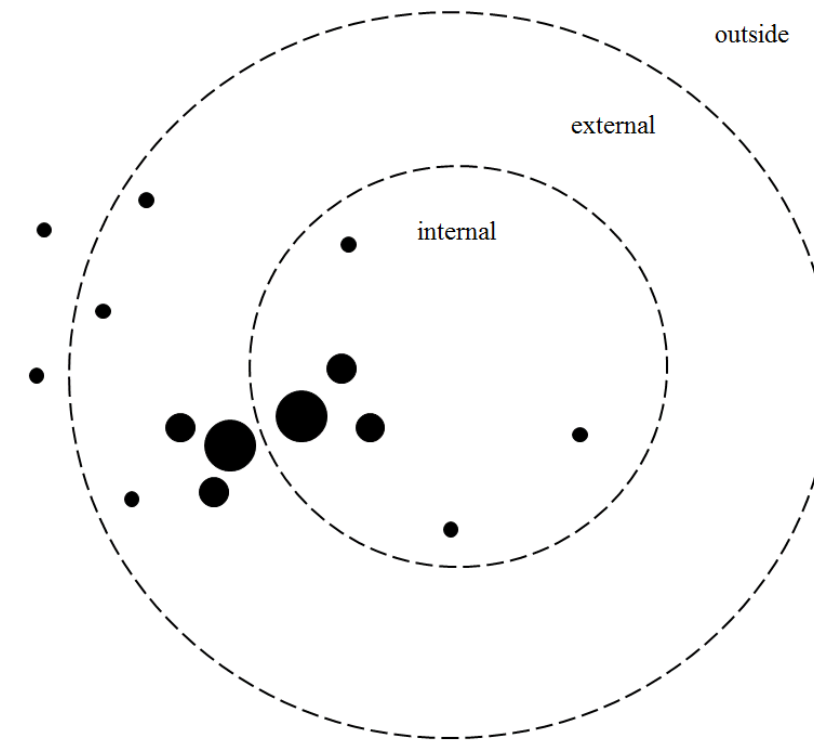
Figure B
Hermans' (2001b, p. 253) model of positions of the dialogical self

partner
father
gregarious
mother
sacrificing
children
enjoyer
father-in-law
mother-in-law

likes to be alone
disillusioned
discriminating Dutch people
Michel Bouquet
vulnerable
sister
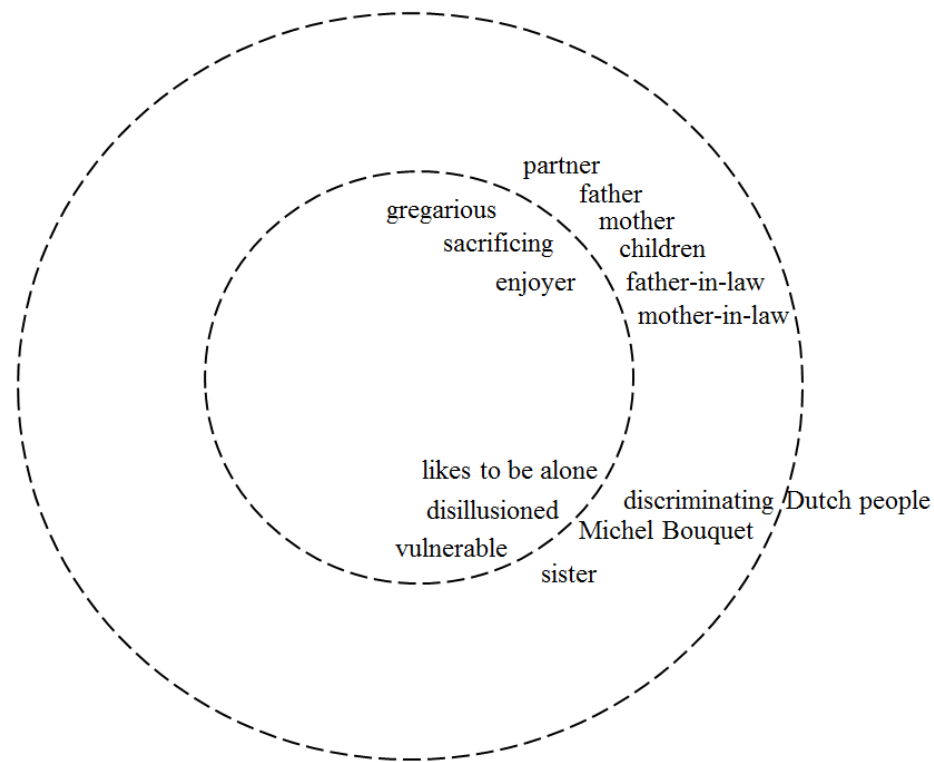
Figure C
(Hermans, 2001a, p. 356)

husband
father
mother
Dutch woman
married to an Algerian man
God
wife
vulnerable
my brains
father-in-law
mother-in-law
sister-in-law
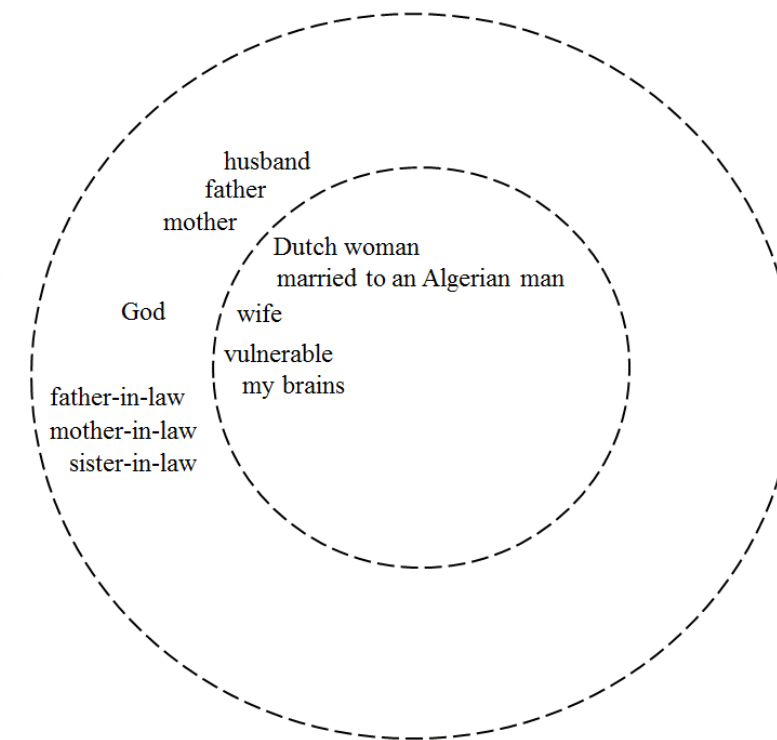
Figure D
(Hermans, 2001a., p. 359)

How do teachers' perceptions of enquiry based learning shift over time? For what reasons?

2

3

Semi-structured interviews

Video recorded lessons

1

4

Teacher

Teacher

Teacher

Teacher

Teacher

Teacher

Teacher
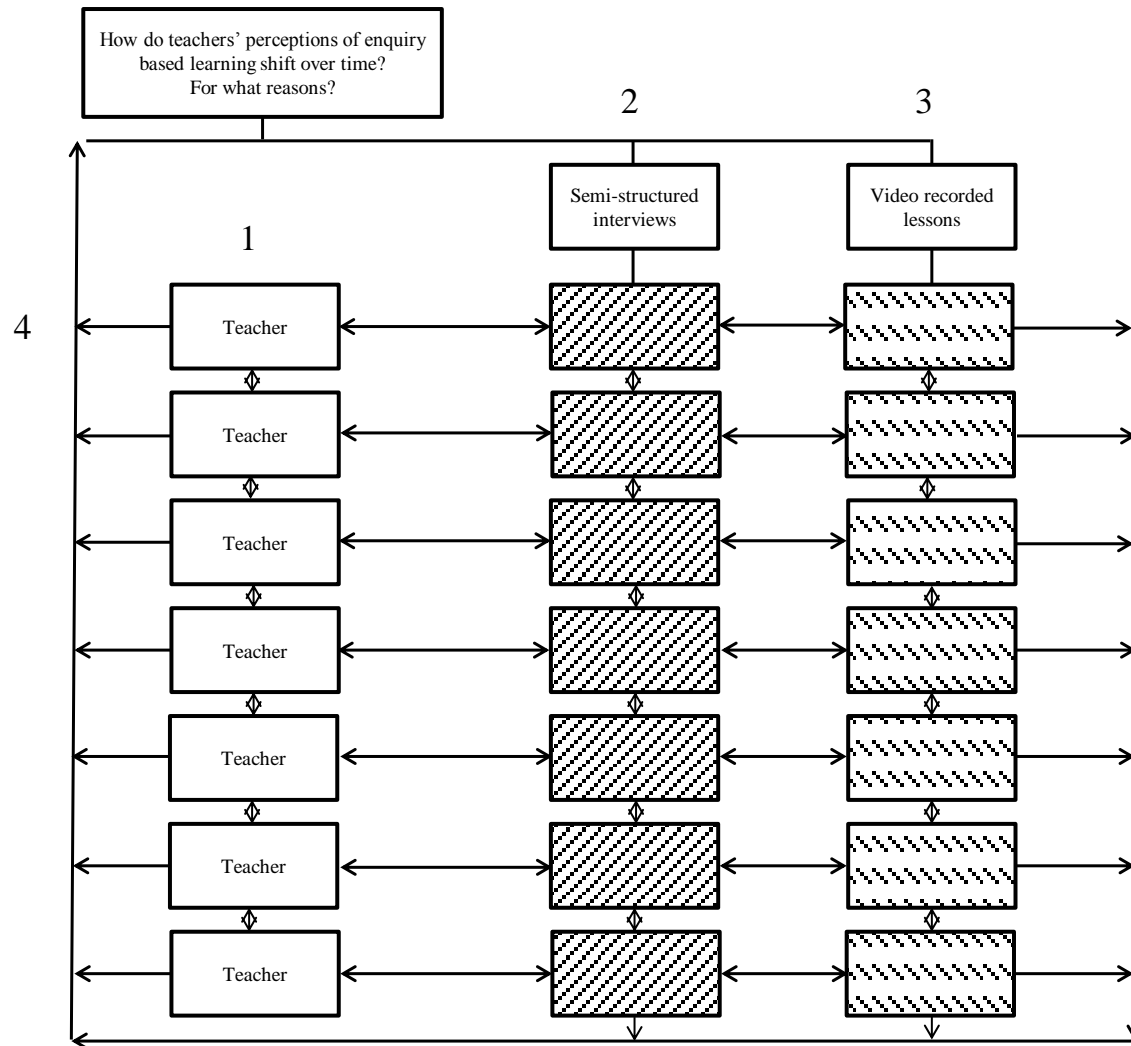
Schedule of semi-structured interviews

	Interview 1	Interview 2	Interview 3
Andrew			September 2011
Chloe			
Christopher			
Ethan	April 2008	March 2009	
Isobel			May 2011
Matthew			
Michael			

Schedule of video recordings

	Recording 1	Recording 2	Recording 3	Recording 4
Andrew	March 2008	July 2008	April 2009	October 2009
Chloe	March 2008	July 2008	January 2009	September 2009
Christopher	February 2008	December 2008	February 2009	None
Ethan	March 2008	November 2008	February 2009	None
Isobel	March 2008	July 2008	January 2009	September 2009
Matthew	February 2008	July 2008	July 2009	November 2009
Michael	February 2008	October 2008	September 2009	September 2009

Interview 1
Interviewer: Anna Reid

Question	Outline	Purpose
1	Tell me about your extended enquiry. Probe: Choice of year group and rationale Style of planning and rationale	Open question to begin with so the teacher has initial control
2	What were the activities the students had to do?	Insights into intended outcomes. Were there any? Did this influence the choice of structure of the enquiry? (closed, framed, negotiated) (Roberts, 2003, pp. 34-35)
3	If you were going to do the same kind of thing again with the same group, what would you do again, what would you change, what would need to be added?	Encourage reflection
4	Is this style of learning appropriate for all ability groups and all age groups?	Opinion on emerging viewpoint among some teachers that enquiry is more appropriate to some classes (and students) than others
5	Tell me how the assessment framework fits in to what you have done. Probe: Habits of Mind Toolkit for enquiry skills	Are teachers planning opportunities to develop the assessment framework into their enquiries?
6	Revisit the aims of the enquiry	The discussion may uncover aspects of enquiry which the teacher has not yet mentioned
7	The intention is to now include other curriculum areas in developing enquiry, what would be your message to other teachers? Probe: Levels of support	Sharing perceptions of enquiry in order to inform planning the next stage of the KTP project
8	Looking forward to next year, how do you envisage developing enquiry within your curriculum area? Probe: Level of support Role of the KTP Associate	Encourage thinking about the next stages of development. Inform levels and forms of required support

Interview 2
Interviewer: Research Associate from the northern UK university involved in the KTP project with Tableford School

Question	Outline	Purpose
1	How did you get involved in the KTP project and what has your involvement included Probe: When? How?	Warm up
2	In what ways have you and your teaching changed (if at all) as a result of your involvement? Probe: What has changed in the classroom / planning? Do you see yourself / your pupils / the job / the school differently? Do you think other people see you differently?	Gathering teachers' perceptions of change / the impact of the KTP project
3	What has supported that change? Probe: Particular resources (the toolkit – do not discuss unless it is mentioned by the interviewee) / reading / ideas / experiences / pupil response / the head / the group of teachers involved Probe: In what way has the support helped?	Unpicking reasons for change / specific aspects of the KTP project
4	Can you point to a critical incident or experience that stands out as pivotal in your experience of KTP? Probes: People who have visited the school, places that the pupils/staff have visited	Asking teachers to evaluate their experience and prioritise aspects which have had the greatest impact on their practice

Interview 3
Interviewer: Anna Reid

Question	Outline	Purpose
1	Describe a typical lesson in your curriculum area.	Setting the conversation up for reflection on what has changed (if anything)
2	So has the structure of your lesson/features of your lesson changed at all? Probe: Compared to during the KTP project Compared to before the KTP project	Attempting to evaluate changing practice
3	Do you still do enquiries?	Explore the extent to which enquiry based learning is a feature of the teacher's classroom practice
4	So what does enquiry mean to you?	What is the teacher's understanding of enquiry based learning? Has it developed since the KTP project?
5	Tell me about the toolkit for enquiry Probe: Reasons	How (if at all) is this being used?
6	Tell me about the 'Habits of Mind' Probe: Reasons	How (if at all) are they being used?
7	Has anything changed in terms of your practice from prior to the KTP project to now? Probe: Reasons	Encourage reflection Changes in teachers' own words
8	To what extent has our work during the KTP project been developed since it ended in December 2009? Probe: Reasons	Explore the importance of enquiry in relation to other whole school priorities

Interview 1

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Interview 2

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Interview 3

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18 because
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17 different
17 for
17 students
17 was
17 would
15 at
15 learning
15 not
15 there
14 kind
14 now
13 enquiry
13 from
13 really
13 want
12 if
12 much
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11 your
10 car
10 go
10 information
10 my
10 time
10 up

Interview 1
'I', 'they', 'we', them', 'their' 'students' connote dimensions of Christopher's 'dialogical self'.
'Enquiry' features prominently but so too does 'science'. Does this indicate different perceptions of approaches to pedagogy?
'Lessons', 'process', 'results' and 'schemes' serve to reinforce the concept of tension involving contrasting pedagogical approaches.
'Doing' and 'know' relate to the themes of knowledge creation and teacher agency. How does Christopher mediate his developing understanding of enquiry?

Interview 2
'I', 'them', 'they', 'staff' and 'their' maintain connotations of aspects of Christopher's 'dialogical self' but it has expanded to include other teachers in school.
'More' and 'enquiry' are a tantalising combination. Is their evidence of this in Christopher's interview?
'Anna' implies my involvement in the process of teachers' developing understanding, as the KTP Associate. Is this reflected in the interview?
'Teaching' and 'use' is another tempting combination for further exploration.

Interview 3
'I', 'they', 'them', you', 'their', 'your', 'my' and 'students' connote additional aspects of Christopher's 'dialogical self' which do not appear in his first two interviews.
'But', 'because' and 'problem' represent emerging tensions.
'with' implies a collaborative approach to developing enquiry.
'Learning', 'enquiry' and 'time' represent key concepts within this thesis. If my interpretation reflects the content of Christopher's interview, how does he cope?

'Internal' positions		**'External' positions**
I as a man	The strong part of my body	My husband/partner
I as a woman	The weak part of my body	My wife/partner
I as a father	I as deep-down inside	My father
I as a mother	I as presenting myself to the outside	My mother
I as a child of my parents	……. (added by the participant)	My father-in-law
I as husband	……. (added by the participant)	My mother-in-law
I as wife	……. (added by the psychologist)	My children
I as colleague	……. (added by the psychologist)	My brother
I as professional		My sister
I as member of a cultural community		My cousin
I as freedom seeker		My grandfather
I as victim		My grandmother
I as idealist		An acquaintance
I as independent		A fellow-student
I as clown		My teacher
I as mystic/spiritual		My colleague
I as warmth seeker		My subordinate
I as sacrificing		My employer
I as dependent		My friend
I as doer		My girl-friend
I as sexual		A figure in my dream
I as doubter		A TV personality
I as fighter		A character in a book
I as understanding		A figure in music
I as adventurer		Somebody who is dead
I as dominating		Somebody in my imagination
I as restless seeker		Somebody I admire
I as betrayer		Somebody I love
I as recognition seeker		A problematic person
I as avenger		My ex-partner
I as demanding		Somebody I play sports with
I as jealous		My adversary
I as perfectionist		My pet
I as understanding		A group in society to which I belong
I as guilty		A group to which I don't belong
I as optimist		A group to which I belonged in the past
I as vulnerable		Another cultural group
I as disillusioned		My therapist
My conscience		A supernatural being
I as enjoyer of life		My house
I as dreamer		Something in nature
My masculine side		……. (added by the participant)
My feminine side		……. (added by the participant)
The child in myself		……. (added by the psychologist)
I as pessimist		……. (added by the psychologist)
I as materialist		
I as stable		

'Internal' positions

1 I as a son/daughter
2 I as a man/woman
3 I as a parent
4 I as a teacher (general)
5 I as a teacher (subject)
6 I as a teacher (enquiry)
7 I as a Student Performance Leader
7 I as a Learning Area Leader
8 I as a colleague
9 I as certain
10 I as challenged
11 I as comfortable
12 I as constrained/controlled
13 I as creative
14 I as critical
15 I as disempowered
16 I as disengaged
17 I as disorganised
18 I as distracted
19 I as doer/user
20 I as doubter
21 I as empowered
22 I as energetic
23 I as engaged
24 I as failure
25 I as fearful
26 I as fearless
27 I as follower
28 I as free/in control
29 I as happy/enjoying
20 I as helpful/supportive
31 I as helpless/in need of support
32 I as in time
33 I as individual worker
34 I as involved
35 I as irresponsible
36 I as knowledgeable
37 I as lazy
38 I as leader
39 I as learner
40 I as listener
41 I as negative
42 I as not taking action
43 I as organised
44 I as out of time
45 I as positive
46 I as problem seeker

47 I as problem solver
48 I as relaxed
49 I as responsible
50 I as risk taker
51 I as successful
52 I as taking action
53 I as talker
54 I as team worker
55 I as thinker
56 I as uncertain
57 I as uncomfortable
58 I as under pressure
59 I as understanding
60 I as understood
61 I as unhappy/not enjoying
62 I as uninvolved
63 I as flexible
64 I as inflexible/fixed
65 I as lacking knowledge
66 I as observer
67 I as realist
68 I as idealist
69 I as curious/interested

'External' positions

0 Me/myself
1 My child/children
2 My husband/partner
3 My wife/partner
4 My mother/father
5 My teacher
6 My students in enquiry sessions
7 My students in non-enquiry sessions
8 My line manager
9 My Principal
10 My fellow enquiry teachers (group)
11 Daniel Williams
12 Matthew Brown
13 Mia Evans
14 Ethan Thomas
15 Elizabeth Davies
16 Christopher Lewis
17 Anthony Jones
18 Michael Wilson
19 Chloe Taylor/Isobel Smith
20 Andrew Walker
21 My fellow teachers
22 A fellow teacher
23 A problematic person/ people
24 My KTP Associate
25 My timetable
26 My classroom
27 My rules and routines
28 My personal prior experience
29 The toolkit for enquiry
30 The Habits of Mind
31 Enquiry/my enquiries
32 My other responsibilities
33 Other people/things
34 My curriculum area
35 Other curriculum areas
36 The KTP project
37 Whole school CPD
38 The assessment framework for enquiry skills
39 The residential weekend
40 My school

1	**Interview with Ethan Thomas at Tableford School on Wednesday the twenty-fifth of**
2	**May 2011. So, the same question that everybody else has had to start with, can you describe a**
3	**typical lesson that you would teach in Science?**

| 4 | |
| | Now? |

| 5 | **Yes, and then maybe talk about what it was like before.** |

| 6 | 43/34   5/27 |
| | Well we, in Science, we all use the five-stage Tableford learning cycle now. We are one of |

| 7 | |
| | the fore runners with that. So we come in and we say have 'Fascinate' which is like a starter |

| 8 | |
| | activity, something to try and get them into the lesson. I tend to use it quite a lot; You Tube |

| 9 | |
| | clips of pictures, connect the dots, that sort of thing, spot the difference, all that sort of |

| 10 | 38/7   53/7 |
| | malarkey to get them hooked in. We do that then talk through the objectives; what's the |

| 11 | |
| | point in doing it, why are we actually doing this lesson, what they could gain from it. We use |

| 12 | |
| | know, be able to, understand, create, but what changed the most is the be able to which |

| 13 | 13/27   19/30   55/28 |
| | skills they are going to gain so which of the Habits of Mind are they going to use whereas in |

| 14 | |
| | the past I would have put stuff like being able to explain something or being able to, now it's |

15	
	like being able to and then it's like persist, work interdependently; all that sort of malarkey.

16	13/27 53/7
	So that's a big change. We do that, we talk about why we're doing that, so we know what's

17	53/0 55/27
	important, why are we doing that. I always thought, 'Objectives, what's the point in them?'

18	13/0
	I was just like, 'Well, I've got to teach, what's the point?' Now I can see the kids need to

19	49/7
	know why they are doing it. They need to know what skills they are picking up so they can

20	
	use them in other lessons. Then we deal with new information but we do not, or we are not

21	13/27 66/22
	meant to, stand at the front and talk. There's no point. I watched an interview lesson and

22	14/22
	someone did that and I was like we, that's not what we do here anymore. That was nearly

23	27/7
	five years ago when I joined. So they'll find the information out. You know, they will

24	
	research through a number of resources. Occasionally you do have to tell them something.

25	
	You know, there is some fact that you have to get across but they have to find it out for

26	
	themselves then they'll take that and they'll do the main activity and they'll synthesise it,

27	
	bring it together or teach each other and we consolidate at the end with an extended

28	13/27 40/0
	plenary activity which isn't just, 'Right this is what we have done. These are the objectives.'

29	53/7
	It is based on what we have done but it is a lot more 'How have we used these skills? Why is

30	
	it important and what do you think?' Opinions, that sort of thing.

31	**So if that's how you teach now, and that's a change, where has that change come from?**

32	55/0 55/27
	Well I think it's a change but I think it's just a change in a way of thinking. I think a lot of the
33	
	activities that we do are quite similar to what we used to do. I think there is a lot less
34	
	teacher talking for the vast majority of lessons. There is a lot less standing at the front and
35	
	telling them information, copying it up and what have you

Interview 1

	Me/myself	My students in enquiry sessions	Michael Wilson	My timetable	My classroom	My rules and routines	My personal prior experience	The toolkit for enquiry	The Habits of Mind	Enquiry/my enquiries	Other people/things	My curriculum area	Other curriculum areas	The assessment framework for enquiry skills	Overall prominence
	0	6	18	25	26	27	28	29	30	31	33	34	35	38	
55 I as thinker	0	4	0	1	0	1	1	1	0	6	1	0	1	1	17
53 I as talker	1	9	0	0	0	0	0	0	0	0	0	0	0	0	10
14 I as critical	1	2	0	0	0	1	0	1	1	2	0	0	0	0	8
27 I as follower	0	8	0	0	0	0	0	0	0	0	0	0	0	0	8
40 I as listener	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
43 I as organised	0	0	0	0	0	0	0	1	0	6	0	0	0	0	7
5 I as a teacher (subject)	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5
10 I as challenged	0	3	0	1	0	0	0	1	0	0	0	0	0	0	5
13 I as creative	0	0	0	0	0	1	0	0	0	1	2	0	0	0	4
38 I as leader	0	0	0	0	0	0	0	1	0	3	0	0	0	0	4
6 I as a teacher (enquiry)	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
7 I as Learning Area Leader	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2
12 I as constrained/controlled	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
19 I as doer/user	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
28 I as free/in control	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2
45 I as positive	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2
51 I as successful	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2
54 I as team worker	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2
67 I as realist	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
32 I as in time	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
39 I as learner	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
49 I as responsible	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
56 I as uncertain	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
58 I as under pressure	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Overall prominence	2	42	1	3	1	3	1	8	2	29	1	3	1	1	

Interview 2

	Me/myself	My students in non-enquiry sessions	My Principal	My fellow teachers	My KTP Associate	My timetable	My rules and routines	The toolkit for enquiry	The Habits of Mind	Enquiry/my enquiries	My other responsibilities	Other people/things	My curriculum area	Other curriculum areas	The KTP project	My school	Overall prominence
	0	7	9	21	24	25	27	29	30	31	32	33	34	35	36	39	
55 I as thinker	0	1	0	1	0	1	2	1	0	3	0	1	0	0	0	0	10
45 I as positive	0	1	0	0	0	0	0	1	0	3	0	0	0	0	1	0	6
38 I as leader	0	0	0	1	0	0	0	0	0	0	0	1	2	0	1	1	6
13 I as creative	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	4
52 I as taking action	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	0	4
7 I as Learning Area Leader	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2
10 I as challenged	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	3
31 I as helpless/in need of support	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
67 I as realist	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	3
27 I as follower	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
34 I as involved	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
36 I as knowledgeable	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
40 I as listener	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
49 I as responsible	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
53 I as talker	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
59 I as understanding	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
12 I as constrained/controlled	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
14 I as critical	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
19 I as doer/user	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
43 I as organised	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
44 I as out of time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
51 I as successful	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
54 I as team worker	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
69 I as curious/interested	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Overall prominence	1	6	3	5	2	1	7	3	1	15	1	4	7	1	3	2	

Interview 3

	Me/myself	My students in non-enquiry sessions	My fellow enquiry teachers (group)	My fellow teachers	My classroom	My rules and routines	My personal prior experience	The toolkit for enquiry	The Habits of Mind	Enquiry/my enquiries	Other people/things	My curriculum area	The KTP project	My school	Overall prominence
	0	7	10	21	26	27	28	29	30	31	33	34	36	39	
13 I as creative	1	0	0	0	0	3	0	2	0	0	0	4	0	0	10
55 I as thinker	2	3	0	0	0	0	1	0	1	1	0	0	1	0	9
40 I as listener	0	4	0	2	0	0	0	0	0	2	0	0	0	0	8
27 I as follower	0	4	0	1	0	0	0	0	0	0	0	0	0	0	5
38 I as leader	0	0	0	0	1	0	0	0	0	0	0	3	0	1	5
49 I as responsible	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
45 I as positive	0	0	0	1	0	0	0	2	0	1	0	0	0	0	4
59 I as understanding	0	0	0	0	0	0	0	0	1	3	0	0	0	0	4
10 I as challenged	0	0	0	0	0	0	0	2	0	1	0	0	0	0	3
14 I as critical	1	1	0	0	0	0	0	1	0	0	0	0	0	0	3
66 I as observer	0	2	0	1	0	0	0	0	0	0	0	0	0	0	3
11 I as comfortable	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
19 I as doer/user	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
28 I as free/in control	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2
39 I as learner	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2
67 I as realist	0	1	0	0	0	0	0	0	0	0	1	0	0	0	2
6 I as a teacher (enquiry)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7 I as Learning Area Leader	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
21 I as empowered	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
34 I as involved	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
53 I as talker	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
54 I as team worker	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
65 I as lacking knowledge	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Overall prominence	5	23	1	5	1	4	1	7	5	11	1	9	2	1	

Matthew's 'internal' positions 'I as thinker' and 'I as talker' have the greatest prominence in his first interview. This is mostly in respect to the 'external' positions 'My students in enquiry sessions', and 'Enquiry/my enquiries'.

The 'internal' position 'I as thinker' also has greatest overall prominence in Matthew's second interview. However, this is in relation to a wider distribution of 'external' positions. The 'internal' position 'I as talker' has decreased in prominence. The most prominent 'external' positions are 'Enquiry/my enquiries', 'My rules and routines', 'My curriculum area' and 'My students in non-enquiry sessions'.

The 'internal' position 'I as creative' has greatest prominence in Matthew's final interview. It is followed by 'I as thinker' and 'I as listener'. The most prominent 'external' positions are 'My students in non-enquiry sessions', 'Enquiry/my enquiries' and 'My curriculum area'.

Recording 1 - March 2008 Duration: 49 minutes and 29 seconds Year 8 English

Time	Coding	Notes	T position
0 seconds	18	Students enter in silence and begin silent reading	F
30 seconds	7	Female student. Can't make out what is said	F
1 minute	18	Walking among rows of students as they read in silence	A
1 min 30	18	Walking among rows of students as they read in silence	A
2 mins	18		F
2 mins 30	25	Completes writing 'Facts about Mr Clark' on the board	F
3 mins	18	Walks to the front of the room	A
3 mins 30	25	Teacher distributes pens to those who do not have one	A
4 mins	18	Waiting for students to settle	F
4 mins 30	3	Big question: Would we like to have Mr Clark as out dad?	F
5 mins	25	Teacher is not in shot. Students complete writing the date and title in their books	X
5 mins 30	25	Teacher is not in shot. Students write facts about Mr Clark in their book	X
6 mins	25	Teacher is not in shot. Students write facts about Mr Clark in their book	X
6 mins 30	25	Teacher is not in shot. Students write facts about Mr Clark in their book	X
7 mins	9	Right. The minute's up. Finish what you are writing and put your pens down'	F
7mins 30	13	Female student replies to teacher's question about what they are going to do at the end of the lesson	F
8 mins	9	Teacher explains next task in pairs: 'And you might get a bit of a debate going'	F
8 mins 30	9	Then what you are going to do is, you are going to pick what you think are the top 3 facts about Mr Cla	F
9 mins	9	And pick three that make you think, do you know what it is…' Link to the key question	F
9 mins 30	9	I'm going to give you four minutes to do that. Off you go'	F
10 mins	10	Let's have a look… at the evidence'	BS
10 mins 30	4	Teacher not in shot. Can be heard responding to a student's question	X
11 mins	4	Teacher not in shot. Can be heard responding to a student's question	X
11 mins 30	7	Jo, can you work with the person that you're supposed to please'	X
12 mins	22	Teacher is not in shot. Noise level has risen as students discuss the task	X
12 mins 30	25	Teacher is not in shot. Returned to the room after speaking to a student in the corridor	X
13 mins	10	Teacher is not in shot. Can be heard talking to a student	X
13 mins 30	9	I'm just going to wait until everyone has stopped talking'	F
14 mins	9	You need to find some evidence from the novel proving your top three facts'	F
14 mins 30	10	And I said to Kyle…'	F
15 mins	4	Yes, Alex?'	A
15 mins 30	13	Listening to a question from a female student	A
16 mins	18		B
16 mins 30	4	Directing a student towards spare copies of the text	A
17 mins	9	Right, so if you stop your discussions now, there should be no sound other than my voice'	F
17 mins 30	18	Waiting for silence	F
18 mins	7	Can't make out what is said	F
18 mins 30	9	If in the bit that we're going to read, you find out something else about Mr Clark…'	F
19 mins	7	If you two can share a book…'	F
19 mins 30	7	Teacher gives out spare copies of the text: 'There might be some pages missing in these'	F
20 mins	1	What book have you got, pet?' Helping students find the correct page. Two copies of the book in use	F
20 mins 30	3	Can someone put their hand up and tell me which punctuation mark you are looking for?'	F
21 mins	3	There is one other punctuation mark'	F
21 mins 30	25	Teacher waits for silence: 'Don't talk when I'm talking'	F
22 mins	9	Teacher explains the 'route' for reading out loud	F
22 mins 30	13	Male student reading out loud	F
23 mins	13	Next student reading out loud	A
23 mins 30	13	Next student reading out loud	B
24 mins	13	Next student reading out loud	B
24 mins 30	13	Next student reading out loud	B
25 mins	13	Next student reading out loud	B
25 mins 30	13	Next student reading out loud	B
26 mins	13	Next student reading out loud	F
26 mins 30	13	Next student reading out loud	F
27 mins	13	Next student reading out loud	F
27 mins 30	13	Next student reading out loud	F
28 mins	13	Next student reading out loud	F
28 mins 30	13	Next student reading out loud	A
29 mins	13	Next student reading out loud	A
29 mins 30	13	Next student reading out loud	F
30 mins	13	Next student reading out loud	F
30 mins 30	13	Next student reading out loud	F
31 mins	13	Next student reading out loud	F
31 mins 30	18	Waiting for students to put books down	F
32 mins	9	This is how you are going to make your decision. You are going to make it on your own first'	F
32 mins 30	9	So you are working on your own first of all: Would I like to have Mr Clark as my dad? Yes or no'	F
33 mins	22	Teacher not in shot. Silence as student complete written task in their books	X
33 mins 30	22	Teacher not in shot. Silence as student complete written task in their books	X
34 mins	22	Teacher not in shot. Silence as student complete written task in their books	X
34 mins 30	22	Teacher not in shot. Silence as student complete written task in their books	X
35 mins	22	Teacher not in shot. Silence as student complete written task in their books	X
35 mins 30	9	Look at everyone in the pair for everyone in the group's explanations'	F
36 mins	22	Noise level rises as students share their responses to the written task	A
36 mins 30	1	Teacher can be heard questioning an individual student	BS
37 mins	13	Listening to a response to a question she has asked	BS
37 mins 30	25	Teacher is not In shot. Focus is on a group of students discussing their answers	X
38 mins	18	Waiting for silence. Teacher has just asked the class to stop talking and look this way	F
38 mins 30	3	Has anyone changed their minds?	F
39 mins	9	But as well as being a good way of reviewing what we already know about Mr Clark…' Importance of	F
39 mins 30	1	Invites a males student to speak	F
40 mins	13	Male student	F
40 mins 30	13	Listens to an extended answer from the same student after prompting	F
41 mins	1	Do you think a Dad's job is to…?'	F
41mins 30	13	One student answers another student's question	F
42 mins	9	Teacher explains a section of the text to reinforce the student's answer	F
42 mins 30	13	Another male student	F
43 mins	7	Repeats and paraphrases a student answer	F
43 mins 30	13	Female student	F
44 mins	1	Further question to extend the response of the female student	F
44 mins 30	1	Teacher invites another male student to share his opinion	F
45 mins	1	Further question to extend the response of the male student	F
45mins 30	1	Teacher invites a female student to give her response	F
46 mins	10	Paraphrases another female student's response	F
46mins 30	1	Further question to extend the response of this student	F
47 mins	10	Right, so…' Response to student comment	F
47 mins 30	25	Teacher asks KTP Associate's opinion	F
48 mins	13	Another student offers a further opinion	F
48 mins 30	9	Right, well done, folks. Can you just stop and listen a sec before we pack up'	F
49 mins	9	Summarises skills used: speaking and listening. End of recording	F
49 mins 30			
50 mins			
50 mins 30			
51 mins			
51 mins 30			
52 mins			
52 mins 30			
53 mins			
53 mins 30			
54 mins			
54 mins 30			
55 mins			
55 mins 30			
56 mins			
56 mins 30			
57 mins			
57 mins 30			
58 mins			
58 mins 30			
59 mins			
59 mins 30			
60 mins			

Recording 2 - July 2008 Duration: 54 minutes and 07 seconds Year 7 enquir

Time	Coding	Notes	T position
0 seconds	9	CT: 'This is something totally different for all you lot this afternoon'	F
30 seconds	9	CT: 'So if you are talking and we want you to be quiet because we want to give you some more informa	F
1 minute	18	Students watching a video on the enquiry	F
1 min 30	18	Students watching a video on the enquiry	F
2 mins	18	Students watching a video on the enquiry	F
2 mins 30	9	AW: 'Quietly in groups of three, find yourselves a table with your name on'	F
3 mins	3	AW: 'So where will the girls go first?' Modelling the treasure hunt task	F
3 mins 30	2	IS: 'Have you got your first one, girls?' During the treasure hunt	X
4 mins	25	Students running to get clues for the treasure hunt. Directing each other	X
4 mins 30	25	Students running to get clues for the treasure hunt. Directing each other	X
5 mins	8	IS: 'Lads, don't jump over the wires, go round the edge'. Outside during treasure hunt	X
5 mins 30	25	Students running to get clues for the treasure hunt. Directing each other	X
6 mins	4	IS: 'Next to the music block. Yes.'	X
6 mins 30	4	IS: ' Give us a wave' (Sixth Form student)	X
7 mins	9	CT: 'Stop! 3, 2, 1'. Instructions to make the picture from treasure hunt pieces	B
7mins 30	17	Students using glue to stick jigsaw pieces	A
8 mins	17	Students using glue to stick jigsaw pieces	A
8 mins 30	25	Out of shot. Unable to see what is happening	X
9 mins	25	Out of shot. Unable to see what is happening	X
9 mins 30	25	Out of shot. Unable to see what is happening	X
10 mins	25	Out of shot. Unable to see what is happening	X
10 mins 30	25	Out of shot. Unable to see what is happening	X
11 mins	17	Students using glue to stick jigsaw pieces	A
11 mins 30	17	IS and AW watching first group of students back from the treasure hunt	F
12 mins	3	IS holding up picture of glued picture parts: 'Shocked, scared, happy?'	F
12 mins 30	9	IS instructions: 'I would like you to draw what you think has made us react like this'	F
13 mins	9	IS: 'I can hear people talking when they shouldn't be'	F
13 mins 30	4	IS: 'That's what they think is in the box. What we want you to do…'	F
14 mins	18	Students watching input video	F
14 mins 30	18	Students watching input video	F
15 mins	18	Students watching input video	F
15 mins 30	22	Students working as individuals to create a collage of what is in the box	A
16 mins	18	Students working as individuals to create a collage of what is in the box	A
16 mins 30	24	Student 1 explaining what he has created	A
17 mins	24	Student 2 explaining what he thinks is in the box	A
17 mins 30	24	Student 1 gives another suggestion with a reason	A
18 mins	24	Student 3 gives her ideas on what is in the box	A
18 mins 30	24	Student 3 gives further ideas and justification	A
19 mins	7	Sixth form student makes a positive summary to camera	A
19 mins 30	1	Sixth form student: 'Why do you think it is a roller coaster?'	A
20 mins	7	Sixth form student summarises student comment and compares it to the box	A
20 mins 30	25	Student thinking following questions from Sixth form student; 'What would make you squint?' and 'Wh	A
21 mins	1	Sixth form student: 'Jessie, what do you think is in the box?'	A
21 mins 30	24	Student 4 thinks about Sixth form student question: 'Why do you think it's nothing?' and responds, 'I've	A
22 mins	24	Student 5: 'Simon Cowell with his pants all the way up'	A
22 mins 30	2	Sixth form student: 'And what do yous think is in the box?'	A
23 mins	1	Sixth form student asks another student: 'And what about you?'	A
23 mins 30	7	Sixth form student summarises: 'Kittens and divvent nas'	A
24 mins	1	Sixth form student to another student: 'What about you, what do you think it is?'	A
24 mins 30	25	Shot of one student's collage of a duck	A
25 mins	25	Sixth form students move to another table	A
25 mins 30	1	Sixth form student: 'So what do you think is in the box?' Student 6 response: 'That'	A
26 mins	24	Student 7 thinks about the question' So what do you think is in the box?' and then responds, 'Anything'	A
26 mins 30	1	Sixth form student: 'What about you? What are you making?'	A
27 mins	24	Two female students respond to question from Sixth former: 'Nowt' and 'a bin bag'	A
27 mins 30	24	One of the two female students: 'I've just lost the flipping glue'	A
28 mins	7	Sixth former summaries student comments in a short piece to camera	B
28 mins 30	24	Sixth formers return to a missed group. Student 8 shows signs of reasoning: 'It could be faking it'	A
29 mins	1	Sixth form student asks another student: 'So what do you think's in?'	A
29 mins 30	7	Sixth former to a peer: 'I think that's all we're going to get out of these'	A
30 mins	1	Sixth former asks another student: 'So what about you? What are you doing?'	A
30 mins 30	1	IS: 'Mr Close-Ash in the box?' Student: 'Yeah' and underlines teacher's first name	A
31 mins	25	AW sitting with a group and he is writing bullet points. Group watching	A
31 mins 30	1	IS: 'Is that yours there? Let's have a look'. Considers student's work and then and enthusiastic 'ohh. G	A
32 mins	18	IS holding the video camera and spans so that she can observe the whole room	B
32 mins 30	2	Sixth former encouraging a table of boys to justify their 'answers'	A
33 mins	9	AW: 'OK guys, so we are going to give you five minutes to consolidate your ideas, put them together a	F
33 mins 30	9	AW: ' The one that's going to look in the box is the one with the best idea' (prompting about justificatio	F
34 mins	18	Students working together to justify their answers. Noisy	A
34 mins 30	24	Student gives an extended answer to teacher's question: 'So what are we going with here?'	A
35 mins	7	IS reminds group of boys of what they have to d, asks, 'Have you got that drawn somewhere?' and prais	A
35 mins 30	1	IS: ' Why do you think that, then?'	A
36 mins	7	Female student gives her answer and IS asks why	A
36 mins 30	17	IS observes one student's drawing and considers it before asking the question, 'Why do you think we wo	A
37 mins	25	Room not in shot	X
37 mins 30	24	Two female students present their collage and three justifications to camera	A
38 mins	9	CT: ' I'm just going to wait for a couple of people to be quiet' and then introduces the next phase	F
38 mins 30	24	Group of boys begin their presentation in the box and why	A
39 mins	1	CT: 'Say that again really loudly' to another student in the group after prompting the presenter	F
39 mins 30	24	One student from a second group begins his presentation	A
40 mins	24	Presenting student continues his justification	A
40 mins 30	24	One female student from a third group begins her presentation	A
41 mins	7	IS: ' So did you think that …?'	A
41mins 30	24	One student from a fourth groups begins her presentation	A
42 mins	24	Student responds to prompting from AW	A
42 mins 30	24	One female student from a fifth group begins her presentation	A
43 mins	7	AW makes a positive comment. AW agrees	F
43 mins 30	24	Male student from a sixth group some way through his presentation	A
44 mins	8	CT: 'Lads at the back, that table there'	F
44 mins 30	7	AW comments on responses from one male student from a seventh group	F
45 mins	1	CT: 'Did you focus on the light, and stuff like that?' to a female student from an eighth group	F
45mins 30	24	One male student from group nine: 'They pinched our idea'	A
46 mins	24	Another male student from group nine concludes his presentation	F
46mins 30	24	Female student from group ten begins her presentation	F
47 mins	9	IS presents on behalf of this group (a little shy)	F
47 mins 30	10	AW responds positively to IS's presentation	F
48 mins	25	Teachers making comments to each other to excite the group about what they are going to do next	F
48 mins 30	22	Negotiating with the group what to do next (humorous). Begin evaluation	F
49 mins	25	Teachers keeping the students interest up about the box while they complete the evaluations	A
49 mins 30	9	IS: 'before, we said we were looking for the group which had the best idea'	F
50 mins	22	Winning group of boys come to the front of the room. Other students clap	F
50 mins 30	25	Boys open the box and share contents with the whole class. Silent	F
51 mins	24	One male student from the winning group tells the rest of the class about the reward - sweets for every	F
51 mins 30	25	VG and CT knocking on the box	F
52 mins	25	Miss Reid, did you know that there's three £10 gift vouchers for Eldon Square in here as well?'	F
52 mins 30	25	Students giving out sweets, clapping, collecting gift vouchers. Teachers smiling. Noisy	F
53 mins	25	Students giving out sweets, clapping, collecting gift vouchers. Teachers smiling. Noisy	F
53 mins 30	25	Students giving out sweets, clapping, collecting gift vouchers. Teachers smiling. Noisy	F
54 mins	25	Sixth form student asks for a round of applause from the students for the teachers. End of recording	F
54 mins 30			
55 mins			
55 mins 30			
56 mins			
56 mins 30			
57 mins			
57 mins 30			
58 mins			
58 mins 30			
59 mins			
59 mins 30			
60 mins			

	Interview 1	Interview 2	Interview 3
1 I as a son	1	0	0
4 I as a teacher (general)	2	2	0
5 I as a subject teacher	6	0	1
6 I as enquiry teacher	13	1	4
7 I as Student Performance Leader	2	0	0
9 I as certain	1	1	0
10 I as challenged	7	1	5
11 I as comfortable	1	0	1
12 I as constrained/controlled	9	8	5
13 I as creative	16	3	22
14 I as critical	6	1	14
15 I as disempowered	3	0	0
16 I as disengaged	1	0	0
17 I as disorgansied	2	1	1
18 I as distracted	2	0	1
19 I as doer/user	1	0	10
20 I as doubter	3	0	1
21 I as empowered	1	0	0
22 I as energetic	1	0	0
23 I as engaged	0	0	1
24 I as failure	4	1	1
25 I as fearful	5	2	0
26 I as fearless	0	0	1
27 I as follower	9	1	3
28 I as free/in control	9	1	20
29 I as happy/enjoying	4	1	3
30 I as helpful/supportive	6	1	7
31 I as helpless/in need of help	0	1	2
32 I as in time	1	0	0
34 I as involved	4	3	2
35 I as irresponsible	0	0	0
36 I as knowledgeable	14	3	9
37 I as lazy	1	0	0
38 I as leader	3	0	2
39 I as learner	6	0	0
40 I as listener	10	0	18
41 I as negative	9	0	5
42 I as not taking action	1	0	5
43 I as organised	4	0	9
44 I as out of time	7	2	1
45 I as positive	19	2	17
46 I as problem seeker	1	0	0
47 I as problem solver	8	0	0
48 I as relaxed	2	0	0
49 I as responsible	5	2	1
50 I as risk taker/experimenter	7	2	2
51 I as successful	5	0	1
52 I as taking action	2	0	6
53 I as talker	5	3	18
54 I as teamworker	4	0	10
55 I as thinker	19	3	27
56 I as uncertain	2	0	4
57 I as uncomfortable	1	0	1
58 I as under pressure	1	0	0
59 I as understanding	0	0	3
60 I as understood	0	0	0
61 I as unhappy/not enjoying	2	0	1
62 I as uninvolved	5	0	3
63 I as flexible	3	2	3
65 I as lacking knowledge	2	0	1
66 I as observer	4	1	6
67 I as realist	2	0	0
Prominence	**274**	**49**	**258**

'Internal' positions
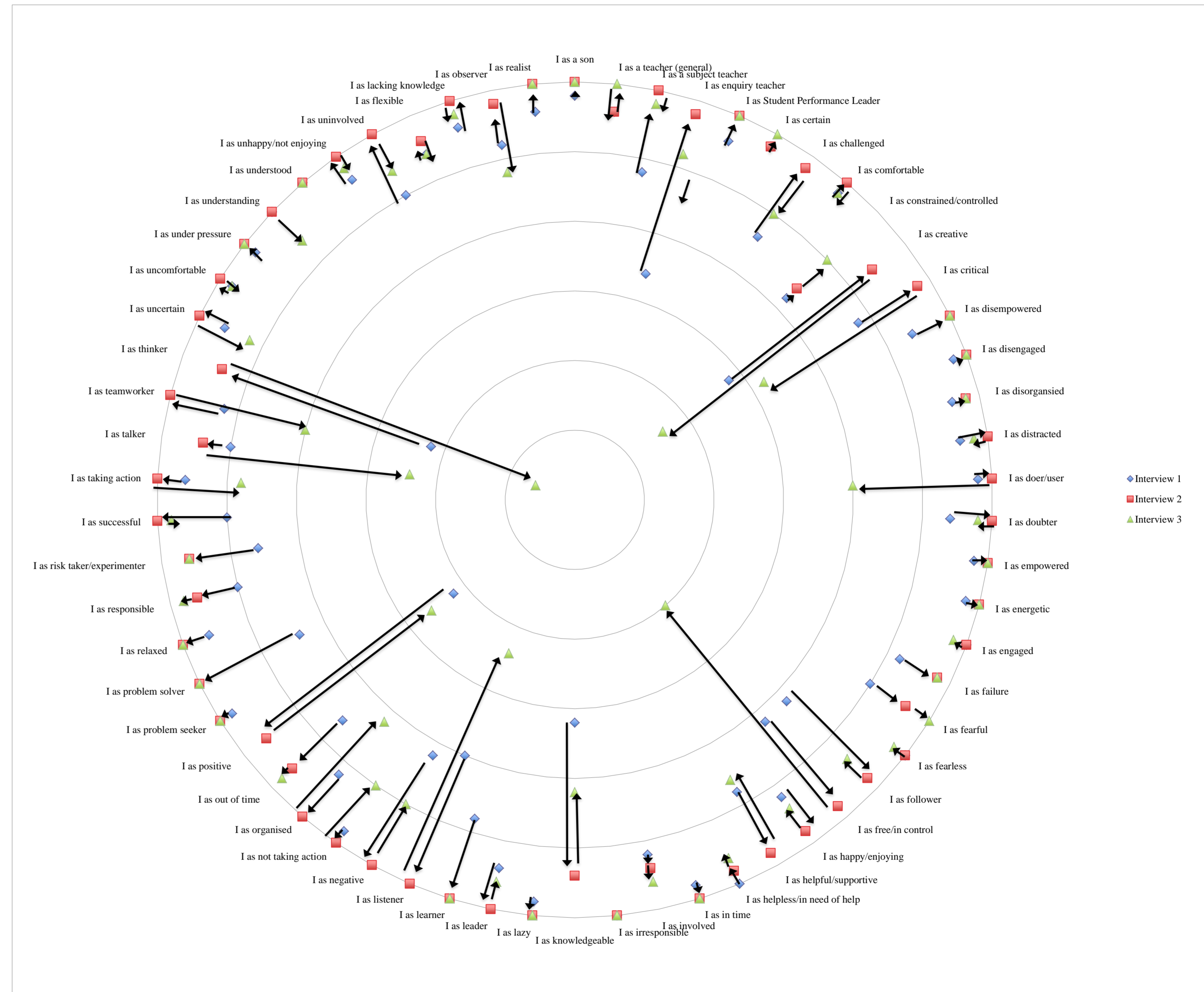
		Interview 1	Interview 2	Interview 3
3	I as a parent	0	0	1
4	I as a teacher (general)	0	1	0
5	I as a subject teacher	0	0	3
6	I as enquiry teacher	1	1	0
10	I as challenged	4	1	6
12	I as constrained/controlled	1	0	4
13	I as creative	10	9	10
14	I as critical	1	4	14
19	I as doer/user	0	2	5
25	I as fearful	0	0	2
26	I as fearless	0	2	0
27	I as follower	1	5	11
28	I as free/in control	2	1	5
29	I as happy/enjoying	0	1	0
30	I as helpful/supportive	0	0	8
31	I as helpless/in need of help	0	4	2
32	I as in time	0	2	1
34	I as involved	0	3	0
35	I as irresponsible	0	0	1
36	I as knowledgeable	3	1	4
38	I as leader	0	1	3
40	I as listener	3	8	5
41	I as negative	1	0	7
42	I as not taking action	1	0	5
43	I as organised	0	0	7
44	I as out of time	2	1	2
45	I as positive	13	13	11
49	I as responsible	0	0	1
50	I as risk taker/experimenter	0	1	0
52	I as taking action	0	2	1
53	I as talker	3	2	13
54	I as teamworker	2	4	7
55	I as thinker	15	10	32
56	I as uncertain	0	1	0
57	I as uncomfortable	0	1	0
58	I as under pressure	0	0	0
59	I as understanding	0	1	2
63	I as flexible	0	2	4
65	I as lacking knowledge	0	0	2
66	I as observer	0	1	2
67	I as realist	3	1	2
68	I as idealist	1	0	1
69	I as curious/interested	0	2	0
	Prominence	**67**	**88**	**184**

'Internal' positions
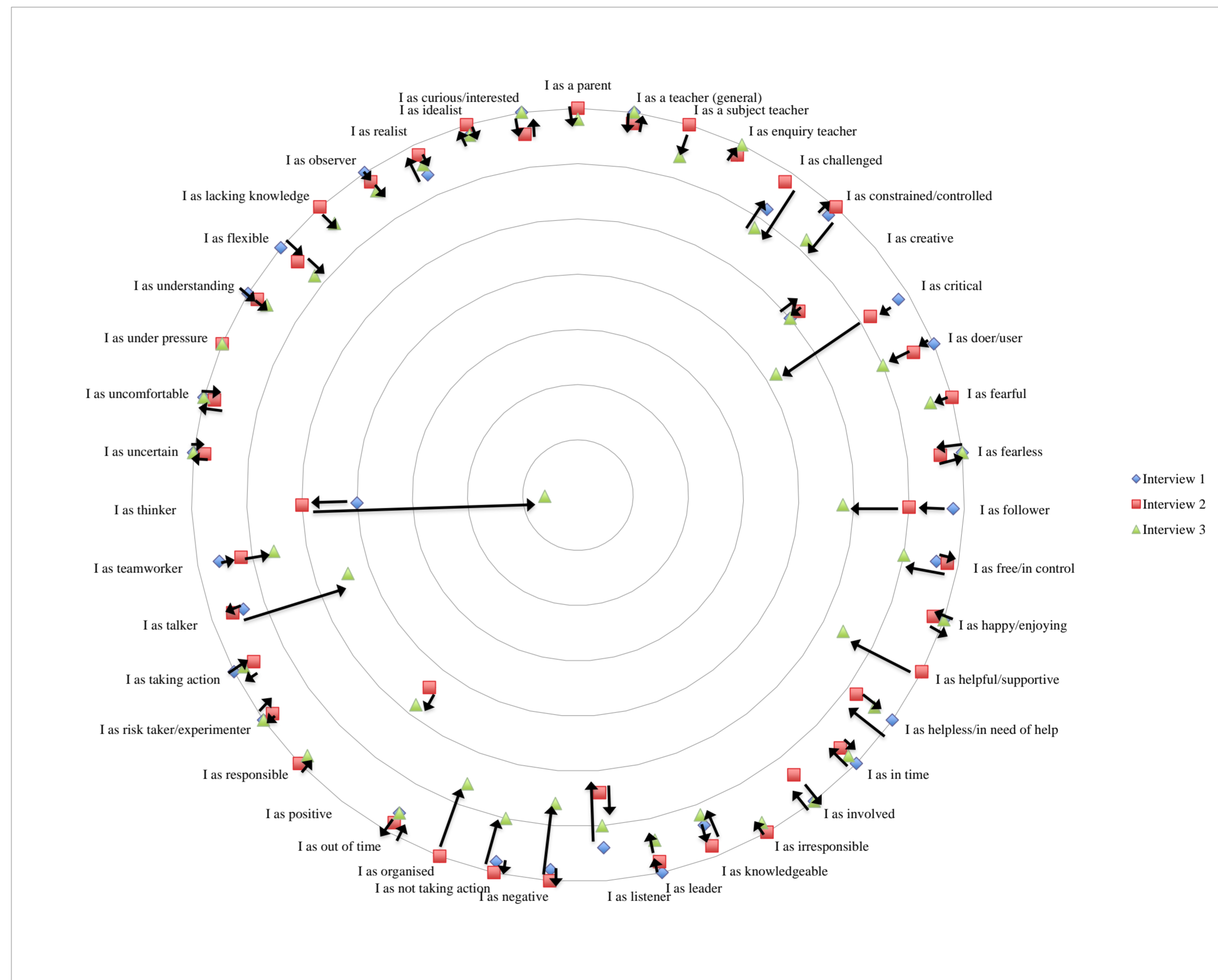
	Interview 1	Interview 2	Interview 3
4 I as a teacher (general)	0	2	3
5 I as a subject teacher	0	1	0
6 I as enquiry teacher	2	0	5
10 I as challenged	2	0	1
11 I as comfortable	0	1	0
12 I as constrained/controlled	2	1	0
13 I as creative	11	6	12
14 I as critical	5	1	0
19 I as doer/user	0	2	0
26 I as fearless	1	1	0
27 I as follower	16	6	4
28 I as free/in control	2	0	6
30 I as helpful/supportive	1	0	5
31 I as helpless/in need of help	0	4	0
32 I as in time	1	0	1
33 I as individual worker	0	1	0
34 I as involved	1	2	0
36 I as knowledgeable	5	5	8
38 I as leader	12	1	4
39 I as learner	1	0	0
40 I as listener	2	4	0
42 I as not taking action	0	1	0
43 I as organised	4	1	4
44 I as out of time	4	0	3
45 I as positive	8	5	2
49 I as responsible	2	0	0
50 I as risk taker/experimenter	6	1	1
52 I as taking action	2	4	1
53 I as talker	2	0	7
54 I as teamworker	5	4	1
55 I as thinker	12	2	13
56 I as uncertain	0	1	0
61 I as unhappy/not enjoying	1	0	0
62 I as uninvolved	0	2	0
63 I as flexible	0	0	4
65 I as lacking knowledge	0	0	1
66 I as observer	1	1	2
Prominence	**111**	**60**	**88**

'Internal' positions
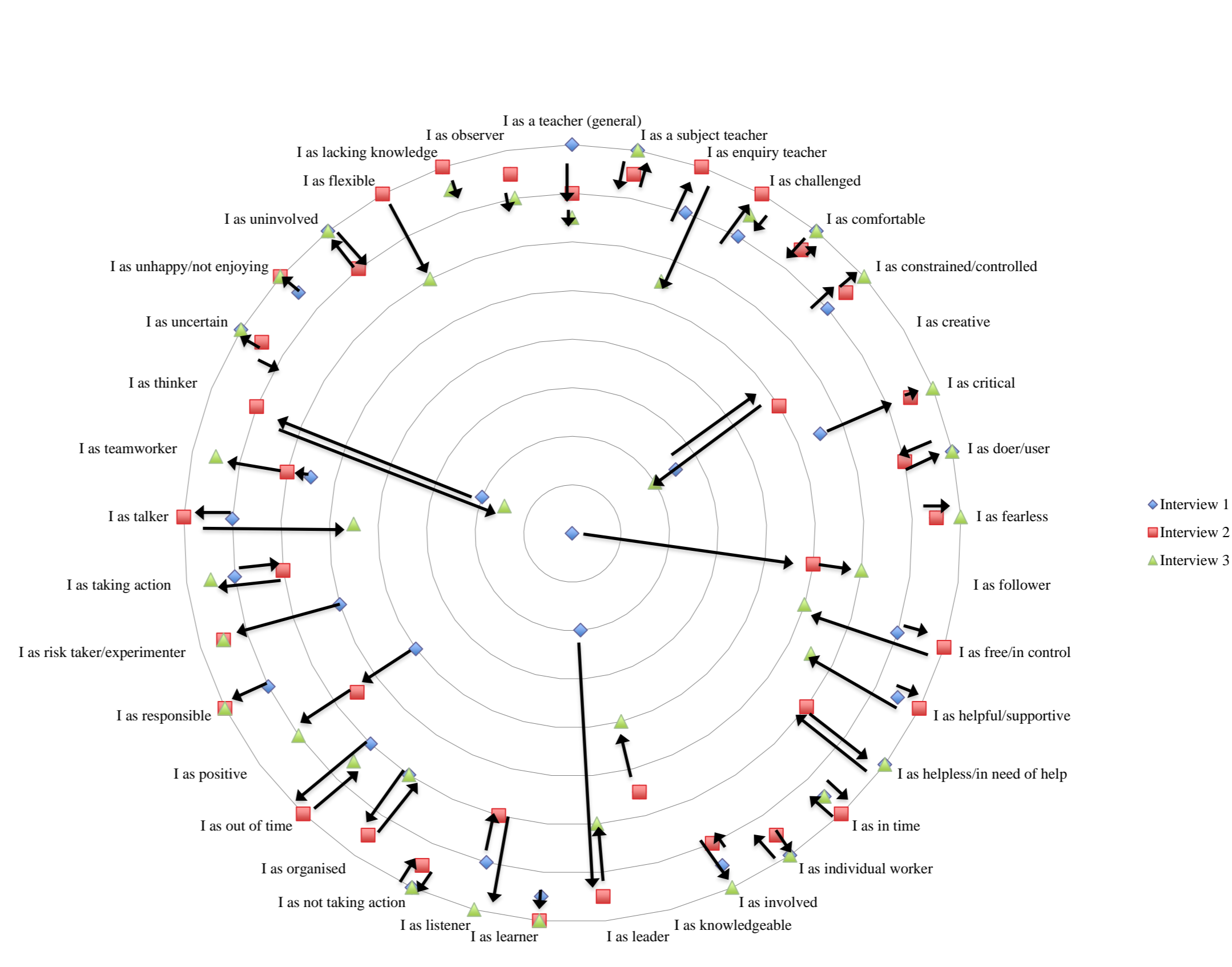
	Interview 1	Interview 2	Interview 3
5 I as a subject teacher	2	0	2
6 I as enquiry teacher	3	1	2
9 I as certain	1	1	2
10 I as challenged	6	5	7
11 I as comfortable	0	0	1
12 I as constrained/controlled	9	1	0
13 I as creative	12	7	20
14 I as critical	38	7	12
16 I as disengaged	1	0	1
19 I as doer/user	8	3	7
20 I as doubter	0	0	1
24 I as failure	0	1	0
25 I as fearful	1	0	0
26 I as fearless	3	0	0
27 I as follower	11	3	7
28 I as free/in control	5	0	8
29 I as happy/enjoying	0	3	3
30 I as helpful/supportive	0	0	3
31 I as helpless/in need of help	0	2	7
32 I as in time	1	0	1
33 I as individual worker	1	0	0
34 I as involved	2	2	0
36 I as knowledgeable	10	2	1
37 I as lazy	0	1	0
38 I as leader	6	7	13
39 I as learner	1	0	2
40 I as listener	19	8	33
41 I as negative	1	3	1
43 I as organised	12	0	4
44 I as out of time	1	0	0
45 I as positive	7	10	13
46 I as problem seeker	0	0	1
47 I as problem solver	0	0	1
49 I as responsible	2	4	8
50 I as risk taker/experimenter	0	1	0
51 I as successful	1	1	5
53 I as talker	27	10	33
54 I as teamworker	3	0	3
55 I as thinker	39	28	51
56 I as uncertain	3	0	0
59 I as understanding	6	1	5
61 I as unhappy/not enjoying	5	3	2
62 I as uninvolved	1	1	0
63 I as flexible	1	0	0
65 I as lacking knowledge	0	0	5
66 I as observer	1	0	2
67 I as realist	5	3	4
68 I as idealist	0	0	1
69 I as interested/curious	0	5	1
Prominence	**255**	**124**	**273**

'Internal' positions

Internal' positions

	Interview 1	Interview 2	Interview 3
4 I as a teacher (general)	0	2	0
6 I as enquiry teacher	1	1	0
10 I as challenged	6	2	7
11 I as comfortable	0	1	5
12 I as constrained/controlled	4	0	12
13 I as creative	13	1	6
14 I as critical	10	2	4
19 I as doer/user	1	1	3
24 I as failure	2	0	0
25 I as fearful	1	0	2
27 I as follower	3	3	10
28 I as free/in control	1	0	2
29 I as happy/enjoying	7	0	0
30 I as helpful/supportive	0	0	1
31 I as helpless/in need of help	2	4	1
32 I as in time	1	0	0
34 I as involved	0	3	0
36 I as knowledgeable	2	0	0
38 I as leader	2	2	2
40 I as listener	9	3	14
41 I as negative	1	0	0
42 I as not taking action	0	0	5
43 I as organised	2	0	2
44 I as out of time	3	2	1
45 I as positive	20	7	3
49 I as responsible	0	1	1
50 I as risk taker/experimenter	0	0	2
51 I as successful	0	2	1
52 I as taking action	7	3	7
53 I as talker	5	1	4
54 I as teamworker	5	1	5
55 I as thinker	31	6	26
57 I as uncomfortable	0	1	1
58 I as under pressure	0	0	2
59 I as understanding	0	0	5
62 I as uninvolved	1	0	0
63 I as flexible	0	1	3
65 I as lacking knowledge	0	0	1
66 I as observer	0	0	4
67 I as realist	3	0	7
68 I as idealist	0	0	1
69 I as interested/curious	2	0	1
Prominence	**145**	**50**	**151**

	Interview 1	Interview 2	Interview 3
5 I as a subject teacher	5	0	0
6 I as enquiry teacher	2	0	1
7 I as Learning Area Leader	2	3	1
10 I as challenged	5	3	3
11 I as comfortable	0	0	2
12 I as constrained/controlled	2	1	0
13 I as creative	4	4	10
14 I as critical	8	1	3
19 I as doer/user	2	1	2
21 I as empowered	0	0	1
27 I as follower	8	2	5
28 I as free/in control	2	0	2
31 I as helpless/in need of help	0	3	0
32 I as in time	1	0	0
34 I as involved	0	2	1
36 I as knowledgeable	0	2	0
38 I as leader	4	6	5
39 I as learner	1	0	2
40 I as listener	7	2	9
43 I as organised	7	1	0
44 I as out of time	0	1	0
45 I as positive	2	7	4
49 I as responsible	1	2	5
51 I as successful	2	1	0
52 I as taking action	0	4	0
53 I as talker	10	2	1
54 I as teamworker	2	1	1
55 I as thinker	17	10	9
56 I as uncertain	1	0	0
58 I as under pressure	1	0	0
59 I as understanding	0	2	4
65 I as lacking knowledge	0	0	1
66 I as observer	0	0	3
67 I as realist	2	3	2
69 I as interested/curious	0	1	0
Prominence	**98**	**65**	**77**

'Internal' positions
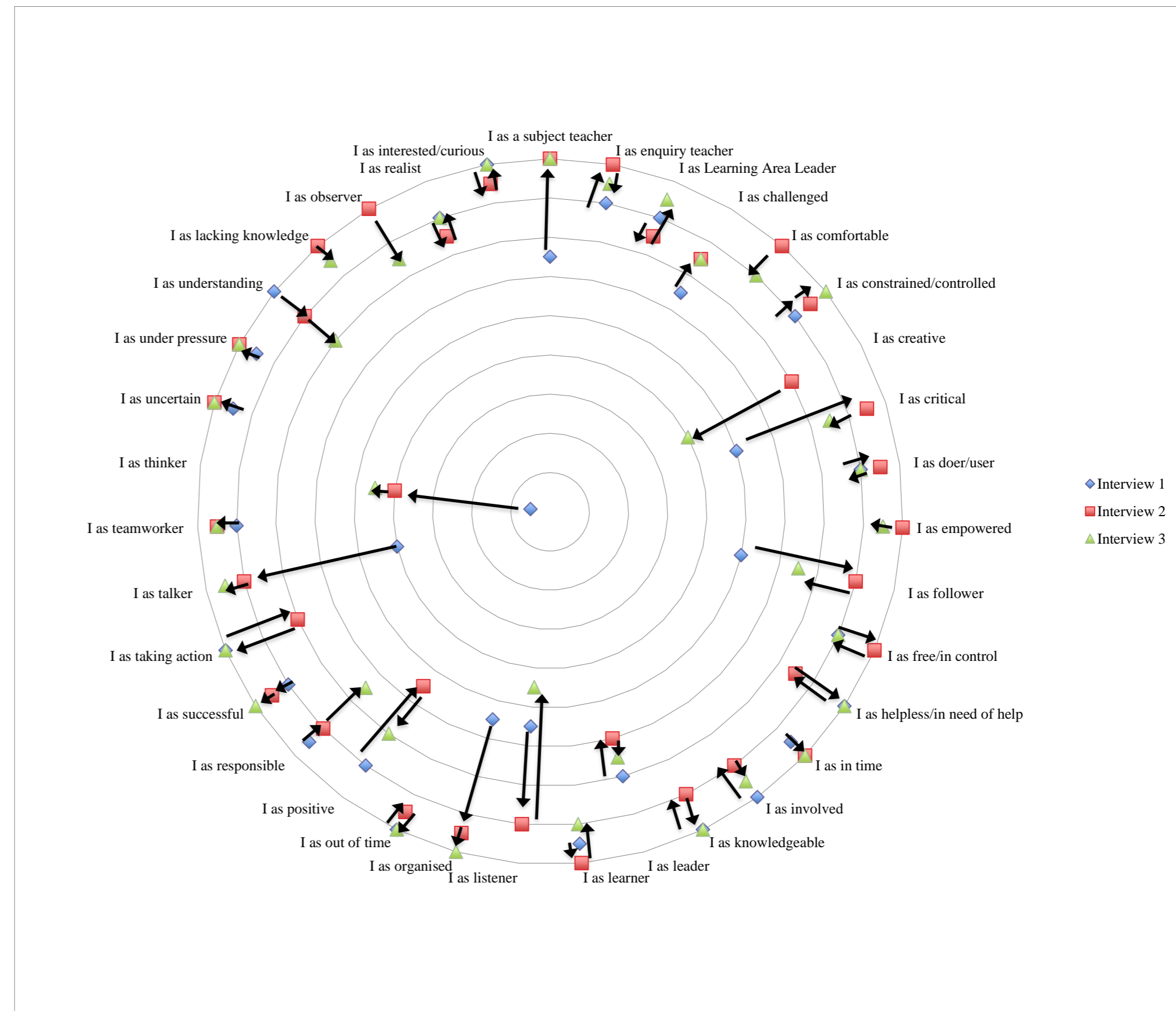
	Interview 2	Interview 3
4 I as a teacher (general)	0	2
5 I as a subject teacher	0	1
6 I as enquiry teacher	0	1
10 I as challenged	3	7
11 I as comfortable	0	1
12 I as constrained/controlled	4	5
13 I as creative	2	10
14 I as critical	9	4
19 I as doer/user	4	7
26 I as fearless	1	0
27 I as follower	1	6
28 I as free/in control	0	7
29 I as happy/enjoying	1	0
31 I as helpless/in need of help	1	0
34 I as involved	2	1
36 I as knowledgeable	0	1
38 I as leader	3	6
40 I as listener	8	4
41 I as negative	3	0
42 I as not taking action	1	2
43 I as organised	1	4
44 I as out of time	1	0
45 I as positive	5	4
49 I as responsible	1	3
51 I as successful	0	1
52 I as taking action	2	1
53 I as talker	0	3
54 I as teamworker	1	3
55 I as thinker	22	25
57 I as uncomfortable	0	1
59 I as understanding	2	8
65 I as lacking knowledge	0	1
66 I as observer	2	0
67 I as realist	1	1
68 I as idealist	1	0
Prominence	**82**	**120**

'Internal' positions

'External' positions

Column legend:

#	Position	#	Position
0	Me/myself	21	My fellow teachers
1	My child/children	22	A fellow teacher
2	My husband/partner	23	A problematic person/people
3	My wife/partner	24	My KTP Associate
4	My mother/father	25	My timetable
5	My teacher	26	My classroom
6	My students in enquiry sessions	27	My rules and routines
7	My students in non-enquiry sessions	28	My personal prior experience
8	My line manager	29	The toolkit for enquiry
9	My Principal	30	The Habits of Mind
10	My fellow enquiry group teachers	31	My enquiry/enquiries
11	Daniel Williams	32	My other responsibilities
12	Matthew Brown	33	Other people/things
13	Mia Evans	34	My curriculum area
14	Ethan Thomas	35	Other curriculum areas
15	Elizabeth Davies	36	The KTP project
16	Christopher Lewis	37	Whole school CPD
17	Anthony Jones	38	Assessment framework for enquiry ski
18	Michael Wilson	39	My school
19	Chloe Taylor/Isobel Smith	40	Residential weekend
20	Andrew Walker		

Teachers

Teacher	Interview	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Prominence
Andrew	Interview 1	8	0	0	0	2	0	60	6	0	1	1	0	0	0	0	26	0	0	0	0	0	2	0	16	7	1	10	0	6	0	19	75	7	6	11	10	0	0	0	0	0	**274**
	Interview 2	1	0	0	0	0	0	4	6	0	1	1	0	0	0	0	0	0	0	0	1	0	2	0	0	2	1	0	7	0	0	9	3	0	4	2	2	3	0	0	0	0	**49**
	Interview 3	13	0	0	0	0	0	29	51	1	4	1	0	0	0	4	0	0	5	0	1	0	4	3	0	2	1	0	42	6	17	14	25	1	11	12	1	7	3	0	0	0	**258**
	Prominence	**22**	**0**	**0**	**0**	**2**	**0**	**93**	**63**	**1**	**6**	**3**	**0**	**0**	**0**	**4**	**26**	**0**	**5**	**0**	**2**	**0**	**8**	**3**	**16**	**11**	**3**	**10**	**49**	**12**	**17**	**42**	**103**	**8**	**21**	**25**	**13**	**10**	**3**	**0**	**0**	**0**	**581**
Chloe	Interview 1	1	0	0	0	0	0	12	0	0	0	2	0	0	0	0	0	0	0	0	3	0	1	3	0	0	3	5	3	4	0	3	19	0	0	0	3	2	0	3	0	0	**67**
	Interview 2	3	0	0	0	0	0	2	18	0	2	5	0	0	0	0	0	0	0	0	1	0	3	0	0	5	0	0	12	0	8	0	11	0	2	1	0	8	2	1	3	1	**88**
	Interview 3	8	1	0	0	0	0	3	48	0	0	2	0	0	0	0	0	0	3	0	2	0	5	2	7	1	0	5	29	0	18	14	16	0	9	5	3	3	0	0	0	0	**184**
	Prominence	**12**	**1**	**0**	**0**	**0**	**0**	**17**	**66**	**0**	**2**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**6**	**0**	**9**	**5**	**7**	**6**	**3**	**10**	**44**	**4**	**26**	**17**	**46**	**0**	**11**	**6**	**6**	**13**	**2**	**4**	**3**	**1**	**339**
Christopher	Interview 1	2	0	0	0	0	0	34	1	0	0	1	0	0	0	0	0	0	0	0	0	0	7	6	0	0	2	0	0	6	0	4	27	0	0	13	7	1	0	0	0	0	**111**
	Interview 2	1	0	0	0	0	0	0	10	0	0	3	0	0	0	0	0	0	0	0	0	0	3	1	0	11	0	0	5	4	5	2	9	1	0	3	0	2	0	0	0	0	**60**
	Interview 3	0	0	0	0	0	0	14	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	3	6	3	17	0	0	0	0	2	0	0	0	0	**88**
	Prominence	**3**	**0**	**0**	**0**	**0**	**0**	**48**	**27**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**7**	**0**	**11**	**2**	**0**	**32**	**13**	**11**	**9**	**53**	**1**	**0**	**16**	**7**	**5**	**0**	**0**	**0**	**0**	**259**
Ethan	Interview 1	29	0	0	0	0	0	28	24	0	0	6	0	0	0	0	0	0	1	0	0	0	14	31	2	6	13	1	3	13	2	8	52	0	5	6	0	6	0	3	2	0	**255**
	Interview 2	13	0	0	0	0	0	0	30	0	2	1	0	0	0	0	0	0	0	0	0	0	7	1	0	1	0	1	19	11	1	5	15	0	4	1	1	8	0	2	1	0	**124**
	Interview 3	32	0	0	0	1	0	0	69	0	7	4	0	0	0	0	0	0	6	0	0	1	13	4	10	12	2	0	54	12	3	8	8	3	13	4	0	5	0	0	2	0	**273**
	Prominence	**74**	**0**	**0**	**0**	**1**	**0**	**28**	**123**	**0**	**9**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**1**	**34**	**36**	**12**	**19**	**15**	**2**	**76**	**36**	**6**	**21**	**75**	**3**	**22**	**11**	**1**	**19**	**0**	**5**	**5**	**0**	**652**
Isobel	Interview 1	9	0	0	0	0	0	39	1	1	0	0	0	0	0	0	0	0	0	0	10	0	7	0	0	0	9	1	8	5	2	9	34	0	0	2	1	0	0	7	0	0	**145**
	Interview 2	2	0	0	0	0	0	0	11	0	2	3	0	0	0	0	0	0	0	0	0	0	4	1	0	2	1	0	4	2	2	0	8	0	0	3	0	2	0	0	3	0	**50**
	Interview 3	18	0	0	0	0	0	3	34	0	2	4	0	0	0	0	0	0	0	0	0	0	9	0	0	3	3	3	28	11	2	0	9	0	9	9	2	1	0	0	1	0	**151**
	Prominence	**29**	**0**	**0**	**0**	**0**	**0**	**42**	**46**	**1**	**4**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**20**	**1**	**0**	**5**	**13**	**4**	**40**	**18**	**6**	**9**	**51**	**0**	**9**	**14**	**3**	**3**	**0**	**7**	**4**	**0**	**346**
Matthew	Interview 1	2	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	1	3	1	8	2	29	0	1	3	1	0	0	1	0	0	**98**
	Interview 2	1	0	0	0	0	0	0	6	0	3	0	0	0	0	0	0	0	0	0	0	0	5	0	0	2	2	0	7	0	3	1	16	1	4	8	1	3	0	0	2	0	**65**
	Interview 3	5	0	0	0	0	0	0	24	0	0	1	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	1	4	1	7	5	11	0	1	9	0	2	0	0	1	0	**77**
	Prominence	**8**	**0**	**0**	**0**	**0**	**0**	**42**	**30**	**0**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**10**	**0**	**0**	**2**	**5**	**2**	**14**	**2**	**18**	**8**	**56**	**1**	**6**	**20**	**2**	**5**	**0**	**1**	**3**	**0**	**240**
Michael	Interview 2	6	0	0	0	0	0	0	17	0	1	4	0	0	0	0	0	0	0	0	0	0	5	0	0	3	1	0	3	10	10	0	7	1	2	0	1	8	2	0	1	0	**82**
	Interview 3	5	0	0	0	0	0	0	25	0	1	0	0	0	0	0	0	0	1	0	0	0	4	1	4	0	2	7	19	4	7	13	10	0	0	3	2	5	3	0	4	0	**120**
	Prominence	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**42**	**0**	**2**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**9**	**1**	**4**	**3**	**3**	**7**	**22**	**14**	**17**	**13**	**17**	**1**	**2**	**3**	**3**	**13**	**5**	**0**	**5**	**0**	**202**

The example below is a copy of Isobel's feedback following a discussion of her radar graph of shifting perceptions of enquiry based learning in June 2012. I have added one word at the very beginning of her first section in order to make clear that the comments are her own. This appears in square brackets.

Plus	Minus	Interesting
[I] found that as the interviews progressed I was 'in need of help' less. This is reassuring as it suggests I was feeling more confident.	The 'I as positive' was disappointing as it suggests that I lost interest or positivity of the project over time. Perhaps this had something to do with other contextual factors?	How consistently I talked about things! I didn't expect to find such an even spread over the course of the 3 interviews.
'I as thinker' also was a plus as it seemed to show I was reflecting more on the things I did as time went on.		Strange also that a lot of the areas I didn't seem to talk about a lot at all and this didn't even change as the project progressed!
Overall I was rather consistent in how much I talked about things which is a plus I think as it showed a consistent level of thinking of the key areas throughout the process.		

40 Listener

Interview 1

	Chloe	Ethan	Matthew
0 Me/myself	1	5	0
	-Ci/+Ci 1.72	-Ci/+Ci 1.54	
		-Ci/+Ci 1.157	
		-Ci/+Ci 1.158	
		-Ci/+Ci 1.201	
		+Fi 1.270	
6 My students in enquiry sessions	1	2	7
	-Ce 1.96	-Fe 1.66	-Fe 1.11
		+Ce/-Ce 1.90	-Fe 1.80
			-Fe 1.89
			-Fe 1.91
			-Fe 1.92
			-Fe 1.101
			-Fe 1.138
10 My fellow enquiry group teachers	0	2	0
		+Ce/-Ce 1.182	
		+Ce/-Ce 1.188	
21 My fellow teachers	0	3	0
		+Ce/-Ce 1.226	
		+Ce/-Ce 1.249	
		+Ce/-Ce 1.249	
22 A fellow teacher	1	4	0
	-Ce/-Fe 1.242	+Ce 1.49	
		-Fe 1.52	
		+Ce/-Ce 1.53	
		+Ce/-Ce 1.54	
23 A problematic person/people	0	1	0
		-Fe 1.295	
33 Other people	0	2	0
		+Co/-Co 1.251	
		+Co/-Co 1.251	
	3	**19**	**7**

Interview 2

	Chloe	Ethan	Matthew
7 My students in non-enquiry sessions	2	4	0
	-Fe 1.45	-Fe 1.35	
	-Ce/+Ce 1.37	-Ce/+Ce 1.36	
		-Fe 1.44	
		-Fe 1.74	
9 My Principal	1	0	2
	-Fe 1.21		-Ce 1.32
			+Ce 1.3
21 My fellow teachers	1	2	0
	+Ce/-Ce 1.40	-Fe 1.22	
		+Fe/-Fe 1.88	
22 A fellow teacher	0	1	0
		-Fe 1.2	
24 My KTP Associate	2	0	0
	-Ce/-Fe 1.5		
	-Ce/-Fe 1.6		
33 Other people	1	1	0
	+Co/+Fo 1.47	-Fo 1.64	
36 The KTP project	1	0	0
	-Ce 1.4		
	8	**8**	**2**

Interview 3

	Chloe	Ethan	Matthew
0 Me/myself	1	8	0
	-Fi 1.125	-Fi 1.63	
		-Fi 1.180	
		F+/F- 1.184	
		-Fi 1.271	
		-Fi 1.272	
		+Ci/-Fi 1.273	
		-Ci/-Fi 1.279	
		-Ci/-Fi 1.28	
4 My mother/father	0	1	0
		-Fo 1.354	
7 My students in non-enquiry sessions	1	8	4
	-Fe 1.63	-Fe 1.101	-Fe 1.37
		-Fe 1.104	-Fe 1.45
		-Fe 1.112	-Fe 1.103
		-Fe 1.115	-Fe 1.114
		-Fe 1.121	
		-Fe 1.291	
		-Fe 1.309	
		-Fe 1.352	
9 My Principal	0	3	0
		-Fe 1.236	
		-Fe 1.238	
		-Ce 1.54	
10 My fellow enquiry group teachers	1	0	0
	-Fe 1.103		
17 Anthony Jones	0	2	0
		-Fe 1.209	
		+Fe 1.43	
21 My fellow teachers	1	2	2
	-Fe 1.134	-Ce 1.47	-Fe 1.137
		-Ce 1.58	-Ce 1.146
23 A problematic person/people	1	2	0
	+Ce 1.242	-Ce/-Fe 1.142	
		-Fe 1.143	
24 My KTP Associate	0	2	0
		-Ce/-Fe 1.183	
		+Ce/-Fe 1.272	
30 The Habits of Mind	0	0	2
			-Fe 1.35
			-Fe 1.114
33 Other people	0	5	0
		-Fo 1.50	
		+Co/-Co 1.277	
		-Fo 1.362	
		+Co/-Co 1.363	
		+Co 1.365	
	5	**33**	**8**

Strong classification and framing

	Interview 1 Chloe	Ethan	Matthew	Interview 2 Chloe	Ethan	Matthew	Interview 3 Chloe	Ethan	Matthew
+Ci	1	4	0	1	1	0	0	1	0
+Ce	0	9	0	2	0	1	1	1	0
+Co	0	2	0	0	0	0	0	3	0
	1	**15**	**0**	**3**	**1**	**1**	**1**	**5**	**0**
+Fi	0	1	0	0	0	0	0	1	0
+Fe	0	0	0	1	1	0	0	1	0
+Fo	0	0	0	0	0	0	0	0	0
	0	**1**	**0**	**1**	**1**	**0**	**0**	**2**	**0**

Weak classification and framing

	Interview 1 Chloe	Ethan	Matthew	Interview 2 Chloe	Ethan	Matthew	Interview 3 Chloe	Ethan	Matthew
-Ci	1	4	0	1	1	0	0	2	0
-Ce	2	8	0	4	0	1	0	5	1
-Co	0	2	0	0	0	0	0	2	0
	3	**14**	**0**	**5**	**1**	**1**	**0**	**9**	**1**
-Fi	0	0	0	1	3	0	1	8	0
-Fe	1	3	7	3	4	0	3	15	7
-Fo	0	0	0	0	0	0	0	2	0
	1	**3**	**7**	**4**	**7**	**0**	**4**	**25**	**7**

53 Talker

Interview 1

Position	Chloe	Ethan	Matthew
0 Me/myself	0	3	1
		-Ci 1.285	-Ci 1.4
		-Fi 1.286	
		-Fi 1.279	
6 My students in enquiry sessions	1	4	9
	-Ce 1.122	+Fe 1.45	-Fe 1.6
		-Fe 1.92	-Fe 1.16
		-Ce 1.94	-Ce 1.41
		+Ce/-Ce 1.122	-Ce/-Fe 1.44
			-Ce/-Fe 1.55
			-Ce/-Fe 1.89
			-Ce/-Fe 1.90
			-Ce 1.125
			-Ce 1.127
7 My students in non-enquiry sessions	0	4	0
		-Ce 1.137	
		-Fe 1.139	
		+Fe 1.178	
		-Fe 1.186	
10 My fellow enquiry group teachers	2	1	0
	-Ce 1.115	+Ce/-Ce 1.183	
	-Fe 1.115		
22 A fellow teacher	0	9	0
		+Ce 1.51	
		-Ce/-Fe 1.53	
		-Fe 1.64	
		-Fe 1.64	
		+Fe 1.271	
		+Fe/-Fe 1.277	
		-Fe 1.278	
		+Fe/-Fe 1.280	
		+Fe 1.287	
23 A problematic person/people	0	1	0
		-Fe 1.292	
24 My KTP Associate	0	2	0
		-Fe 1.64	
		+Ce/-Ce 1.217	
33 Other people	0	3	0
		-Fo 1.251	
		+Co/-Co 1.253	
		-Co 1.255	
Total	**3**	**27**	**10**

Interview 2

Position	Chloe	Ethan	Matthew
0 Me/myself	0	3	1
		+Ci/-Ci 1.14	-Ci 1.18
		+Ci/-Ci 1.64	
		+Ci/-Ci 1.66	
6 My students in enquiry sessions	1	0	0
	-Ce 53		
7 My students in non-enquiry sessions	0	4	0
		+Fe/-Fe 1.42	
		+Ce/-Ce 1.71	
		-Ce/-Fe 1.74	
		-Ce/-Fe 1.81	
10 My fellow enquiry group teachers	1	1	0
	-Fe 1.53	-Fe 1.63	
21 My fellow teachers	0	0	1
			-Ce 1.51
28 My personal prior experience	0	1	0
		+Ce/-Ce 1.13	
30 The Habits of Mind	0	1	0
		+Ce/-Ce 1.63	
Total	**2**	**10**	**2**

Interview 3

Position	Chloe	Ethan	Matthew
0 Me/myself	1	1	0
	+Ci 1.173	+Ci/-Ci 1.17	
7 My students in non-enquiry sessions	7	21	1
	+Ce/+Fe 1.42	-Ce/-Fe 1.10	-Fe 1.103
	+Ce/-Ce 1.181	-Ce/-Fe 1.16	
	-Fe/-Ce 1.191	+Fe/-Fe 1.29	
	+Ce 1.194	+Fe/-Fe 1.71	
	-Fe/-Ce 1.232	-Fe 1.72	
	-Fe/-Ce 1.233	-Fe 1.78	
	-Fe 1.239	-Fe 1.84	
		-Fe 1.110	
		-Fe 1.110	
		-Fe 1.115	
		+Ce 1.125	
		+Ce 1.127	
		+Ce 1.147	
		+Ce/-Ce 1.150	
		+Ce 1.152	
		+Ce/-Ce 1.158	
		+Ce/-Fe 1.195	
		+Fe/-Fe 1.221	
		-Ce/-Fe 1.310	
		-Ce 1.354	
		-Ce/-Fe 1.363	
9 My Principal	0	2	0
		-Fe 1.52	
		-Fe 1.236	
21 My fellow teachers	3	0	0
	-Fe 1.32		
	+Ce/-Fe 1.121		
	+Ce/-Fe 1.121		
22 A fellow teacher	2	0	0
	-Fe 1.134		
	-Fe/-Ce 1.135		
23 A problematic person/people	0	2	0
		-Fe 1.143	
		-Fe 1.200	
24 My KTP Associate	0	4	0
		-Ce/-Fe 1.246	
		-Ce/-Fe 1.246	
		+Ce/-Ce 1.260	
		-Ce/-Fe 1.364	
27 My rules and routines	0	1	0
		-Ce/-Fe 1.62	
33 Other people	0	2	0
		-Co/-Fo 1.364	
		Co/-Fo 1.367	
Total	**13**	**33**	**1**

Summary: classification and framing

		Interview 1			Interview 2			Interview 3		
		Chloe	Ethan	Matthew	Chloe	Ethan	Matthew	Chloe	Ethan	Matthew
Strong classification and framing	+Ci	0	0	0	0	3	0	1	1	0
	+Ce	0	4	0	0	3	0	5	7	0
	+Co	0	1	0	0	0	0	0	1	0
	Total	**0**	**5**	**0**	**0**	**6**	**0**	**6**	**9**	**0**
	+Fi	0	0	0	0	0	0	0	0	0
	+Fe	0	5	0	0	1	0	1	3	0
	+Fo	0	0	0	0	0	0	0	0	0
	Total	**0**	**5**	**0**	**0**	**1**	**0**	**0**	**3**	**0**
Weak classification and framing	-Ci	0	1	1	0	3	1	0	1	0
	-Ce	2	5	7	1	5	1	5	9	0
	-Co	0	2	0	0	0	0	0	4	0
	Total	**2**	**8**	**8**	**1**	**8**	**2**	**5**	**14**	**0**
	-Fi	0	2	0	0	0	0	0	0	0
	-Fe	1	11	6	1	4	0	9	22	1
	-Fo	0	1	0	0	0	0	0	3	0
	Total	**1**	**14**	**6**	**1**	**4**	**0**	**9**	**25**	**1**

55 I as thinker

Interview 1

# Topic	Chloe	Ethan	Matthew
0 Me/myself	0	3 — -Ci 1.209; +Fi/-Fi 1.271; +Fi/-Fi 1.274	0
6 My students in enquiry sessions	4 — -Ce 1.43; +Fe/-Fe 1.91; +Fe/-Fe 1.95; -Ce 1.97	7 — -Ce/-Fe 1.22; -Ce 1.75; -Ce 1.88; -Ce 1.93; -Ce 1.106; -Ce/-Ce 1.107; +Ce/-Ce 1.113	4 — +Ce/-Ce 1.18; +Ce 1.23; -Ce/-Fe 1.79; +Ce/-Ce 1.106
7 My students in non-enquiry sessions	0	3 — +Ce/-Ce 1.176; +Ce/-Ce 1.180; +Ce/-Ce 1.180	0
21 My fellow teachers	0	3 — -Ce/-Fe 1.151; -Ce/-Fe 1.153; +Ce/-Ce 1.227	0
22 A fellow teacher	0	1 — +Ce/+Fe 1.273	0
25 My timetable	0	1 — +Ce/-Ce 1.257	1 — +Ce/-Ce 1.147
26 My classroom	2 — +Ce/-Ce 1.70; +Ce/-Fe 1.75	0	0
27 My rules and routines	0	0	1 — -Ce 1.174
28 My personal prior experience	2 — -Ce 1.192; +Fe/-Fe 1.330	5 — +Ce 1.81; -Ce 1.88; +Ce/-Ce 1.224; -Fe 1.267; +Fe/-Fe 1.280	1 — +Ce/-Ce 1.31
29 The toolkit	0	0	1 — +Ce/-Ce 1.14
30 The Habits of Mind	3 — +Ce/-Ce 1.36; -Ce 1.94; -Ce 1.97	1 — +Fe/-Fe 1.23	0
31 My enquiry/enquiries	3 — -Ce 1.27; -Ce 1.68; +Ce/-Ce 1.136	10 — +Ce 1.28; +Ce 1.40; +Ce/-Ce 1.43; +Ce/-Ce 1.53; +Ce/-Ce 1.57; +Ce/-Ce 1.74; +Fe/-Fe 1.112; -Ce 1.126; +Fe/-Fe 1.149; +Ce/-Ce 1.185	6 — -Ce 1.4; +Ce/-Ce 1.73; +Ce/-Ce 1.103; +Ce 1.116; +Ce/-Ce 1.122; -Ce/-Fe 1.200
33 Other people	0	0	1 — +Co 1.195
35 Other curriculum areas	0	0	1 — +Ce/-Ce 1.159
36 The KTP project	0	1 — +Fe/-Fe 1.242	0
Total	**14**	**35**	**16**

Interview 2

# Topic	Chloe	Ethan	Matthew
0 Me/myself	3 — +Ci/-Ci 1.18; +Ci/-Ci 1.20; -Ci/-Fi 1.20	4 — -Ci 1.5; -Ci 1.5; -Ci 1.8; -Ci/+Ci 1.12	0
7 My students in non-enquiry sessions	3 — -Fe 1.6; +Fe/-Fe 1.36; -Ce/-Fe 1.52	4 — -Fe 1.11; +Ce/+Fe 1.13; -Ce 1.35; +Ce/-Ce 1.38	1 — -Fe 1.29
9 My Principal	0	1 — -Ce 1.55	0
21 My fellow teachers	0	1 — +Ce/-Ce 1.50	1 — +Ce/-Ce 1.41
25 My timetable	0	0	1 — +Ce/-Ce 1.14
27 My rules and routines	0	6 — -Fe 1.10; +Ce/+Fe 1.14; +Ce/-Ce 1.17; +Ce 1.27; -Ce 1.28; +Ce/-Ce 1.42	2 — +Fe/-Fe 1.11; +Ce/-Ce 1.17
28 My personal prior experience	0	6 — -Ce 1.24; +Ce/-Ce 1.27; -Fe 1.34; -Ce 1.43; -Ce 1.70; -Ce 1.70	0
29 The toolkit	0	0	1 — +Ce 1.25
30 The Habits of Mind	0	1 — +Fe/-Fe 1.64	0
31 My enquiry/enquiries	0	1 — -Ce/-Fe 1.73	3 — +Ce/-Ce 1.26; -Ce 1.27; +Ce/-Ce 1.38
33 Other people	0	0	1 — -Co 1.49
36 The KTP project	0	3 — -Ce 1.5; +Ce/-Ce 1.87; +Ce/-Ce 1.93	0
37 Whole school CPD	1 — +Fe/-Fe 1.41	0	0
39 My school	3 — -Ce 1.26; +Ce/-Ce 1.34; +Ce/-Ce 1.34	1 — +Ce/-Ce 1.90	0
Total	**10**	**28**	**10**

Interview 3

# Topic	Chloe	Ethan	Matthew
0 Me/myself	2 — -Fi 1.61; +Ci/-Ci 1.234	11 — -Ci 1.32; -Ci 1.58; -Ci 1.59; -Ci 1.64; +Ci/-Fi 1.145; -Ci 1.173; +Ci 1.226; -Fi 1.235; -Fi 1.240; -Fi 1.355; -Ci 1.365	2 — -Ci 1.53; -Ci 1.89
6 My students in enquiry sessions	3 — -Ce 1.247; +Ce 1.247; +Ce 1.251	0	0
7 My students in non-enquiry sessions	8 — +Ce/+Fe 1.38; +Ce/+Fe 1.43; -Ce/+Fe 1.66; +Ce 1.180; -Ce 1.184; +Ce/-Ce 1.193; -Ce/-Ce 1.202; +Ce 1.245	8 — -Ce 1.110; -Ce/-Fe 1.116; -Fe 1.172; +Ce/-Ce 1.185; +Ce/-Ce 1.185; +Ce 1.300; +Ce 1.352; +Ce 1.352	3 — -Fe 1.72; +Ce/-Ce 1.99; -Ce 1.64
10 My fellow enquiry group teachers	1 — -Fe 1.103	1 — -Ce 1.270	0
21 My fellow teachers	0	1 — -Ce 1.369	0
23 A problematic person/people	0	2 — -Ce/-Fe 1.142; +Ce/-Ce 1.202	0
24 My KTP Associate	0	1 — -Fe 1.274	0
26 My classroom	1 — +Ce/-Ce 1.149	0	0
27 My rules and routines	7 — -Ce 1.16; +Ce 1.41; -Ce 1.65; -Ce 1.122; -Ce 1.133; +Ce/-Ce 1.169; -Ce 1.210	12 — +Ce/-Ce 1.17; -Ce 1.32; -Fe 1.58; -Fe 1.72; -Ce 1.80; +Ce/-Ce 1.124; +Fe/-Fe 1.137; +Ce 1.152; +Ce/-Ce 1.226; +Ce/-Ce 1.248; +Ce/-Ce 1.286; +Fe/-Fe 1.327	0
28 My personal prior experience	0	9 — +Ce/-Ce 1.13; -Fe 1.156; -Ce 1.160; +Ce/-Ce 1.172; -Ce 1.198; +Ce/-Ce 1.220; +Ce/-Ce 1.275; +Ce/-Ce 1.325; -Ce 1.354	1 — -Ce 1.29
29 The toolkit	2 — +Ce 1.34; +Ce 1.38	0	0
30 The Habits of Mind	2 — +Ce/-Ce 1.247; +Fe/-Fe 1.247	2 — -Fe 1.331; -Ce 1.341	1 — -Ce 1.156
31 My enquiry/enquiries	5 — +Fe 1.83; +Fe 1.249; -Ce 1.262; +Ce 1.278; +Ce/-Ce 1.283	0	1 — -Ce 1.189
33 Other people	0	2 — -Co/-Fo 1.52; -Co/-Fo 1.182	0
36 The KTP project	1 — +Ce/-Ce 1.273	2 — +Ce/-Ce 1.257; +Ce/-Ce 1.262	1 — -Ce 1.19
Total	**32**	**51**	**9**

Summary

Strong classification and framing

	Interview 1 Chloe	Ethan	Matthew	Interview 2 Chloe	Ethan	Matthew	Interview 3 Chloe	Ethan	Matthew
+Ci	0	0	0	2	1	0	1	2	0
+Ce	4	16	11	2	11	6	16	18	1
+Co	0	0	1	0	0	0	0	0	0
	4	**16**	**12**	**4**	**12**	**6**	**17**	**20**	**1**
+Fi	0	2	0	0	0	0	0	0	0
+Fe	3	5	0	2	3	1	6	2	0
+Fo	0	0	0	0	0	0	0	0	0
	3	**7**	**0**	**2**	**3**	**1**	**6**	**2**	**0**

Weak classification and framing

	Interview 1 Chloe	Ethan	Matthew	Interview 2 Chloe	Ethan	Matthew	Interview 3 Chloe	Ethan	Matthew
-Ci	0	1	0	3	4	0	1	6	2
-Ce	10	23	13	4	17	6	15	27	6
-Co	0	0	0	0	0	1	0	2	0
	10	**24**	**13**	**7**	**21**	**7**	**16**	**35**	**8**
-Fi	0	2	0	1	0	0	0	4	0
-Fe	4	10	2	4	5	2	3	10	1
-Fo	0	0	0	0	0	0	0	2	0
	4	**12**	**2**	**5**	**5**	**2**	**3**	**16**	**1**