Can student teachers' pedagogy be enhanced by heeding children's thoughts about their learning?

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2015

UNIVERSITY OF BEDFORDSHIRE

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Institute of Research in Education (IRED)

A thesis submitted to the University of Bedfordshire in fulfilment of the requirements for the degree of Professional Doctorate of Education

September 2015

Abstract

The focus of this enquiry was to enable student teachers to engage with children's views to construct meaningful classroom learning experiences. The underpinning assumption was that learning is socially constructed.

Issues addressed were:

- what pupils thought helped/hindered their learning in classrooms,
- how heeding children's views of barriers to/facilitators of their learning can be used by student teachers for lesson evaluation, planning and reflective practice,
- to what extent children's views can support student teachers' understanding of children's learning and the development of their pedagogical practices (this includes both curriculum planning and teaching),
- the development and learning of initial teacher education students as student teachers engaged in reflective practice.

The research comprises two case studies; pilot and subsequent larger-scale project. It incorporated action research designed as iterative spirals of research, evaluation and development in classrooms where the student teachers were teaching children. New learning accumulated in one cycle was intended to be taken into the next. Bespoke pedagogical tools were used to create dialogic spaces and also as research data collection techniques. They scaffolded inter- and intra- personal exchanges to enable student teachers to understand children's learning from a socio-cultural perspective. These tools mediated children's reflection on their learning and then feedback to the student teacher about what they had learnt; how they had learnt it and what would enable them to learn better.

The results indicated:

- enhanced student teachers' understanding of how children learn as they adapted their practice in response to children's views,
- enhanced learning by the children owing to their exchanges on the interpersonal plane, with peers in the dialogic space created by the bespoke pedagogical tools,

- mentors require development to support student teachers to engage meaningfully with children's learning.

Outcomes cannot easily be generalised from case studies. This study found:

- children can express learning needs when appropriate scaffolds enable them to articulate abstract concepts,
- when student teachers respond to children talking about learning they can develop their practice.
- Implications for Initial Teacher Education are that it should:
  - highlight the importance of children's voice to support student teachers in developing their pedagogy,
  - model ways in which teachers can create dialogic spaces for children's interthinking,
  - consider what development mentors require to support student teachers' understanding of children's learning in classrooms.

Mediating the construction of dialogue with the Thinking Fish provided a way into both the process of interthinking for children, and also student teachers' understanding of such interthinking as expressed through their dialogue in the focus groups. Thus the Thinking Fish may be considered to be the vicarious presence of the teacher. This may be a useful approach for teachers and student teachers to adopt as the experience for the participants in this study was meaningful and replicable in future practice, using real classroom activity as research data.

Declaration

I declare that this thesis is my own un-aided work. It is being submitted for the degree of Professional Doctorate of Education at the University of Bedfordshire.
It has not been submitted before for any degree or examination in any other University.

Name of candidate: Kate Joanne Hudson

Signature:

Date: September 2015

Acknowledgements

Despite the way it felt during the long hours of hunching over a temperamental computer, or a set of data which would not add up or a piece of text which required reading several times to gain the meaning, a study, such as this, does not happen in isolation. As such, I would like to pay tribute to all those who have made this endeavour possible for me.

Student teachers, with their mentors, work tirelessly during an initial teacher education programme to ensure that they are ready for the challenges of the teaching profession. On a PGCE course this happens over the very short timeframe of nine months. I commend those involved in this study for their commitment, interest and time, when they were faced with other, more pressing, matters. I would like to acknowledge the children, in particular, for their enthusiasm, frankness and insight into their own learning experiences.

As this study is rooted in social constructivist principles, I thank the more knowledgeable others who have guided my progress through my zone of proximal development. Janice Wearmouth's belief in this study from the start, coupled with her continued patience, encouragement and feedback, has led me to this point. Also thanks to Uvanney Maylor for her insightful comments. Their professional collaboration has meant a great deal to me.

Support and encouragement has come from my colleagues in many different forms. Sometimes it was just a kind word, joke or piece of cake; sometimes it was a detailed conversation about methodology; sometimes it was covering for me whilst I was absorbed elsewhere; sometimes it was helping me to find space, within my workload. Whatever part was played, I thank them all.

I am absolutely certain that, without the love and friendship extended by my family, specifically my parents, this project would have remained unfinished. They are always there, instilling in me the belief that I can do it, and supporting me in different ways. I do not have words to adequately express the gratitude that I have for them.

To my Louisa, every day, in every way, you take me to the moon and back. Thank you.

A note for Isabelle: I hope that one day you accomplish something which you truly did not know you were capable of as well. Whatever that is, it is worth it, so go for it.

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List of abbreviations

AST	Advanced Skills Teacher
BEd	Bachelor of Education
CPD	Continuing Professional Development
DCSF	Department for Children, Schools and Families
DfE	Department for Education
DfEE	Department for Education and Employment
DfES	Department for Education and Schools
EAL	English as an Additional Language
ECM	Every Child Matters
GCSE	General Certificate of Secondary Education
HE	Higher Education
HMI	Her Majesty's Inspectorate
ITE	Initial Teacher Education
ITT	Initial Teacher Training
MEG	Minority Ethnic Group
MKO	More Knowledgeable Other
NCSL	National College of School Leadership
NCTL	National College of Teaching and Leadership
NQT	Newly Qualified Teacher
Ofsted	Office for Standards in Education
PGCE	Post-/Professional Graduate Certificate in Education
QTS	Qualified Teachers Status
SCITT	School Centred Initial Teacher Training
SEND	Special Educational Needs and/or Disabilities
TA	Teaching Agency
TDA	Training and Development Agency
TS	Teachers' Standards
TTA	Teacher Training Agency
ZPD	Zone of Proximal Development

Appendices

Introduction

The context for this research is a one year course in Initial Teacher Education (ITE) at a university in England. This research project is concerned with the development of student teachers' understanding about children's learning, during a Primary Postgraduate Certificate in Education (PGCE) course, in order to enable student teachers to plan appropriately for learning. In my own experience, understanding children's learning is the most important aspect of a teacher's role. However, the Teachers' Standards (DfE., 2012) do not emphasise this. I argue that when children talk about their classroom learning, student teachers are enabled to understand children's learning better, as well as the children developing an understanding about their own learning processes. In this study, I present and discuss a way of enabling talk about learning to be captured and how student teachers' practice may be developed as a result. I take a social constructivist perspective to learning (Vygotsky, 1978) in my practice, and in exploring the ideas in this research.

The fundamental importance of this study is that the PGCE course is, for most student teachers, the first time that they have the opportunity to study children's learning in the classroom context. Introducing student teachers to specific ways of focussing on the process of children's learning in classrooms has particular salience, in the current national context, for a number of reasons. First, pedagogy reflects a teachers' understanding of children's learning, and the learning process (Kozulin *et al*, 2003). Secondly, in the current national context, there is little emphasis on understanding children's learning in the Teachers' Standards. Without an understanding of children's learning it is difficult to see how student teachers can develop a clear, principled approach to developing their own pedagogy.

In the research process, I adopted three roles: PGCE course tutor, a learner, and researcher-enquirer and in the latter, took a reflexive position. In this study I have used bespoke pedagogical tools which were designed to scaffold the interpersonal exchanges between participants and their own intrapersonal reflections. I decided to collate evidence from three participant groups, student teachers, their children and their school-based mentors, about their views on a sequence of lessons taught to the children by the student teachers and observed

by the mentor. In doing this I was able to see a situation from a variety of viewpoints.

These two case studies were designed to explore two issues: firstly the extent to which children's voice can inform student teachers' understanding of children's learning and hence support the development of practice in classrooms; and, secondly, ways in which mentors can support the development of student teachers' practice that involves paying attention to this voice. The focus of the research was to enable student teachers to engage with children's views in order to construct meaningful learning experiences with them. The children's feedback on the lessons, that the student teachers had planned and taught, helped to shape their progress as reflective practitioners. The underpinning pedagogical approach was that learning is socially constructed. This view of learning is examined in light of the context and also provides some links into the current thinking of using children's voice to better understand the learning which they experience.

The issues addressed in this study were:

- what pupils thought helped and/or hindered their learning in classrooms with student teachers,

- how understanding and acknowledging children's views of barriers to/facilitators of their learning in classrooms can be used by student teachers for lesson evaluation, planning and reflective practice,

- the extent to which drawing on children's experiences in classrooms can support student teachers' understanding of children's learning and the development of their pedagogical practices (this includes both curriculum planning and teaching),

- the development and learning of Initial Teacher Education (ITE) students as student teachers engaged in reflective work-based learning.

This enquiry was conceptualised as a two case studies, a pilot and a subsequent larger scale research project. It incorporated a piece of action research designed as an iterative spiral of research, evaluation and development in classrooms where the student teachers were teaching children. New learning accumulated in one cycle was intended to be taken into the next. Bespoke pedagogical tools were used as research data collection techniques which were intended to

scaffold inter- and intra- personal exchanges with a view to the student teachers understanding children's learning from a socio-cultural perspective. These tools enabled children to reflect on their learning and then feedback to the student teacher about what they had learnt; how they had learnt it and what would enable them to learn better.

The results indicated:

- enhanced understanding of how children learn on the part of the student teachers, who adapted their practice in response to their reflections about the children's feedback and showed clear development as more reflective practitioners.

- the interactions between the mentors and the student teachers showed that the mentors required further professional development in terms of what student teachers need to understand when working with children; and the kind of experiences student teachers are offered in schools so that they can to plan learning experiences that enable them to engage deeply and more meaningfully with children's learning.

- the children orated their learning needs. Being listened to, and knowing that that their views were incorporated into the planning of their learning, gave them some ownership of the learning process as well as a deeper understanding of their own learning.

Any assumption that the outcomes of two case studies can be generalised is highly problematic. However, if the study were to be replicated at scale and the results were also replicated, the implications may well be that:

- primary age children have the potential to express their learning needs and rationalise what they require to learn best when appropriate scaffolds are designed to enable them to articulate sometimes quite abstract concepts,

- student teachers respond to enabling children to talk about their learning by receiving their feedback, they develop their practice accordingly through ongoing reflection and evaluation, in a very short time,

- mentors require development in understanding the impact children can have in supporting a student teachers' developing understanding of planning for effective learning,

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- ITE requires reconstruction to support the planning, reflection and evaluation of student teachers in order to enhance children's learning. Initial Teacher Education should model the importance of children's voice as a means of supporting student teachers to explore their pedagogy.

I concur with Littleton and Mercer (2013) in terms of the benefits of talk for learning enabling Interthinking. My own personal experience as a primary teacher and now tutor is that talking about learning helps develop an understanding of a topic. I agree with Flutter (2007) regarding embedding the practices of talking about learning into ITE. I have experienced how quickly student teachers learn when given the opportunity to listen to children talking about their experiences with learning.

This research project begins by contextualising the national issues surrounding ITE, both historical and current, and also significant local issues (chapter one). The literature is reviewed (chapter two) through considering talk for learning, the expectations for ITE, including how student teachers are assessed and how this is underpinned by a social constructivist view of learning. Chapter three discusses the methodology I used, the tools that I employed in collecting and analysing data, and the ethical considerations I followed. Chapters four and five present the findings from the two case studies. Chapter six provides a discussion of the results and draws out possible implications for future practice in ITE and beyond. Chapter seven reflects back on, evaluates the research, and suggests appropriate relevant areas for future research and practice.

Chapter 1 – Context

1.1 Introduction

This chapter begins by discussing the current context of the PGCE course within which this study took place. In order to contextualise the current context of ITE, it is then followed by a discussion of the development of teacher education over time. This is important in order to understand how the current position of ITE is arrived at. The chapter concludes with a discussion considering the concept of assessment, the ways in which student teachers in ITE are assessed during their classroom practice and critiques of this which are significant in the context of the current study.

1.1 University and course context

1.1.1 One university and course perspective

At the university in which the current research is focussed, the course reviews of 2008/9 revised the Primary ITE courses to ensure that the changes in the Government criteria for ITE were reflected through their curricula. The PGCE team had a fundamental understanding of learning as the staff is all qualified teachers with experience. This understanding leads them to a collective view that learning is appropriately understood as constructed and therefore they teach in this way to model the practice to their learners, that is student teachers. The courses include elements of training during university sessions, observation/assessment during school experiences, and development and improvement through a research project (Eun, 2008) and reflective journal.

The University's teaching and learning strategy suggests that it was designed to underpin courses to ensure that graduates are able to make their own professional development decisions. For student teachers this ensures that they continue to learn from their reflections of their teaching and the learning of the children with whom they work (Bleach, 1999); thereby providing teachers for the future (Eun, 2008). The strategy also acknowledges that students need to operate in communities of practice on their courses and that successful learning is dependent on how marginal or integrated that student's role is within their learning community(-ies). It acknowledges that learning is personal to each student and it values the language interactions between tutor and peers (Atlay,

Gaitun & Kumar, 2008) as well as the students making meaning from their experience, a social constructivist view of learning. This links to more recent views of children constructing their own reality; children as active agents in their own learning. Therefore the student teachers are being taught in an institution which may share their ideology of learning, and which they are encouraged to explore as a student teacher.

1.1.2 Aims and rationale of the primary Postgraduate certificate in education (PGCE) 2009/13

The University has a long standing record of providing Teacher Education and has a strong local and national reputation. The current version of the full time PGCE was redesigned to meet a changing need identified in the recently revised Professional Standards for Teachers (DfE, 2012) but also to 'future proof' a more school-led approach to teacher education which had been muted by the Government at the time. This particular version of the course ran from Sept 2009 to July 2013. After 2013 the course was revised again to ensure it was brought up to date. The course is staffed by five professional tutors who are responsible for the professional, pastoral and pedagogical work with the student teachers. There are additional subject specialist tutors utilised in addition to this core team. A proportion of all tutors visit student teachers in school and support the mentors with the assessment process, as well as the facilitation of student teacher learning through the mentor. Materials for the course are produced by the course tutors.

1.1.3 PGCE course aims

This course aims to develop student teachers' understanding of children's learning through three interrelated elements. These include the essential knowledge and skills of the student teachers, and their ability and preparedness to reflect upon and build upon these. To this end the course aims to support the student teachers to improve their level of subject knowledge and understanding across the whole primary curriculum, and achieve standards of professional competence so that student teachers can teach effectively in the classroom across the primary age range (5 to 11) or the early years age range (3 – 7). The second element is reflective, which as expert practitioners acknowledge, is a key skill in facilitating and enhancing the learning of children. The final part is

supporting the student teacher to ensure they meet the Teachers' Standards (DfE, 2012).

In broad terms the course aims are:

- to produce beginning teachers who are independent, reflective, creative, innovative, collaborative, resilient and caring professional practitioners;

- to enable student teachers to start to develop expertise in learning and teaching, based upon a sound knowledge and understanding of child development and pedagogy;

- to develop the necessary knowledge and understanding of the subjects student teachers teach so that student teachers may further enhance their knowledge for primary teaching;

- to develop the practical skills, knowledge and the theoretical understandings necessary to enable student teachers to engage in the development of the curriculum;

- to produce beginning teachers who are committed, and accountable, to meeting the needs of all children within a culturally diverse society;

- to develop the necessary communication and collaboration skills and practices to enable student teachers to teach effectively in the primary school alongside children, colleagues, parent/carers and other professionals;

- to begin to develop leadership and management skills;

- to encourage student teachers to reflect on their academic and professional experiences in the light of ideas of best practice and employ this as the basis for long-term professional and personal development with a commitment to life-long learning.

These aims were constructed in partnership with members of the university staff and student teachers, as well as colleagues from partnership schools. They form the basis of the University's view of a graduate student teacher and were constructed and implemented during 2009 in line with the start of this course. They are not solely directed by the Teachers' Standards but rather reflect a vision developed by those experienced in the profession of what attributes a Newly Qualified Teacher (NQT) ought to have in order to be ready for their role in the

teaching profession, whilst taking full account of the Teachers' Standards at the same time. In other words they include the Teachers' Standards but are not limited to them.

The course is underpinned by research activity undertaken by the staff team in order to ensure maximum learning performance, for example, with regard to ICT needs or the development of a reflective practice taxonomy. Therefore findings from this study may also be used to inform future course reviews and underpin pedagogical practices in the training of teachers.

1.1.4 Qualified Teacher Status (QTS)

The award of the PGCE also recommends Qualified Teacher Status (QTS). This is the recognition that student teachers are qualified to teach. In recognition of the extra demands placed upon a professionally focussed course some units are particularly concerned with QTS. These typically focus on classroom or similar professional activities and tasks. To achieve QTS student teachers will need to provide evidence that they have met the Teachers' Standards (DfE., 2012).

1.1.5 Course structure

The course is constructed around three units with the overall programme having four main interconnected elements:

- Perspectives, Values, Principles and Beliefs of Education
- Professional Development Profile: The Reflective Practitioner
- The Curriculum: Learning and Teaching
- Assessed placement-based experiences – 98 days (Teacher Development Agency (TDA – as it was for this course intake of student teachers) requirement was a minimum of 90 days, although no it is 120 days) in two consecutive key stages;

Figure 1 below shows how these elements connect together.

Figure showing nested ovals. Outer oval labeled "School Placement" at top and bottom. Contains two green overlapping circles: "Learning and Teaching" (left) and "Perspectives, Values, Principles and Beliefs" (right), with a central teal circle "Professional Development Profile".
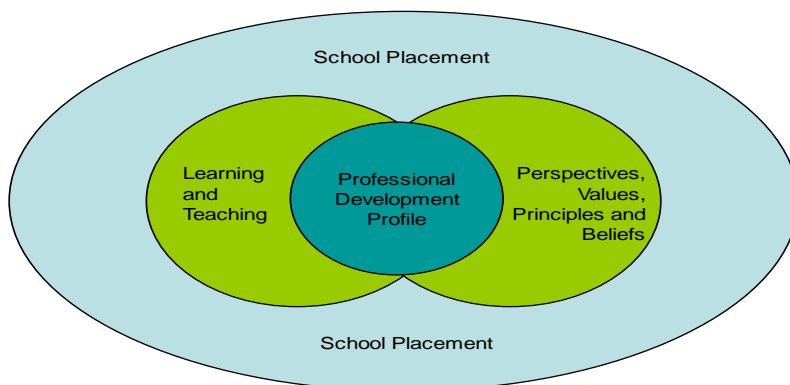
Figure 1 The interrelationship of course units

Each of these elements is designed to enable the achievement of the broad course aims discussed earlier. Embedded within each unit is the opportunity to develop knowledge and understanding as evidence towards the Teachers' Standards, however, the assessed placement experiences are where most of the practical experience is developed, and therefore it is this unit which predominantly 'measures' the student teacher's performance against the Teachers' Standards specifically.

1.1.6 Teaching and learning

A variety of strategies are employed as learning activities including practical experience of school-based work, lectures, seminars, tutorials and workshops according to the needs of each contributing unit. Primary placement experiences for the two assessed placements are made by the Partnership Office in collaboration with the Course Coordinator. These placements occur throughout the year. Primary placement-based experiences and university-based work are closely inter-related, each supporting the other to enable academic and professional study (QTS) to be achieved.

1.1.6.1 Understanding children's learning within an ITE course

Student teachers spend a significant percentage of their time on Initial Teacher Education (ITE) courses in school (up to 80% in the case of the PGCE). The quality of this experience is therefore crucial to the overall quality of the education

provided by the Teacher Education Department at the University.   The Primary provision is judged accountable for the quality of school-based learning by the funding provider, the National College of Teaching and Learning (NCTL – formally the Teaching Agency - TA), through the inspections carried out by the Office for Standards in Education (Ofsted) of the Primary provision for ITE, and by the student teachers themselves through their evaluations of the quality of their experience of the ITE course provision. It is therefore essential to the future recruitment of students and for future funding by central government that the Primary provision receives a favourable evaluation by Ofsted, especially given that inspection reports are open to public scrutiny and that the level of future funding may depend on a positive outcome from the inspection process. Further, the views of past student teachers may contribute to influencing choice of course provider by potential students as NQT survey results are also published, and scrutinised as part of an Ofsted inspection. Student teachers' teaching practices as well as their overall grade can be influenced by the kind, and quality, of experience the student teachers receive in schools. This can then impact on their future employability.   There is now a great deal of evidence to suggest that student teachers' school experiences can make a strong impact on the quality of children's learning (Alton-Lee, 2003; Rutter *et al*, 1979) and can therefore be seen to have an indirect, but sometimes substantial, influence on children's future life chances.   Indeed Ofsted use, as a grading criterion, the impact student teachers have on the learning of the children in their care. So from a course perspective and with the children's learning firmly in mind, it is important for the course to develop teachers with a clear understanding of children's learning, to face the challenges in education today.

1.1.6.2 A personal perspective on learning

I am a primary teacher by profession, very interested in children's learning. I came to teacher education via a role as an Advanced Skills Teacher (AST) which involved working alongside other teachers, particularly NQTs, to improve their practice, in prioritising and maximising children's learning. During my time as a senior lecturer working on the Primary ITE courses, it became apparent that the student teachers seemed to experience difficulty in connecting theory and the practice in their course. My own philosophy of education is rooted in social constructivist principles, hence the conceptual framework for this research.

In addition, the new National Curriculum which began in September 2014 (DfE, 2014) is content driven. It does not prioritise key attributes such as developing independence, resilience, problem solving skills, collaboration, communication and so on, which may be applied across a range of curricular areas and situations later in life. From my experience student teachers need to understand children's learning, their development, the reasons that certain practices work and that others do not. They need to develop pedagogies for learning and teaching, not only the practicalities of delivering subject knowledge. Further, it is for this reason that I use the term 'student teacher' rather than 'trainee'. The former implies someone who is learning to become a professional teacher; the latter implies an approach which is perhaps more about fulfilling a set of requirements or demonstrating a level of competency. The former is ongoing and developmental, the latter has an end point which must be reached. The Teachers' Standards and levels do not appear to be based on an understanding of learning; of how important progress and development are to all learners (children or student teachers); of how best learners learn; of why certain practices are effective and others are not.

1.2 Teacher education

1.2.1 Developments in teacher education over time

Education is frequently a salient issue in political debate. It regularly features in campaigns, speeches and strategies as it is considered an important element for a society. Jakobi (2011) posits that the reason for this is that education has had a growing value in society since the end of the Second World War in 1945. His longitudinal, international study indicated that education is highly visible to individuals, organisations and societies and therefore everyone has a 'stake' in it. This coupled with the view that education leads to increased employment, economic growth and a reduction in crime means that not only does everyone have a 'stake' in it but everyone also has a reason to support its future development. Jakobi (*ibid.*) also found that despite a growing politicisation of education, progress in learning has not necessarily followed suit. He suggests that some reasons for this, in the UK, are the lack of consensus in educational development across political parties, as well as cuts in funding due to competition from healthcare and pensions and so on. As such the education of teachers is embedded within a wider political context.

In considering a possible way forward for teacher education in England, it is useful to understand the trends seen in teacher education as a consequence of changing political priorities in the field in relation to the current context, and the changing concepts of what is required in relation to educating teachers to educate the young in society. It is clear that these changing priorities have led to various names for the development of beginning teachers: Teacher Training and Teacher Education. The differences are evident in the degree and kind of assessment, autonomy, curricula and so on through which these new teachers are developed. I see a difference between training and education. The UK Government advocates training for teacher education, which for me, implies a means of reaching a certain level by acquiring a particular skill-set by a certain time. Whereas in my experience, teachers need to be educated to understand teaching and learning processes in order to develop their practice from reflection and identify learning needs, for me, 'education' seems a more appropriate descriptor.

Since the Bryce Committee Report on Secondary Education in 1895, the UK Government has played an active role in ITE. Tomlinson (1993) lists 'landmarks' in the education and training of teachers since that time. These landmarks demonstrate the clear link between social and governmental changes and the changes in ITE. In 1925, following the Burnham Report (Tomlinson, 1993), the routes through Initial Teacher Education were clarified; either a four year degree course at University or two year course at a Teacher Training College, both including a minimum period of supervised school placement. During the period after the war in the 1940's for example, there was a need to reconstruct the country, both physically through building programmes and socially through recovering from losses of huge numbers of men, including teachers. This led to an issue with the supply and recruitment of teachers. Consequently, following the McNair Report of 1944 (Tomlinson, 1993) married women were allowed to teach and the Government insisted on a one year probation following qualification for all teachers. In addition there was a huge rise in the birth-rate. Further, due to the increased need for teachers in the post-war period an additional route of one year at Postgraduate level was introduced. This changed again in the 1960s when a three year route was introduced, replacing the two year.

During the 1960s there was a strong focus on the structure and content of ITE rather than just the product, the trained teacher at the end. The 1960s saw a rapid rise in the school population which required an increase in teachers in training from sixty to one hundred and twenty thousand. The context of society at the time was led with the notion of 'social democracy' (Furlong, *et al*, 2000). The idea for ITE was that teachers should have a strong personal education, rather than practical training. For example, the introduction of the Bachelor of Education (B. Ed.) model in 1963 concentrated on developing four aspects of a student teacher's understanding; psychology, sociology, philosophy and history of education (Alexander *et al.*, 2010).

In the 1970s teacher education was 'muddled' (Furlong, *et al*, 2000) in that Teacher Education departments, unions and Her Majesty's Inspectorate (HMI), each with its own thinking about teacher education, influenced the practice across a growing range of providers including universities, polytechnics and colleges. At this time theory was separated from practice in schools. During the 1970s there was a rise in the criticism of education which began with Callaghan's (Callaghan, 1976) speech to Ruskin College, Oxford and in turn this led to criticism of ITE. The rhetoric around this suggested that there was concern about falling standards in schools and it was then implied that this was a result of teachers' abilities to teach and began the Government change of emphasis from teacher education to teacher training. In 1972 the James Report (Bleach, 1999, Kerry & Farrow, 1996) introduced the formalising of the mentoring role in teacher education through the implementation of school-based tutors, as well as raising the school leaving age and enlarging the curriculum. The report recognised that there were disparities in the training in ITE and made recommendations to address this, including the need for students to spend more time in school whilst being supported by school-based professionals, that is a mentor (Bleach, 1999), as a guide and master of the craft of teaching. Callaghan's (1976) speech at Ruskin College emphasised that higher standards in education were required and that this would be monitored by 'assessment and performance' units. Later the Thatcher Government was elected in 1979 and, during its period in power, there was increased specificity about the content covered and curriculum organisation of teacher training. Practising teachers had to work alongside teacher education courses in the planning, assessing, selecting and delivery processes (Furlong *et al.*, 2000). Furthermore, there was an introduction of set criteria against which

ITE providers would be inspected and accredited (Alexander *et al.*, 2010). This began the 'conformist' thrust in ITE which was later 'enforced' with the introduction of Ofsted in 1992. In addition the same report advocated three cycles of teacher education, personal, initial and in service (Furlong *et al.*, 2000). Today we are seeing many of the same issues and this reflects the continuing Government agenda to advocate a particular model of teacher education.

From another perspective, it could be seen that some of these changes were intended to standardise the way that ITE was conducted. The content, organisation and processes of ITE have not reached a position where a commonly agreed model has been constructed and all parties accept one view. It has had to change with the policies of Governments and the demands of a changing society; but it may also be the case that ITE has taken the blame (Tomlinson, 1993) for many of the changes that are beyond its remit; for example, the poor economic situation or the perceived reduction in morality and community because the children are not being taught properly. The Government's answer over time has been to reduce the autonomy of ITE providers and increase their own control (Harnett & Carr, 1995).

During the 1980s ITE came under scrutiny again and the Government began to exert firmer control over education. The "Teaching Quality" White Paper of 1983 (Tomlinson, 1993) introduced Qualified Teacher Status (QTS) to the profession and a curriculum which had to include subjects as well as the development of professional skills including assessment. Today the Government's White Paper (DfE, 2010) mirrors these attempts to standardise through insisting that the priorities in ITE should be Special Educational Needs and Disabilities (SEND), behaviour management, early reading and phonics, mathematical understanding of number. It cannot be denied that ITE does have a role to play in ensuring there are trained teachers who can cope with teaching and managing learning in a changing society. However, in my opinion, based on my experiences in education, increased control and directives from the Government, as well as closer scrutiny from Ofsted and measuring the performance of student teachers purely against a set of standards, may be too narrowly focussed as this centres the focus around a set of skills required to meet competencies rather than developing the understanding of the pedagogy underpinning learning and teaching. This is discussed further in this chapter. In addition, these external

pressures are not easily borne in Higher Education (HE) and can cause tensions between the academic and the professional requirements of the course.

In 1987, NQTs were surveyed for the first time and the Government interpreted responses to add evidence to their growing view that there was too much theory and not enough time practising on teacher education courses. They promoted the view that much more formal structure was needed in public education. The 1988 Education Act introduced a framework for ITE. This act also introduced the National Curriculum as well as addressing admissions and finance procedures for schools. Additionally, it paved the way for Ofsted in 1992, to make schools more accountable. As a result of this increased central control, the implications for HE establishments were that it highlighted their accountability for ITE and the increased obligation of schools to prepare capable student teachers by formalising a framework for ITE in order to try and obtain consistency across the sector. Therefore this Act was very important as it began the marketisation of approaches to education including teacher education.

During the period of 1990-2000 increasing control was taken of ITE by the Government. The 1990s were not a time of stability in teacher education as there was an increase in the scope and depth of reforms, in particular a continued and increased emphasis on greater school-based training; 66% of time had to be spent in school and 34% in university. Ofsted developed their inspection framework and issued 'quality ratings' (Furlong *et al.*, 2000) for teacher education providers and funding from the Teacher Training Agency (TTA) was dependent on being graded well by Ofsted. This was a difficult balance as the external accountability to Ofsted and increased school-based training was not matched with a statutory responsibility for schools to participate in school training for beginning teachers (Furlong *et al.*, 2000). In addition, in 1997, a 'national curriculum' for teacher education was introduced with a focus on trainees attaining prescribed 'statements of competence' (Furlong *et al.*, 2000) on completion. Schools had a right to apply to be partners in teacher education (for example by establishing School Centred Initial Teacher Training (SCITT) and joint responsibility for the training between schools and HE was emphasised. Most courses continued to emphasise the knowledge, understanding and attitudes of professional competence permeating across practice and theory through the model of reflective practice. This was due to concern by course

providers about and over-emphasis on skills and techniques and the breaking up of teaching into a number of discrete behaviours which the competency model was suggesting (Furlong *et al.*, 2000). Towards the middle of this decade those involved with teacher education were finding ways of working with the competences to meet the Government criteria and maintain a commitment to deeper professional values (Furlong *et al.*, 2000).

The technicist approach of demonstrating competence by meeting a set of standards was introduced and embedded. Inspection and compliance was the tool used to 'monitor' the effectiveness of training and grading ITE courses and could lead to their success or failure. In 1992, a Framework for ITE (Jones & Straker, 2006) was established through DfE Circular 9/92 (Hobson, 2002, Whitehead & Fitzgerald, 2004). This guidance gave clearer structures as to the ways and means student teachers should be supported during their period of education. Further, the Professional Standards for Qualified Teacher's Status (QTS) were implemented (Bleach, 1999) formalising the education for the profession further. Part of the problem here is that the terminology of 'teacher training' and 'teacher education' is used interchangeably.

The change in Government in 1997 saw a continued push from Labour towards the models of teacher education started by the Conservatives previously. The first was the restructuring of the competences into 'standards' (Furlong *et al.*, 2000). These were 'specific, explicit and assessable' (Furlong *et al.*, 2000) and demonstrated direct political intervention into teacher education. The Government also began to publish league tables of teacher educators based on their Ofsted grades which, if poor, could lead to reinspection, closure or withdrawal of accreditation of the provider. In addition these 'quality ratings' (Furlong *et al.*, 2000) were used to redistribute places for teacher training courses to the higher graded providers.

One important change that took place at this time was further development of competency-based assessment criteria (Kerry & Farrow, 1996). This allowed the progress of students to be evaluated by those they worked with in school and were detailed in DFE Circular 4/98 (Brooks, 2000). It is here that the mentors' role in school became essential as they were now expected to assess and grade their student teachers' competency in key areas. This was not the conventional definition of a mentor as it now had the dual role of both guide and assessor.

Initially, student teachers were assessed against discrete tasks set by the mentor to demonstrate their ability. This change moved the mentor away from merely a guide and master, to someone who can manage and develop an adult learner against nationally set criteria. The Standards were now explicit to all as they were in the public domain (Winter, 2000). Assessment then is focussed towards meeting the Standards (Martin & Cloke, 2000) and the Standards themselves represent an ideology of what student teachers should achieve.

Using these competency-based assessment criteria implies that all student teachers can be developed in the same way, according to the same steps. One major issue with this approach is that the focus is on the end point of meeting the required level as opposed to the process of learning which develops understanding. Additionally, there are the issues of who decides what should be assessed and included as a Standard (Winter, 2000). Hager and Butler (1996) cited by Furlong *et al* (2008) describe a move away from 'scientific' assessment methods where students complete closed problems with definite answers in order to demonstrate ability towards a 'judgemental' model that takes account of students reproducing competences over time, and acknowledges the context in which the student teacher operates. The Standards assume that professional behaviour, skills, knowledge and so on; can be broken down into a series of assessable, measurable, demonstrable units. The Standards themselves could become atomistic in nature (Winter, 2000) where students become task orientated just to gather evidence of completion of each Standard. This is difficult to reconcile if a view of teacher education rather than teacher training is adopted as the Standards are the professional recognition of being a teacher but understanding of the pedagogy of the practice is not developed within them. One contribution of a social constructivist approach to ITE might be school practice working in tandem with the academic strand to develop deeper understanding.

The Teachers' Standards may have been developed to provide an objective framework for evaluating teachers' practice, nevertheless there is always room for subjective interpretation. The judgement of student teachers' quality as teachers is, by nature, holistic (Furlong *et al.*, 2000). That is, not predisposed to measurability. Additionally here we find a gap between the focus on the acquisition of skills, and students teachers need to understand the pedagogy and

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frame their understanding in practice (a constructivist approach). This is considered later as part of the literature review.

With ITE courses changing in the late 1990s, allowing further time in school and providing assessment against the Standards, they were now subject to inspection by Ofsted just as the schools were (Furlong *et al.*, 2008); thus making HE more accountable too. As a result, the Ofsted Overview report of 1999 into secondary schools threatened school-based ITE as the report claimed that standards were not meeting expectations (Brooks, 2000). The Government wanted to see 'training' in the school classroom, over the pedagogy taught in universities. This in itself provides challenges for the school and university partnership, mentoring development and student teacher learning.

With the move towards school-based training the underpinning research about education, that is the underpinning hallmark of a University education, may be lost as the 'academic' arm of ITE is replaced by more practice – a problem ITE has faced before as it could be perceived as adopting a craft-based apprenticeship model. It also means that the student teachers who follow this route may be less able to critique policy and practice as they may not have an understanding of the underpinning theory of learning and teaching (Winter, 2000, Furlong *et al.*, 2008). This has implications for the teachers of the future being able to make reasoned, informed decisions about best practice for their learners. It may also again marginalise the importance of the construction of pedagogy by teachers. However, there is concern that if a student teacher is 'apprenticed' to a teacher with poor practice, then poor practice is what they could learn. Therefore it could be argued that the universities serve as useful moderating influences on the process.

1.2.2 Teacher professionalism

In adopting increased accountability and content of teacher education and in meeting the demands of the Government to supply qualified teachers, the question of what it means to be a professional teacher is raised. Furlong *et al.*, (2000) define teacher professionalism alongside other professions' professionalism, as requiring knowledge and knowledge-based skills in which teachers should be trained, in addition to being able to make judgements about their clients and take responsibility for their part in working with a client. So a professional should have knowledge, be autonomous in applying that knowledge

and be responsible for the consequences of their decisions. An environment which sees teachers attaining competences meets only one of these aspects – knowledge that is decontextualised and transmitted. The Governments of the 1990s therefore adopted a stance moving from a liberal view of school led teacher education towards a neo-conservative view of traditional models of learning, transmitting knowledge, skills and values. For teacher training this meant an 'apprenticeship' model of learning – very practically based, emulating experienced practitioners (Furlong *et al.*, 2000) and therefore the HE aspect of teacher education is marginalised. This was at odds with this notion that both practical training and the understanding of the underpinning theory of how children learn, led by the experts in each part (schools for the practical side and HE for the theoretical) were of value.

One view of teaching is where performance is measured against the outcomes of the learners in exams or tests. This implies that teachers are good if children do well in tests. However, as Kincheloe (1993) points out, this is an over simplification of teaching and actually it deskills the professional judgement of a trained teacher. In recent years though, it seems that there has been somewhat of a return to this view of teaching; for example, through the introduction of various national strategies and more recently the revised National Curriculum (DfE., 2014) which commenced in September 2014. It could also be perceived that this is how teachers are trained. They have a set of Standards to meet. If they can provide evidence that they have met each standard, they can qualify. So ITE might become about survival and 'getting through' or 'making the grade'. The content of an ITE course and the school experience then may become about 'tips for teaching'. The apprenticeship approach can also be used in social constructivist pedagogy, but it is dependent on the expert's view of learning. A coalition Government advocated the 'craft of teaching' (DFE, 2010: online) but this has impacts longer term. An apprentice learns skills alongside the master craftsman. In teaching, this would mean a student teaching alongside a mentor. The problem lies in the next step. The skills learnt are from that one person, in that one context and therefore within narrow confines (Surman *et al.*, 2011). This in turn means that these teachers teach as they have been taught. They may not change and may repeat the same over again, because they know of no other way. This eventually stagnates the profession (Kincheloe, 1993).

Kincheloe (1993) notes that teaching is more complex than this and so ITE and learning to teach must be more complex than this (Harnett & Carr, 1995), Surman, *et al.*, 2010). The Government suggests further dictation of what should be included and a further change in the Standards for QTS (Department for Education, 2011). Kincheloe (1993) posits that teachers concerned with improving their thinking, connect with the school and have a vision of reform because they understand the people, culture, community and individuals involved. They also see school as a vehicle for intellectual and personal growth. Hopkins (1997) concurs, expressing that outstanding teachers care about their children and exemplary schools have a passion for learning that can be articulated by all parties. Therefore the role of ITE should be about creating outstanding, continually learning teachers. In order to do this, an alternative approach to the ones examined would need to be adopted. A new approach would need to promote reflective thinking and militate against a prescriptive approach.

Furlong *et al.*'s (2000) own study found that an agreed model across teacher education providers was that of reflective practice so that interconnections between theory and practice could be made. As Moore (2007) comments that student teachers in ITE should interrogate and critically reflect on children's learning; that is student teachers going beyond reflecting about teaching practice and considering the intra- as well and interpersonal relationships in the classroom and the appropriate pedagogy to support this. These reflections contextualise experiences and enable teachers to implement informed actions to enable the development of a rationale for practice (Hackett, 2001). Student teachers therefore, need an understanding of how children learn as a scaffold against which the student teacher can reflect on the intrapersonal plane. It is through this understanding of the learning process that appropriate pedagogy can be adopted. Without an understanding of how children learn, it is hard to see how appropriate pedagogy can be adopted in the classroom.

Learning teachers seek ways of knowing (Kincheloe, 1993). They question the nature of their own thinking and they have a readiness to change and develop their practice (Hopkins, 1997). In order to operate this way, these teachers understand the underpinning reasons why they practise in the way they do. They understand the pedagogy and then make critical decisions about what is right for

the learning of their children. It is hard to measure how a teacher has made critical judgements about children's learning, however it also means that there is no 'one-size fits all' approach to teaching, making it more difficult to measure as all schools and teachers could be operating in different ways. It means trusting teachers to make decisions and judgements, which in turn also means that ITE needs to be focussed on preparing student teachers to be able to make these critical judgements about their children's learning through developing the student teachers' understanding of pedagogy.

1.2.3 Partnerships and school-based training

Pre-1970 the universities were responsible for the education of teachers, from 1970 onwards there has been a growing emphasis on the school-based element. Student teachers, in whatever model of ITE or ITT are expected to spend more time in school, the model of partnerships between schools and the universities as well as the models of placement within courses needs to evolve. Schools and universities can have very different opinions on the views of professional knowledge that a student teacher may require and this needs careful balancing. McIntyre (1993) says that the ideal model of ITE is where both the university and the schools play to their strengths and offer a balance of theory and practice. Furlong *et al* (2000) support this by emphasising that schools can work separately in 'complementary partnership' or the partnership can be university led or the partnership can be 'collaborative' (*ibid*). In this latter case both schools and universities are committed to the development of training and expose student teachers to a variety of knowledge and expertise. This is the model on which the PGCE course in this study was devised. Figure 2, below is adapted from Schön (1987) and indicates the dual orientation of teacher education and the role of the school within it. Schön (*ibid*) emphasises that the mentor is the facilitator to the student teacher in this situation and as such should be supporting their reflections to develop their 'phenomenology of practice'.

University
sessions

Education - the
discipline of study
and professional
development

School-Based
Training (practice)

Discipline
orientated

Practice
orientated
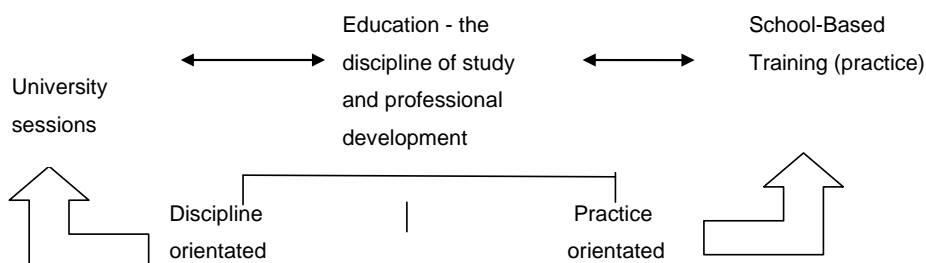
Figure 2 Dual orientation of teacher education and the role of the school within ITE (adapted from Schön, 1987)

1.2.4 Work-based Learning - a collaborative approach

Social constructivist theory (Vygotsky, 1978), by its very nature, implies a collaborative approach to learning (Carlson, 1999). It provides a framework for understanding the relationship between learning and teaching which is applicable to this project, both the work undertaken with in the project itself and with the project as part of the whole within Teacher Education. The essential elements here are the importance of reciprocal interactions (Wearmouth & Berryman, 2009); collaboration through dialogue, and seeing issues from multiple perspectives in order to develop new ideas. The mentor, and children, support the student teacher, through providing feedback on the sessions that the student teacher leads. Situated learning allows for collaboration with others within the community of practice.

Collaboration should be about adults and children in partnership. Children have shared ownership of the learning. They are the ones with 'insider knowledge' of their learning (Wearmouth & Berryman, 2009) so they are best placed to feedback on what their needs are and where they should go next. The difference is where the power lies (Wearmouth & Berryman, 2009). With this approach the children are at the centre of a 'community of learners' (Rogoff, Goodman-Turkanis & Bartlett, 2001). The other learners in this community are the student teacher and the mentor. The process is reciprocal. The learning is taking place in a social context. Learners bring their own understandings with them from their prior experiences which should be borne in mind. However, through dialogue a curriculum that is meaningful to all can be constructed enabling all participants to reflect on their learning, problem solve, express

opinions and offer suggestions (Rogoff, Goodman-Turkanis & Bartlett, 2001). Learners are expected to be active participants in their own learning (Wearmouth & Berryman, 2009, Rogoff, Goodman-Turkanis & Bartlett, 2001). This enables collaboration skills, collaboration becomes a resource in future learning thus creating increased task involvement and motivation (Matusov, Bell & Rogoff, 2002).

By working in this way student teachers will constantly have a need to be updating their knowledge as themes and dimensions may differ from original objectives. It is here that student teachers need to work alongside, and with, more expert others. These discussions facilitate their learning as a teacher. Learning is dynamic and roles within it change according to who is the more experienced learner at the time. An example would be the mentor learning about the student teacher and about how to mentor them and the student teacher learning about teaching as well as how to be mentored. Alternatively it could be the student teacher learning to teach and learning about the children, whilst the children are learning from the student teacher as well as feeding back to them about how they like to learn. This may be seen in a classroom community. Equally, the mentors' capability to scaffold the learning of the student to move them forward in the skills and understanding plays an integral role.

In working collaboratively in this way, elements of the notions of a community of practice can be seen. The focus of a community of practice is to negotiate meaning together (Wenger, 2008), in other words a social construction of knowledge and understanding. It includes an open process to identify and explore new interests and opportunities. It requires mutual relationships, which have a carefully understood focus in which all participants have a vested interest (Wenger, 2008). It also has roles and accountability, rules and procedures. Wenger (2008) further describes a community of practice as 'integrative' training: learning through participation, learning designed as needs arise with access to the right resources in situ.

Mentoring in school can be seen in a similar light as it is about the mentor and student teacher negotiating meaning, creating and developing knowledge and spreading information. Needs are identified and therefore new opportunities are developed to facilitate student teachers' learning. There is a shared goal of

moving student teachers towards being 'good' (however that may be defined) but also in constructing understanding of what 'good' means to both the mentors and student teachers. Rules and procedures are developed both from the requirements laid out by the university and Government but also by the school itself. Both parties have roles and accountability; the mentor must facilitate, broker if you will, the move for the student teacher to become embedded in the community.   In addition, there is access to resources in the form of teachers as they each hold a repository of status and experiences (Wenger, 2008).

The school provides the context for work-based learning (Brennan, 2005, Knight, Tait & Yorke, 2006). Work-based learning, is learning in the world of work that leads to accreditation (Brennan, 2005, Thurgate & Macgregor, 2009, Nixon *et al.*, 2006). In this instance it is a partnership between the University and the school (Nixon *et al.*, 2006, ESCalate, 2006). Schools have expertise in the pragmatics of teaching and learning which are useful to the learning of a student teacher (McIntyre & Hagger, 1992 cited in Williams *et al.*, 1997). The school is the context for the practice (Brennan, 2005, ESCalate, 2006) and most learning happens through the everyday practice (Teaching and Learning Research Programme, 2004). It is for this reason that the school experience placements on an ITE course should have flexibility (Lunenberg & Korhagen, 2007) in allowing for the development of the Professional Standards for QTS (Brennan, 2005, Knight, Tait & Yorke, 2006, ESCalate, 2006) and not restricting the development of the student teacher (Brennan, 2005, Edmonds, 2007).

In both the student teacher – child relationship, and the student teacher – mentor relationship, there is the exchanging of information, enabling growth, developing as the student teacher/ child develops and accept are that they are both learners and leaders of learning (Taylor, 2008). Through this, learning can be personalised (Brennan, 2005). It begins with establishing learning outcomes (Brennan, 2005, Goos & Moni, 2001) which need to be made explicit to all parties involved (Lunenberg & Korhagen, 2007). Whilst it is important for the student teacher and mentor to integrate the academic aspects into the professional context in order to preserve the 'graduateness' in the work-based environment (Brennan, 2005, Goos & Moni, 2001), it is important that a balance is achieved as working in this way is driven by process rather than content (Lunenberg & Korhagen, 2007). The same is true with children's learning; it is

the process of learning to learn that is important, not just the content, especially in a social constructivist model of learning.

Whilst undertaking the work-based placement element of the course, skills from the university-based element continue to be developed by the student. Throughout the placement, student teachers maintain reflections which develop their critical thoughts about the experiences they are having (Knight, Tait & Yorke, 2006, Lunenberg & Korhagen, 2007, Gibbs & Costley, 2006, Loughran & Berry, 2005), which may well have been supported through the mentoring discussions.

Within the work-based context, practice may be modelled (Edmonds, 2007, Goos & Moni, 2001, Loughran & Berry, 2005). However, it should not be assumed that learning for the student teacher will merely be transmitted through this modelling (Taylor, 2008), it must also be carefully analysed with the student teacher as to how it was taught and why it was taught in that way, as well as what was taught (Lunenberg & Korhagen, 2007, Loughran & Berry, 2005). This is developed through discourse, with the student teacher (learner) at the centre, (Gibbs & Costley, 2006). Nixon *et al* (2006) point out that one of the issues with work-based learning is creating a pedagogy with the learner at the centre (Lunenberg & Korhagen, 2007), taking account of their prior knowledge and building experiential learning and application of theory through practice (Thurgate & Macgregor, 2009) as this can be hard to achieve. Additionally, there can be difficulty in engaging partner schools without whom the elements of work-based learning and community of practice cannot be enacted in the same way. Moreover, there is a fine balancing act between the mentor assessing the student teacher and ensuring a quality experience (this will be discussed later). Without all these key elements, some school-based training may well prove to be less effective than others.

An integral element is to ensure that the level of reflection completed by the student teacher is of a high quality to ensure progression in their learning. Yorke (2005) argues that as professionals develop their autonomy, reflection and meta-learning (learning about how they learn) should be greater priorities. During a Teacher Education course assessment can be focussed towards promoting further learning and/or certifying achievements, as such tensions can arise between the formative and summative nature of feedback and possible

varying expectations of the different parties (Yorke, 2005). Yorke (2005) goes on to warn that competence is socially constructed and is therefore not value-free and advocates criterion-referenced assessment so that the intention is clearly specified and any 'fuzziness' between assessors is minimised. Further, Yorke (2005) makes clear that there is no one method of assessment in work-based learning that works, and therefore, it is important to triangulate information from a variety of sources over a period of time. This aspect will be important in developing the tools for collecting the research data in this project.

1.2.5 Student teachers and mentors

A definition of the relationship between mentor and student can be traced back as far as the Ancient Greeks as Homer's Odyssey refers to the role as having facets which include guide and teacher (Bleach, 1999). The story tells of Mentor being Odysseus' son's trusted adviser and wise figure, whilst Odysseus was away and during this time how Mentor acted as a guide and teacher to the boy, Telemachus. Actually it was Athene, disguised as Mentor, who gave most of the guidance through dictating the actions that Telemachus should take (Cochrane-Smith & Paris, 1994). Later, in the 16th and 19th centuries mentoring became associated with the idea of apprenticeship (Bleach, 1999); a master craftsman from whom the protégé could learn the skills and values of a trade. In ITE terms this could be interpreted as mentors being role models of practice for the student teacher.

In order to answer the question 'how could a school-based mentor support the development of a student teacher's understanding about learning?' it is important to understand his/her role as it may be perceived. The mentor is appointed by the school to support the student teacher in their development and learning whilst they undertake their school-based training. Mentors vary in experience and interest in the role, and sometimes they are also the class-teacher of the children with which the student teacher is working. Effectiveness of the role of the mentor is limited by time as the role is additional to all other duties. It is up to the school to establish a way of working this is effective for all parties, and meets university/government requirements. There are various models in place in the partnership of schools that are utilised for this project. Mentors share practice with the student teachers following observations, through discussions. They also set targets on a weekly basis with the student teacher

and assess them by making judgements on their competency against the Standards. It is intended to be a collaborative relationship with the student teacher. Mentors are trained by the university in the notions of what mentoring is, as well and the minutiae of the course. The requirements of the increasingly integral role of mentoring is dictated in the course handbook by the university however, the expectations of a mentor by the university include facilitating the student teacher's learning experience.

As the learning theory and principles behind collaborative, work-based learning highlight, the relationship between the student teachers and their mentor is integral to the success of this type of learning. Here the mentor can be seen as the more knowledgeable other (MKO) in line with the social constructivist view of learning (discussed later). Children's feedback could also be providing information about learning to the student teacher in their role as 'experts' in their learning (discussed later). In whichever example, successful, collaborative learning in the school setting is reliant on the relationship between the student teacher and those they are working alongside.

Mentoring became more formalised with the introduction of the 1992 Framework for ITE (Jones & Straker, 2006, Hobson, 2002, Whitehead & Fitzgerald, 2004) and was developed further with the introduction of the DfE Standards for QTS in 1998. The benefits to those who undertake the mentoring is primarily three-fold; personal satisfaction, recognition through continuing professional development (CPD) (Kerry & Farrow, 1996), and the opportunity to 'give something back' to the teaching community from which they themselves have grown (Whitehead & Fitzgerald, 2004). Additionally, through undertaking the role of a mentor, it has been shown that the mentors own understanding of their practice is enhanced as they make explicit the links between the theory and the practice to the student teachers (Pitfield & Morrison, 2009, Jones, Reid & Bevins, 1997). This ongoing development means that the mentor learns with their student teacher, with their skill levels altering when unfamiliar circumstances arise (Orland-Barak & Yinon, 2005). Ultimately a reconstruction of the mentor's understanding of learning may occur (Hobson, 2002, Orland-Barak & Yinon, 2005). This can also be likened to the children talking about their own learning through the process of providing feedback to the student teacher. As they do, so their understanding of their learning develops (Mercer, 2008). Feedback from children to student

teacher can therefore be as valuable to the child as the student teacher and perpetuates the social constructivist model of learning.

There are however, tensions. As well as the competency of the mentor and student teacher, the success of a mentoring relationship is dependent upon other factors, for example the mentor's commitment and training, needs of the student teacher or the number of students being mentored at that time (Kwan & Lopez-Real, 2005, Brooks, 2000). The relationship with the student teacher is complex because the mentor is the MKO in this situation which carries with it a power dimension of wanting the 'right' answer, or being expected to be able to provide it. Additionally, the student teacher will have their agenda. It is therefore important that the language used between the two to construct knowledge is shared, leading to a joint achievement (Mercer, 2008).

The role of a mentor is multi-faceted (Orland-Barak & Yinon, 2005, Pollard, 2002, Ballantyne & Hansford, 1995) and therefore complicated. There are professional skills required to do the role as well as personal attributes of the mentor. One aspect is the sharing of knowledge about practices with the student teacher (Gibb, 1994); this is particularly influential early in school experience placements (Ballantyne & Hansford, 1995) although it may encourage student teachers mimic the mentor in practice (Pitfield & Morrison, 2009, Orland-Barak & Yinon, 2005, Ballantyne & Hansford, 1995). This apprenticeship approach is useful in certain instances, but should not be relied upon as the only method for student teachers to learn (Jones, Reid & Bevins, 1997, Gay & Stephenson, 1998). Additionally, mentors provide feedback (Kerry & Farrow, 1996, Jones & Straker, 2006, Hobson, 2002, Jones, Reid & Bevins, 1997, Hobson, 2009) which should be clear and consistent (Jones & Straker, 2006, Snow-Gerano, 2009). They are both a guide (Jones, Reid & Bevins, 1997) and a challenger (Orland-Barak & Yinon, 2005, Ballantyne & Hansford, 1995); observer (Kerry & Farrow, 1996, Jones & Straker, 2006, Jones, Reid & Bevins, 1997) and empathiser (Jones & Straker, 2006, Gay & Stephenson, 1998). Indeed the children also take on these qualities when acting as the MKO to the student teacher and providing them with feedback about their learning. These are the conflicting aspects of the role as the mentor is both coach and assessor of the student teacher (Jones & Straker, 2006, Orland-Barak & Yinon, 2005, Gay & Stephenson, 1998, Smith & West-Burnham, 1993). It can therefore

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be difficult to be discussing critical feedback in one moment and the next be openly in discussion scaffolding the student teacher's understanding of children's learning. Yorke (2005) also warns against the varying levels of power that may be perceived to be wielded by the mentor depending on which of the roles that they are doing. The key element to success relies on both the mentor and student teacher having a strong professional relationship that understands these dichotomies (Whitehead & Fitzgerald, 2004, Snow-Gerano, 2009). It is essential that the mentor is able to 'play' the two contrasting roles of assessor and supporter and be able to manage to flex between them to make the relationship successful. In summary, the mentor's success depends upon the mentor working in collaboration with their student teacher with a clear dedication to learning (Snow-Gerano, 2009).

Student teacher progress within the school placement is dependent also on the mentor's understanding of what the student needs to learn next (Orland-Barak & Yinon, 2005), but more importantly how they will learn it (Gay & Stephenson, 1998). The placement experience offers a variety of opportunities;

- first-hand constructivist style of learning (Bleach, 1999, Snow-Gerano, 2009) contextualised within a school setting (Kerry & Farrow, 1996);
- scaffolded learning experiences (Bleach, 1999, Hobson, 2002, Ballantyne & Hansford, 1995, Pask & Joy, 2007, Calderhead & Gates, 1993b) by more experienced others teachers/mentors, to move student teachers towards autonomy (Kwan & Lopez-Real, 2005, Gay & Stephenson, 1998)
- discussion and work with teachers who are expert in the practices of the community as reflective, competent and well-informed teachers.

An essential element in making this a success is to ensure that the mentor guides the student teacher's reflections (Jones & Straker, 2006, Pitfield & Morrison, 2009, Orland-Barak & Yinon, 2005, Kwan & Lopez-Real, 2005, Smith & West-Burnham, 1993, Forsbach-Rothman, 2007). This requires a more dialogic approach (Pitfield & Morrison, 2009, Ballantyne & Hansford, 1995, Pask & Joy, 2007) whereby talk is used to question and challenge the student teacher's thinking in order to move them forward in their understanding because it supports the construction or co-construction of knowledge.

Mentoring is a two-way process (Whitehead & Fitzgerald, 2004, Forsbach-Rothman, 2007, Association of Teacher Educators , 2007). It is a collaborative and collegial way of working (Whitehead & Fitzgerald, 2004, Pitfield & Morrison, 2009, Pollard, 2002, Hobson, 2009) which is active and persistent (Bleach, 1999, Pollard, 2002) and which becomes increasingly voluntary and equal over time (Pollard, 2002). Perhaps it is better to think that mentoring is not linear in its stages of development but rather an intertwined 'web of development' for all parties involved (Snow-Gerano, 2009) of how a school-based mentor might support the development of a student teacher's understanding about learning.

1.2.6 The reflective teacher

The ultimate goal of ITE is that student teachers should develop into 'fully-fledged' teachers. One aspect of this, in the context of the PGCE course in this study, is for student teachers to develop the skills of reflective practice. This is intended to enable student teachers to make connections on the intrapersonal plane, between classroom pedagogy and the theories associated with how children learn. In the current study, the student teachers were asked to reflect on their own practice and these scaffolded reflections were interpreted as part of the data set. Therefore considering possible elements of teachers' reflections was important.

There is no one definition of what it means to be a reflective teacher. Ghaye & Ghaye (1998) identify that from their discussions with practising teachers, definitions ranged from 'navel gazing' to 'helping you see what you would/ would not do again.' Dewey (1964) states that it is 'a way of being a teacher' as it directs a teacher's activities by systematic preparations following the curiosity of the teacher leading to them making connections in ideas. He suggests that it is ordered and logical. Bolton (2010) concurs that it is a constituent part of being a teacher, and both Calderhead & Gates (1993) and Ghaye & Ghaye (1998) recognise that there are ordered processes of analysis, discussion and evaluation that are utilised in the reflective process. Boud (2006) describes the process of reflection as a way of making meaning of experiences. Proctor (1993), however, demands that reflection must do more by reviewing experiences critically to build new knowledge which is then used in new situations. Critical thinking requires capacity as well as an openness and willingness to reflect (Jarvis *et al.*, 2014). In order to achieve this, Dewey (1964)

sees reflection as a 'mental habit' of 'conversing with the situation' (Schön, 1991) to encourage thought. He posits that reflection is not about achieving immediate proficiency. He describes the process of reflection as encouraging growth rather than improvement; implying a more developmental approach over time. Swim (2007) concurs that reflective teachers are active at growing professionally. Schön (1991) describes this growth as building a repertoire of examples, solutions and understandings as a professional which can lead to transformations in classrooms (Jarvis *et al.*, 2014). However, Moon (2000) recognises that sometimes being reflective can be unconscious as well as conscious and likens this to identifying a problem, but the 'sleeping on it' before acting or having a 'eureka' moment of clarity. It can be seen as cyclical and continuous (Jarvis *et al.*, 2014). In other words, some reflection may not be process driven and yet may lead to the same developmental growth.

La Boskey (1993) makes the point that the transformation that occurs as a consequence of professional reflection should also include development of pedagogical thinking. This notion of connecting reflections to theories and ideologies is widely supported. McIntyre (1993) supposes that this is one way of understanding the experience from other people's perspectives and as such can be a useful guide to practice. Indeed, without it teachers may end up blindly experimenting (Dewey, 1964) rather than rationalising why and how to proceed in certain ways. Reflection here is a means to connect the 'what' teachers do with 'how' and 'why' they do it. The connection is to the underpinning pedagogy supporting their practice. In addition, both Dewey (1964) and Swim (2007) warn against teaching professionals who succumb to standardised practice and data without actually critically reflecting upon them, connecting to theory and making rationalised decisions for their practice in the learning of their children.

There are many influencing factors on the effectiveness of reflection in practice. The most significant of these is having the capacity to reflect (Boud, 2006, Schön, 1991, Moon, 2000, Boud, Cressey & Docherty, 2006). Dewey (1964) talks of the need to approach reflection with 'open-mindedness', wholeheartedness and responsibility'; without the teacher being predisposed, or 'ready', to reflect, he argues that the process cannot be successful. Bolton (2010) too acknowledges the importance of the state of mind of the individual to reflect. Whilst not refuting this key aspect, both Ghaye & Ghaye (1998) and

Zwozdiak-Myers (2012) insist that capacity to reflect successfully should also take into account 'influencing factors' (La Boskey, 1993) such as beliefs and values, internal and external impetuses, context (including time, structure and location) as well as the emotions involved.   A natural response to a surprise or threat is a human's fight or flight reflex, in turn this physical or emotional response may influence the ability to reflect (Jones *et al*, 2007).   One external impetus for a reflective activity may be that it is part of a formal professional development exercise and as such may be assessed. Appleby (2001) warns strongly against this as reflection cannot be measured against standardised norms. Bolton (2010) takes a more pragmatic approach involving being very clear about whether it is the process or the product of the reflection that is being assessed, providing clear criteria and support and establishing the importance of criticality as part of the objective.

Taking Bolton's (2010) notion of support during the process of reflection of this kind, it is clear that a mentor in a school where a student teacher is learning has a role to play in supporting the student teacher to reflect as a means of further developing their practice. Bolton *(ibid.)* describes this as helping the student teacher to step outside the box and look, critique and empathise together. The 'learning-ful' conversation (Swanwick *et al.*, 2014) that is had between mentor and student teacher in this capacity is to support and guide the student teacher towards autonomy as a practitioner (Swim, 2007, Zwozdiak-Myers, 2012). Mentors in this situation can be thought of more broadly than the more experienced teacher working alongside the student teacher. The relationship should be built on mutual trust and agency (Jarvis, Dickerson & Stockwell, 2013). Zwozdiak-Myers (2012) advocates the use of children's voice as an alternative window on the experience which is being reflected on by the student teacher. Swanwick *et al*. (2014) state that a student teacher in their study found that listening to children's feedback enabled their reflections and use the feedback to plan for learning as a result. Further, both Boud (2006) and Appleby (2001) suggest that the mentor here is supporting the student teacher to operate in a community of practice (Wenger, 2008) through considering other perspectives, albeit, they acknowledge, that the reflections are centred on the dynamics between individuals rather than the group. What is clear is that the principles of social constructivist learning theory may be enacted here if the mentor (as MKO) guides the student teacher through their learning and

development. The processes of reflecting individually (on the intrapersonal plane) and with the MKO in the form of the mentor (on the interpersonal plane) are explicit. Examples of reflective activities associated with each of these planes may include goal setting, discussion around practice possibilities with the mentor – interpersonal; and internalisation and reconstruction of practice – intrapersonal. Ultimately, this intrapersonal reconstruction can be seen as the student teacher enacting metacognitive practices in learning about learning to become a teacher – knowing what to do and how, when and why to deploy different strategies (Woolfolk, Hughes & Walkup, 2008). Further student teachers should develop an understanding about teaching and their responsibilities within it (Jarvis, Dickerson & Stockwell, 2013). McGregor (2007) advocates that structured questioning to develop this level of reflection may be necessary in order to scaffold the student teacher's thinking. Integral to the success of the mentor as the MKO scaffolding learning with the student teachers is the mentor being fully conversant with, and sympathetic to, the social constructivist view of the learning process; understanding its implications for supporting student teachers.

One model that could be adopted to guide the reflections of a student teacher, is that of Gibbs (1988) who provides clear steps to guide the reflection (describe, feelings, evaluate, analysis, conclude, action plan). This scaffolding was an important consideration in the construction of the tools for data collection during the research.

1.3 Assessing student teachers' understanding of learning

1.3.1 Content of and assessment in ITE

Part of the data collection in the current study was dependent on assessment of student teachers on their ITE course. The criteria for ITE are set out in the document *"Statutory guidance for accredited Initial Teacher Training (ITT) providers in England"* (NCTL, 2014). It contains criteria about the entry to, managing of and quality assuring of ITE providers. There is no specific guidance on the curriculum for ITE. However, the Teachers' Standards (DfE., 2012) could be seen as the curriculum for ITE as it is these which student teachers' must attain before they leave training. In Teacher Standard two (promote good progress and outcomes for pupils) there is a statement that

teachers should have knowledge and understanding of how children learn. The remaining Standards address aspects associated with learning and teaching, but there is no further mention of the understanding of pedagogy. In Teacher Standard four, teachers are required to reflect on the effectiveness lessons of their lessons, but not on their pedagogical approach.

The independent committee, commissioned by the Government in consultation with others in the profession recommended that these were a baseline for expectations for recommendation for QTS when they were introduced in 2012. Although the recommendations have not yet been directed as statutory, Carter's (2015) most recent review of ITE suggested to the Government that the curriculum for ITE should include a focus on pupil outcomes (progress, achievement, wellbeing), the Standards should be the common expectations of knowledge and understanding for ITE, gaps in NQT subject knowledge should be prioritised (behaviour management, assessment, differentiation for SEND, addressing common misconceptions) and interpreting research critically to use findings in practice.

This analysis of current criteria for teacher education points towards a competence based view of teaching. That is one that is associated with attaining the set of criteria (the Teachers' Standards in this case) rather than a reflective model of learning which focuses on the development of student teachers' understanding of children's learning. The criteria for assessment of ITE providers by Ofsted (2014) measures high quality training as enabling student teachers to demonstrate their understanding of how children learn through their teaching. However, like the Teachers' Standards, the inspection criteria makes no further mention of the understanding of pedagogy, nor the student teachers' reflections about how children learn and its impact on practice (for example curricula design, learning strategies employed, progress of individual children, and so on).

1.3.2 The purpose of assessment

Assessment is an integral part of learning. *"Learning is driven by what teachers and pupils do in classrooms"* (Black & Wiliam, 1988):1) and so *"teachers need to know about their pupils' progress and difficulties with learning so that they can adapt their work to meet their needs" (ibid.:2).* The purpose of assessment therefore *"refers to all those activities undertaken by teachers which provides*

information to be used as feedback to modify the teaching and learning activities in which they are engaged" (ibid.:2). This definition of assessment is currently dominated by *"the political commitment to external testing" (ibid.:7).* The two are in juxtaposition; the first focuses on the processes associated with effective learning, the latter adopts a managerial role focused towards competition and league tables through grades. This stance is further confused by the individual teacher's beliefs about learning, for example behaviourist or constructivist; and their beliefs about their learners' potentials to learn (*"fixed or untapped", ibid.:13-14).* A teacher with a behaviourist philosophy to their teaching, where transmission of knowledge to learners is the approach to learning in their classroom, may adopt the belief that their learners are either able or not and therefore will achieve or not. This sits well with the notion of assessment being associated with grades and league tables. In contrast a teacher with constructivist pedagogy believes that learning should be interactive and learners should have opportunities to construct understanding for themselves through encountering situations and tasks as experiences from which to learn. Each learner, in this view of learning has potential which is as yet, 'untapped'. This philosophy sits closely with the notion of assessment being a process in support of effective learning. In this study the purpose of assessment is accepted as a process in support of effective learning, but also with an awareness of the opposing view due to the nature of the political situation with regard to grades in ITE (discussed in light of the findings later).

1.3.3 Observation as an assessment tool

I realise that his section might well have been included in the methodology chapter, chapter three. However in this particular study the issue has been discussed in this chapter because it forms such an important part of the context of teacher education and Government requirements.

It is often claimed that observing is the most direct way of collecting important information about teaching (Praetorius, Lenske & Helmke, 2012) because this enables learning from directly observing social settings. From a socio-cultural perspective it is accepted that successful learning can best be achieved through social contexts, and contextualised social interactions such as observation and feedback, are fundamental to the acquisition of skills and knowledge (Berryman & Bishop, 2011). The feedback occurs directly between the observer and the

observed and discusses the evidence recorded in order to 'co-construct new directions in future teaching' (Berryman & Bishop, 2011). It is this feedback process from the observer to the observed which enables dialogic professional development to take place (Berryman & Bishop, 2011, Hill, Charalambous & Kraft, 2012) in order to improve teaching quality (Hill *et al.*, 2012) and thus result in improved learners' achievement (Praetorius, Lenske & Helmke, 2012). One issue related to observations is that the complexity of teaching cannot be adequately depicted (Praetorius, Lenske & Helmke, 2012).

There are many influencing factors in teaching which have some bearing on how an observation may be perceived by the observer. As Hill *et al.*, (2012) point out these can include the environment, curriculum, content, children and 'random variations' which they (*ibid.)* put down to events such as the children being aware of Sports Day that afternoon; so the context and population involved in the observation impact on the reliability of the outcome of the observation. Moreover, how the observation tool is used, interpreted and understood by the observer (Hill, Charalambous & Kraft, 2012) can be different from its intended design (Praetorius, Lenske & Helmke, 2012). Further the construction of the tool itself, for example the number of points (Hill, Charalambous & Kraft, 2012) on an observation scale may shape the views of the observer and therefore how they record their observations onto the tool. Additionally between observers, one may demonstrate bias, or observe the frequency of an event to be low, or score what they have seen very well, compared to another, who may have observed the exact opposite (Hill *et al.*, 2012). These disparities between observers can be as a result of their own experience and training in observations (Hill *et al.*, 2012) but could equally be due to the context, the population or the design of the observation tool. Also an observation is a 'snapshot' of what the observer has recorded at that moment in time (Praetorius, Lenske & Helmke, 2012). The trustworthiness of using observations to comment on teaching can be called into question.

There is no one reliable way to carry out observations to record information about teaching. However, the robustness of observation as a tool for recording teaching incidence can be enhanced by developing what Hill *et al.* (2012) describe as an 'observation system'. The first part of the system begins with training the observers in using the tool; specifying the number and length of

observations and developing the understanding of the observation's intentions. The next step is in the design of the observation instrument itself. Hill, Charalambous & Kraft (2012) emphasise the importance of quality instruments, trained observers and a robust scoring system. Further Berryman & Bishop (2011) advocate that the observation instrument itself should have 'face' and 'content' validity. Face validity is obtained by ensuring that the content of the tool is appropriate to the purpose of the tool. Content validity is, in Berryman & Bishop's (2011) opinion, associated with having developed the tool over time with expert feedback from experienced observers.   Any grading used should represent the quality of teaching so that the scores capture the characteristics of the teaching in that lesson. This may include reference to the Teachers' Standards, or the Ofsted requirements for ITE. This also implies that what has been identified as the focus area(s) for the observation have been clearly and unambiguously defined, and also generally agreed, as the areas that represent what constitutes 'quality' in teaching. The evidence noted should be observable from the actions and behaviours directly exerted and should correlate with the outcomes from the teaching that is the children's learning. These considerations ensure that the underlying construction of the observation tool measures what is intended (Hill *et al.*, 2012).

Secondly, the observation tool should be used 'in situ' to capture performance in the natural environment (Hill *et al.*, 2012). Finally, trustworthiness can be increased by incorporating more than one observer per lesson with Praetorius, Lenske & Helmke (2012) recommending four as an appropriate number in order to support personal learning. This process helps to establish inter-observer reliability. In developing an observation system, a consistent method should be applied which remonstrates against some of the challenges which an observation tool alone elicits.

1.3.4 Critiques of assessment of practice
There are issues with assessing student teachers in practice. One is that assessment is utilised to demonstrate accountability and quality by grading on a scale, so that consumers can make choices by about apparent quality of courses, student teachers and so on. Another is the reliability of the assessment process itself, in this case, grading observations of student teachers practice in classrooms.

Methods of assessing practice, such as that of student teachers in classrooms, are contested. The process of assessment by allocating grades applies socially relevant knowledge to make individuals comparable (Kalhoff, 2013), for example in the form of league tables. This means that grading an observation of a student teacher teaching in a classroom is influenced by the interpretations of the observer both on the observation itself and the grading scale used to assess it. The nature of a grading scale highlights the gaps between students and allows for them to be put into order, therefore assessment becomes about where individual students sit on a scale (Kalhoff, 2013, McClam & Sevier, 2010). Positions on this scale are how all parties, students, teachers, schools, ITE and so on, 'know each other' (McClam & Sevier, 2010, Foucault, 1991). The current 'neo-liberal' approach (Ball, 1994) depends on the demonstration of accountability. This can be exemplified through the notion that the student teachers are required to be positioned on a grading scale of one to four (outstanding, good, requires improvement, unsatisfactory) in order that their positions are established. Subsequently, these individual grades are collated and then the ITE provider is positioned on a scale as well. This can be seen as a results-driven approach to learning (Perryman, Maguire & Braun, 2011).

The nature of this approach is derived from the language of business (Kohn, 1999) and applied to education. 'Results' are intended to exemplify 'accountability' (Maguire, 1991) through validating the aptitude of individual students (Foucault, 1991) by indicating success or failure with grades (McClam & Sevier, 2010); the implication is that the higher the grade, the higher the quality. In an increasingly marketised field like ITE, where competition between providers is demonstrated through grades allocated, ITE moves away from 'E'ducation (ITE) and towards ITT ('T'raining) which, by definition, implies obtaining the required skills to complete the job as opposed to an ethos of learning about how learning and teaching takes place. To add to this the terms ITT and ITE are used interchangeably in the profession. There are a number of problems with this approach; for example, the danger of repeating observed pedagogy by the student teacher (good or bad), as well as the lack of critical interpretation of policy and practice by the student teacher.

The grades allocated to student teachers and ITE providers could be perceived as an effort to control a national profession (Foucault, 1991). The rhetoric around

the roles of HMI/Ofsted is to 'quality control' ITE (and all other levels of education). However, the grading may emphasise 'gaps' and it becomes more of a regulation and control role, ensuring that education at all levels becomes a policy issue (Maguire, 2011); thus the grading becomes seen from a 'disciplinary' perspective (Foucault, 1991). The quality has been displaced into a quantifiable element, the grading (Maguire, 1991). One major problem with this approach is that the demands as a result of trying to control education are continually changing (Ball, 2010) making the notion of grading as part of the assessment of quality 'slippery' at best.

When considering observations of teaching and learning in the classroom, there are also difficulties with grading what is observed. Even when the criteria for grading, and the grading itself appears to be explicit, the real intentions often remain hidden (Kalhoff, 2013). The process is idiosyncratic because it is dependent on the school and the characteristics of the observing teacher, and the observing teacher can be influenced by his/her knowledge of the student (Kalhoff, 2013). Inevitably, the teacher *"always evaluates their own performance as well as that of the student"* as pointed out by Kalhoff (2013: 102). In addition the 'task', this is what is observed, is often ambiguous and hard to interpret by the student (Pryor & Torrance, 2000). With this in mind the grade may not reflect the true nature of the achievement of the student.

1.4 Summary

In this chapter I have identified the broad historical and political landscape in which the University's PGCE course has been developed. A combination of personal and professional interests, joined together with this picture, provide a context for research into this area in order to contribute further to the development of the PGCE course and more widely teacher education.

Chapter 2 - Literature review

2.1 Introduction

In introducing this research project I wanted to establish a context in which the research was conducted in light of the relevant literature. This chapter includes literature which is related to the interlinking threads that run through the whole thesis: the overarching pedagogy and children's views about learning. The chapter begins with a discussion about social constructivist pedagogy which underpins the research including how this relates to the context of the study. The chapter continues with a review of the background to children's voice and concludes with consideration of one model for dialogic engagement in learning (Tharp & Gallimore's (1998), theory of assisted performance).

2.2 Pedagogy from a social constructivist perspective

2.2.1 The pedagogy underpinning the research

This research project is underpinned by social constructivist pedagogy (Vygotsky, 1978; Kozulin, 2003) as a pedagogical approach to learning and teaching. Learning can be considered to be an individual activity, focussed on knowledge acquisition. Social constructivism evidences the importance of socially constructing learning through concept formation with the teacher as the mediator (Vygotsky, 1978).

This socio-cultural perspective required the acquisition of psychological tools through understanding symbolic artefacts, including language, which, when internalised by the learner, enables mastery of psychological functions for example perception, memory and so on (Kozulin, 2003; Vygotsky, 1978). It is these tools and artefacts which enable understanding to be acquired by the learner. However, each culture's tools are different and therefore some way of understanding them is important (Kozulin, 2003). It is here that the notion of mediation is asserted. Mediation is provided by a tool, either a human mediator or an organised learning activity as advocated by Wood, Bruner & Ross (1976) in their notion of 'scaffolding'. The human mediator or 'More Knowledgeable Other' (MKO) provides security, encouragement, challenge, feedback, modelling, structuring, praise and critique thus enabling the learning to mediate their Zone of Proximal Development (ZPD). The aim is to allow the learner to ultimately

appropriate the function themselves. The process is ineffectual if this does not happen. In other words, the MKO fails to enable the learner to do more complex things than if they were left alone. From a social constructivist perspective, this mediation in the ZPD happens twice; first interpersonally (that is, with another person) and then intrapersonally (that is, with one's self in one's own head) (Kozulin, 2003). Kozulin, *et al.,* (2003) point out that these notions were taken further subsequent to the work of Vygotsky, for example by Rogoff (1995) and Feuerstein (1999). However their ideas are rooted in his thinking.

Kozulin (2003) further exemplifies this model with an example about maps; put simply, tell someone the capital of Italy is Rome or provide them with a tool, namely the key to the map for them to find the capital of Italy themselves. Without the mediation of an MKO to support with the interpretation of the key to the map, the tool is meaningless. It is after this interpersonal interaction that the learner can begin to move towards an intrapersonal function, thus appropriating the learning.

The human mediator bridges a 'gap' between what a learner can do alone and their learning potential. In social constructivist terms this 'gap' is the 'Zone of Proximal Development' (ZPD) (Kozulin, 2003). Chaiklin (2003, in Kozulin, *et al*) asserts that in the ZPD, it is the relationship between instruction and learning that is developed. Successful mediation in the ZPD will depend upon what the learner can do with the assistance offered, how the MKO and learner interact, as well as the readiness of the learner. An MKO may challenge but should avoid causing frustration or demotivation to the learner. Across cultures, the human and symbolic mediation needed to bridge the ZPD will vary depending on the values placed upon the function by that culture. It is important therefore to acknowledge the socio-cultural context in which learners learn.

The transition through the ZPD, Chaiklin (2003, in Kozulin *et al*) states, is not central to Vygotsky's work but does support his notions of psychological development and how the maturing functions progress from one state to another; namely, beginning with the child, to the change (learning activity), to the interaction in a social environment (MKO/ZPD) to internalisation (appropriation). Therefore in collaboration with an MKO the learner is able to do something which their level of psychological maturity would not have enabled them to complete on their own. The ZPD therefore is a theoretical basis for pedagogical interventions

(Chaiklin, 2008, in Kozulin *et al*). It should be acknowledged that at different times in different situations the size of the ZPD and the learner's position in it varies. The MKO may then adopt a variety of approaches to enable the learner to progress through the ZPD, including but not limited to:

- demonstrating how to solve a problem,
- watching to see if a problem can be completed by imitation,
- beginning to solve a problem and asking the learner to finish it,
- supporting cooperation between a more able peer and the learner,
- explaining to the learner how to solve the problem,
- questioning/analysing the problem for the learner (Chaiklin, 2003, in Kozulin *et al*).

These types of approaches provide for the co-construction of knowledge through dialogic enquiry Mahn (1999).

2.2.2 Learning theory in context

There are two aspects of learning around which learning should be considered for this project; the learning of children in the classroom, of which talk is a part, and the learning of student teachers, of which dialogue also plays a role (as discussed later). From a socially constructivist view of learning, children talk about their learning for the following possible reasons: to scaffold the student teachers' understanding about their teaching so that they can respond to children and develop their teaching as a result; developing their own understanding of their own learning; and to talk about with they are learning with and MKO (the student teacher), in order to scaffold their understanding and progress their learning. In other words this is a reciprocal learning and teaching relationship. The need for learners to work with others for support and to be part of a collaborative community is acknowledged (Eun, 2008, Carlson, 1999, Gillen, 2000, Quay, 2003, Desforges, 1995). A principle premise of social constructivist theory is that learning is a social process (Vygotsky, 1986), and that social interaction precedes cognition. A sense of one's own surroundings is made through speech and action, in tandem. Understanding is internalised through practical external activity initially, followed by interpersonal processes between people in the context with the learner and finally by the learner making intrapersonal cognitive changes and so moving forward (Vygotsky, 1978). An important aspect of this is demonstrated

in the notion of the Zone of Proximal Development (ZPD) (Quay, 2003, Mahn, 1999), as described above.

In ITE each student teacher, on teaching practice, has an assigned MKO in the classroom known as the mentor. Figure 3 (below) attempts to demonstrate how the dynamic concept of the ZPD might work in practice through a two-dimensional diagram. The left hand arrow shows that whilst the mentor (as the student teachers' MKO) scaffolds the learning of the student teacher through their ZPD, on an interpersonal plane by discussion, feedback, questioning, modelling and so on, so the student teacher can reflect and internalise their learning. At the same time the mentor is learning from the student teacher so the learning is reciprocal. In addition (right hand arrow), the student teacher uses interpersonal processes (as the children's MKO) to engage with the child's learning and scaffold them through their ZPD. At the same time the student teacher is learning about, and from the child and as such the learning relationship is reciprocal.

Mentor   Student Teacher

↕ ZPD   ↕ ZPD

Student Teacher   Child

Figure 3 Mentor - Student Teacher - Child Dynamics

Learning and development are interrelated. The ZPD is the distance between the actual development of the learner and what can be achieved in collaboration with the More Knowing Other (MKO) – Figure 3 (above) shows the MKO as the mentor, being the mentor, student teacher or child depending on the learning taking place. The learning in the ZPD today will be the actual development of the learner tomorrow (Vygotsky, 1978). This is particularly important when considering this project as the mentor is the student teacher's MKO scaffolding learning in the ZPD as the mentor being the more experienced other. The learning in the ZPD is negotiated in this instance through the student teacher/mentor discussions (Prawat, 1999) using mediation as a tool to transform the thinking of the student teacher (Eun, 2008). It is therefore essential that time is given to this process (Eun, 2008). Understanding is co-constructed within the context of the mentor and student teacher relationship (Prawat, 1999) and it is

therefore important that the student teacher is content within the context (Carlson, 1999) to allow their development to move forward. This facilitates an environment of readiness for learning. It could be perceived that the environment needs to be established in this way in order for the student teacher to feel most comfortable to learn. Social constructivist theory relies on the social interaction of all parties. It could therefore be significant that the relationship between mentor and student teacher provides a learning environment that satisfies needs in order to facilitate learning and elaborate his/her understanding. A conducive learning environment is important as through the mediation the mentor may challenge the student teacher's thinking through questioning (Guk & Kellogg, 2007) and this may be uncomfortable temporarily for the student teacher until the mediation has transformed his/her thinking has been transformed as a result of the mediation process. In addition, this could be applied to the student teacher and the children (discussed later).

The relationship between student teacher and mentor could be considered to be an apprenticeship (Hobson, 2002, Gay & Stephenson, 1998). Modelling by the mentor is the process here (Goos & Moni, 2001, Loughran & Berry, 2005). There is a danger that poor practice by the mentor may perpetuate poor practice in the student teacher (Desforges, 1995), thereby creating low quality teaching practice instead of the high quality reflective teachers required for the future. Modelling can be perceived as both constructivist and behaviourist in nature. Constructivists see modelling as demonstrating what could be and allowing the student teacher to find their own way, that is to construct their own understandings (active); whilst behaviourists use modelling to demonstrate how it should be, that is something to copy (passive). The constructivist view of modelling is further supported by the notion of the mentor as MKO facilitating the learning of a student teacher through their ZPD (Kozulin *et al.*, 2003).

Situated cognition is important (Desforges, 1995). This experiential aspect to teacher education is supported by the notions of constructivist theorists, for example Kolb (Westergaard, 2009) and Dewey (Parr, 2005/6), and connects to the idea that teachers should be learners in practice (Parr, 2005/6).   Learning occurs when it is embedded in a context; knowledge learned in context therefore becomes authentic. Within this context is social interaction or collaboration with others who are more expert. This is similar to a social constructivist notion of

learning through the ZPD (Kozulin *et al.*, 2003). Situated learning is concerned with 'learning as you do', making sense all the time; in other words the mind is actively making meaning; a constructivist view of learning. This is also true when considering the student teacher planning for the learning of children. The added dimension here, of working with a mentor through discussion about progress, may make the situated learning social constructivist in style with the school placement the context for work-based learning (Gibbs & Costley, 2006). This supports the approach of this study which is being viewed through socio-cultural lenses.

2.2.3 The place of dialogue in a social constructivist view of learning

The culture of a classroom involves language. Dewey (1910) suggested that language is a set of symbols which represent meaning. Each symbol makes meaning distinct and enables meaning to be transferred to others through talk. Education transforms language into an intellectual tool to convey and assist with knowledge *(ibid.).* Social constructivist thinking posits that language is a symbolic system which is employed as a psychological tool to support thinking (Kozulin *et al.*, 2003). Language is a means of representing events and things, and thought is internalised language (Kozulin *et al.*, 2003, Vygotsky, 1986). Language is the tool that supports and transforms thinking and understanding (mental functioning) so that ideas may be appropriated and reality constructed (Kozulin *et al.*, 2003). Language is used by individuals to express thinking on the intra- and inter-personal planes (Kozulin *et al.*, 2003). If this relationship between talk for learning and metacognitive processes is to be accepted, language becomes a teachers' foremost tool (Light & Littleton, 1999, Mercer & Littleton, 2007). Therefore, it is important to give time to discourse in a child's learning.

The traditions of many cultures are orated in many ways before ever being written (Alexander, 2001). Alexander's study *'Culture and Pedagogy'* (*ibid.*), found that in the United Kingdom language is viewed as a tool for social interaction as opposed to valuing language as a cognitive tool for learning, as in social constructivist pedagogy (Kozulin *et al.*, 2003). Macgrath (2000) advocates that using oral communication is a means of developing cooperative behaviour; a view which Fisher & Larkin (2008) develop to include its use across the curriculum rather than limiting it to a literacy remit. More recently, Littleton & Mercer (2013) support the view that spoken language should be used for people to think creatively together. Therefore, talk for learning should be regarded as good practice

(Alexander, 2010) and acknowledged as one way in which children construct knowledge.

If these principles are to be accepted, teachers should provide the opportunities for talk to happen. Alexander (2010) concurs with Littleton & Mercer's (2013) views in that rarely are problems tackled alone. Duffield *et al.* (2000) interviewed teenagers about their view of achievement in school. The teenager's views indicated that school was a means to an end that is, that they needed it to access employment or University in the future. This study showed that the predominant talk was about the culture of the school, for example bad teachers, timetable, homework and were not focused on using language of learning. Moreover, Fisher & Larkin's (2008) study asked the question 'When shouldn't you talk in school?' and the children's response was 'In lessons!' They found that only six out of thirty eight teachers (16%) advocated talk for learning strategies and as such only nine out of ninety eight children (9%) recognised that they learned from opportunities to talk. Alexander (2010) concurred with Fisher and Larkin *(ibid.)*, noting that there is a lower educational value placed on talk in the classroom due to the fact that because nothing is recorded, there is no 'evidence' of work. Therefore, stakeholders (assessment boards, parents, Ofsted and so on) are difficult to convince that learning has taken place. Additionally teachers may have to accept changes to their practice if children are to have 'meaning making voices' heard (Lyle, 2008), which could be a further limiting factor. Yet children are 'expert witnesses' to their learning who should therefore be heard (Flutter, 2007). In the classroom, if the teacher scaffolds children's learning with a framework of meta-language, the children are better able to think about and describe their learning (Light & Littleton, 1999).

Thinking aloud which, as Mercer & Hodgkinson (2008) note was conceptualised by Barnes in the 1970s, is one way that a person's thoughts can be represented to another person (McGregor, 2007), (others being through body language, signs and gestures and so on). The principle of this approach is that talk between children enables clarification of understanding through articulation on the interpersonal plane. The assumption is made that the peer who is in role as the more knowledgeable other, is in fact more knowledgeable. Through this relationship the child articulates his/her own thinking on the intrapersonal plane. In addition the support offered to the peer in the sharing of ideas in this way

scaffolds the learning of the other. The process of thinking aloud not only helps connect ideas, but it also provides evidence to others to build their understanding of children's thinking about their learning (Smith, 2010). In furthering thinking, a learner experiences educational success *(ibid.)*. From a social constructivist perspective, these processes reflect the interpersonal and intrapersonal dimensions (Kozulin *et al.*, 2003); simply 'doing, talking, thinking, inter-understanding' (McGregor, 2007). The child articulates on the interpersonal plane their thinking as a scaffold to the other child's learning but also as a means of clarifying their own understanding with another, thus developing inter-understanding. The transformation in one's own thinking occurs therefore when there is a connection between the talk for learning on the interpersonal plane and the reflection on the intrapersonal plane (Light & Littleton, 1999).

Important considerations for talk in the classroom are the quality, content and dynamics of the talk (Alexander, 2010). This is what Alexander describes as dialogic teaching *(ibid)*. It could be seen that children frequently interact in classrooms but rarely do they interthink (Mercer & Littleton, 2007). Littleton & Mercer (2013) further agree and advocate the notion of exploratory talk, espoused by Barnes. The notion of exploratory talk includes questioning and challenging between participants, sharing information and actively listening in an environment of trust and mutual respect with a consensus of opinion reached at the end. Littleton & Mercer (2013) describe this level of talk as enabling interthinking *(ibid.);* that is learners talking collaboratively together. The teacher's role in these experiences is to model and facilitate the talk and therefore the learning taking place. Child-adult interactions for learning appear to be less important in Piaget's work as he was concerned about possible compliance on the children's part owing to their perceived authority of the teacher (Light & Littleton, 1999). From a social constructivist perspective this role is that of the MKO, who through these exchanges, scaffolds the learners' journey through their ZPD (Kozulin *et al.*, 2003).

Children require support structures to enable their thinking (McGregor, 2007). These structures can be conceptualised as scaffolds (Wood, Bruner & Ross, 1976). Scaffolding with the use of meta-language can help them talk effectively about their learning (McGregor, 2007, Mercer & Sams, 2006, Teaching and Learning Research Programme, 2004). In many instances in classrooms the

scaffolder can be the teacher as the MKO. Here the role is to reinforce learning, model ideas and maintain motivation on the task (Mercer & Littleton, 2007). The scaffold can be, for example, a framework designed to guide the talk for learning, such as a scaffold of prompts which directs thinking and discussion. The 'Talk for Writing' project (DCSF., 2008), introduced the notion of talking/speaking frames. These were prompts and sentence starters for children to use and then add their own ideas to complete the sentence. Kagan & Kagan (2009) introduced the idea that the scaffold was provided by a peer. Their notion of using a partner peer to share thinking with was adopted in the Primary National Strategies (DCSF., 2009) in the form of 'talk partners'. Their notion was that children should have time to think, then share with a peer, before sharing more widely with the whole class or the teacher. This notion is underpinned by social constructivist notions of the interpersonal and intrapersonal planes and that learners need opportunities to develop in both of these in order to move towards autonomy (Kozulin *et al.*, 2003). The talk for learning on the interpersonal plane is thinking aloud and when shared with a group this is a way of working together to come to understand ideas and to reflect on how and what has been learned (Taylor & Littleton, 2006).

Examples of scaffolding structures that others have found useful are 'Concept Cartoons' (Keough, 2000, cited by Smith, 2010) and 'Thinking Hats' by Edward De Bono (1985, cited by Smith, 2010). In terms of collecting data, several researchers have used scaffolds to support the talk of children to elicit information about their learning. The work of the Teaching and Learning Research Programme (2004) used questions to prompt children to respond. An additional strategy used by McCallum, Hargreaves & Gipps (2000) was to provide children with a set of statements which they sorted into an order of importance to them and then justify orally why they created the order in a particular way. This was a closed exercise in that there was no opportunity to add any additional statements of which the children may have thought. However, the statements were structured in child friendly language in order that the children could access them. In addition they were written in such a way that not only represented the things that children may come across in learning activities, for example, the teacher stands at the front, but also that the approach was underpinned by learning theory for example, the teacher standing at the front represented a transmission of facts.

A number of researchers have used scaffolds to support the articulation of children's thinking. An example of this is the more open approach adopted by Hopkins (2008). The idea was that further probing beyond the initial questions posed might be necessary in order to get to the children's thinking. Hopkins adapted a tool called the 'Ishikawa' (Turner, 2002 cited in Hopkins, 2008). This was a fishbone structure chosen to engage children's interest as well as to annotate their responses. This is shown in the figure 4 below.
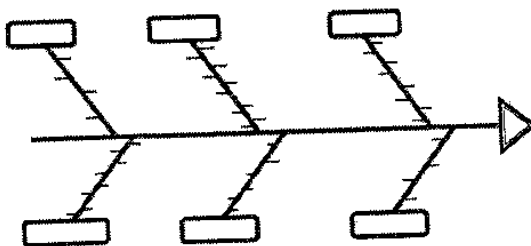
Figure 4 Ishikawa fish bone tool (Hopkins, 2008)

Each 'bone' on the fish carried a particular theme for questioning the children about their learning that would provide potentially meaningful insights into their thinking about the classroom and were rooted in research by McCallum, Hargreaves & Gipps (2000), McIntyre, Pedder & Rudduck (2005) and Macbeath, Frost & Pedder (2009) who were interested in eliciting information through listening to children's voices (Macbeath, Frost & Pedder, 2009). The themes included learning activities, the teachers, and other children and so on. The themes were focused around a key research question, for example, "What makes lessons enjoyable?" The themes on the bones then provided themes for analysis. Some of these supports for children's thinking about their learning have been integrated into this research in the classroom.

2.2.4 The definition of scaffolding

The notion of scaffolding is integral to this research and as such a rigorous definition is required. Scaffolding originates from the work of Wood, Bruner & Ross (1976) who posit that it is the cognitive support required by, and tailored to each learner which is gradually withdrawn over time until learning is transferred as the learner becomes autonomous. In this scenario the teacher mediates, or scaffolds, the learning (Warwick et al., 2010) by providing the necessary cognitive

support through dialogue and the way the task is set up. A social constructivist view of learning mirrors this idea with the MKO scaffolding/mediating learning on the inter- and intra-personal planes using dialogue before learning is internalised and automatised (Vygotsky, 1978, Kozulin et al., 2003).

More recently, Warwick, Mercer & Kershner (2013) have suggested that there are two types of scaffolding which a teacher may use to mediate learning; direct and indirect scaffolding. Direct scaffolding is as suggested in the original definition by Wood, Bruner & Ross (1976) (above). However, indirect scaffolding is the result of the vicarious influence of the teacher (Warwick et al., 2010). This is a resource or task with restricted freedoms which is provided by the teacher to allow the learner to concentrate of fewer variables thus enabling a deeper connection with, or interpretation of the task. Again this aligns with a social constructivist view of learning as these indirect or vicarious scaffolds are cultural tools that is, artefacts which mediate learning (Kozulin et al., 2003). The teacher is not absent from the process (Warwick et al., 2010), but rather mediates learning through cultural artefacts thus their presence is vicarious.

Both direct and indirect forms of scaffolding help learners to apply frames of reference that they are inexperienced at applying (Mercer, 2008). In doing so a shared dialogic space is created which promotes the active construction of learning and learner agency (Warwick et al., 2010). Both the MKO (direct scaffolding) and cultural artefacts (indirect scaffolding) are used in this research project and as such the term scaffolding represents both direct and indirect mediation by the teacher of the learning. Therefore scaffolding refers to the various ways in which a teacher supports cognitive and meta-cognitive activity which engages learners in learning (Warwick et al., 2010). Further this reflects the way that the student teachers in this project are being encouraged to think about learning that is, the importance of mediation in children's collaborative learning (a social constructivist view of learning). In doing so there is clear intention to scaffold talk for learning, for all the participants in this project (Warwick et al., 2010).

2.3 Children's voice

2.3.1 Background to children's voice

Rudduck & Fielding (2006) posit that there are three Head Teachers with a passion for democracy to whom the beginnings of children's voice could be attributed: Badley (1890), Dent (1920) and Bloom (1940). More recently a catalyst for children's voice (Flutter, 2007) has been the 1989 United Nations Children's Rights Memorandum, namely article 12. This was signed by the UK in 1990 and ratified in 1991 for introduction in 1992, which was subsequently enacted through Section 176 of the Education Act 2002. The rhetoric suggests that its principles are embedded in the Every Child Matters (DCSF & UNICEF, 2009: online) agenda which forms the principles of the Children's Act 2004. The specific areas of the Act are 'Enjoy and Achieve' and 'Make a positive contribution'. These imply that through the children attaining in learning and being involved in supporting the school community, their voices can be utilised as a tool for improvement. As a result it is suggested that children have a right to say what they think about decisions which may affect them. Adults therefore should be encouraged to listen and involve children in decision making appropriately, thus preparing children to be democratic participants in society who are motivated to engage. This political move encouraged a view that the whole child be considered, with the rhetoric suggesting to put children at the heart of their world and enabling the whole of the Children's Workforce to come together. The rhetoric further suggested children being included in all aspects of their life – education, socially, culturally, emotionally (Whitty & Wisby, 2007).

In more recent times, Flutter (2007) suggested that children's voice has stemmed from the school improvement agenda as enacted by the Ofsted regime, a 'top down' approach in education. The current statutory guidance for schools around children's views reflects the notions discussed above and was reviewed in January 2014 (DfE, *'Listening to and involving children and young people'*). Prior to this there had been a number of Government consultations including children's views including in 2009 issues surrounding play, transitions and aspirations and in 2012 issues of wellbeing. Interestingly the concept of children having a view about their learning and teaching is not explicitly part of the thinking. Over the past three years (2012 to 2015) the Department for Education (DfE), Ofsted and the National College School Leadership (NCSL) have published eight reports

specifically highlighting pupil voice. The majority of reports, such as the statutory guidance from the (DfE., 2014), were focused towards children being 'active participants in a democratic society', rather than considering children's views about their learning. Additionally, Ofsted (March 2015, and July 2013) produced example material of 'good practice' with pupil voice, which focused on practice found in Further Education settings or non-standard school settings for example, prison schooling or children's centres. The practice highlighted however, involved young people making decisions about their learning; for example curriculum planning, understanding how people learn, and seeing their feedback about their learning needs acted upon.

2.3.2 The development of research studies on dialogic engagement in learning

Alexander (2010) describes talk in the classroom as having a "sad history of official initiatives" *(ibid.:18).* For example the Bullock report (1975) introduced a focus on using "Language across the Curriculum" and this notion was included in the National Curriculum in 1988 (revised latterly, DfEE., 1999). In 1991 the Government introduced "The National Oracy Project" which was the basis for the talk included in the National Literacy Strategy (DfEE., 1998). This Strategy was intended to develop the quality of literacy in primary classrooms but the focus became more on the organisation of the lessons and not the quality of talk (Alexander, 2010). Mercer's work on "Thinking Together" (Mercer, 1999) was influential in the development of "Speaking, Listening, Learning" (DfEE, 2002), and Alexander's work with the "Talk for Learning" project (2003), were both encapsulated in the National Strategy documents (DfES, 2003). Subsequently, Alexander's (2010) dialogic teaching work was influential in the shaping of "Talk for Writing" project (DCSF, 2008) which was introduced through a series of workshops to teachers by the writer Pie Corbett, and included the notion of scaffolds to direct talk, referred to as 'talking frames' or 'speaking frames'. At the same time, the Bercow Report (DCSF, 2008) highlighted the lack of language that children from poorer social backgrounds came across; an influencing factor on their success in school. These findings have been further supported by Alexander (2010), Littleton & Mercer (2013), Fisher & Larkin (2008) and the Rose Review (DCSF, 2009). One possible problem with this approach may have been the quantity of discrete initiatives, with no resourcing to ensure that they were sustained in schools, which in turn may have resulted in a 'watered down' version of each remaining in schools without any having lasting pedagogic impact. This

approach may not compatible with the overall thrust of the Government's approach as the paradigms are incompatible; that is a focus on targets and meeting standards overrides the importance of understanding learning.

2.3.3 One research project into children's voice

Rudduck, Flutter *et al.*'s work with the Teaching and Learning Research Programme from 2001 to 2004 focused on a range of schools. It included eleven secondary schools, five primaries and one which covered both age phases. In addition, they received responses to questionnaires from twenty nine secondary schools and six primaries. This is important because this research project is focused only on the primary age phase. The reliability of their study could be questioned on two counts (Noyes, 2005). Firstly that many of their findings were the result of funded projects that offered incentives to schools to participate and therefore this may have led to schools implementing the approaches rather than becoming vested in the approach itself; the second being that the approach itself could be misinterpreted by schools as a means to critique Government policy with which they were disaffected, rather than to improve teaching and learning practice as intended (Noyes, 2005). Nevertheless the trustworthiness of the findings does not appear to have been criticised. Therefore taking account of these findings would appear to be worthwhile.

The findings indicated that teachers found the responses from the children helpful (McIntyre, Pedder & Rudduck, 2005, Flutter, 2007) and that there was common ground between the views of the teacher and the views of children about good learning (McIntyre, Pedder & Rudduck, 2005, Flutter, 2007). Teachers saw practical improvement in their teaching because they had been empowered to 'unlock the shackles of habit' (Flutter, 2007: 352) and extend their knowledge and understanding of children's learning to enable improvement in their teaching practice. Moreover, the children recognised that there was increased teacher understanding of their learning due to them being 'heard' seriously.

Rudduck, Flutter *et al.*'s outcomes indicated (Teaching and Learning Research Programme, 2004), that teachers must:

- assume that children know about their learning, through observation, experience and discussion,

- be prepared to hear children's views without, what Rudduck and Fielding (2006: 219) describe as viewing children as 'subordinate' or with an 'ideology of immaturity', in doing so the teachers shift from working for and on behalf of children to working with children.

- accept that children's views are courteous and serious, concerned with not being rude or wrong but with addressing the task.

- provide children with the language and means to feedback, suggestions for this include working with small groups of children, careful structuring of the questions asked and representation of responses in ways suitable for the children's age.

- respond to and act upon (McIntyre, Pedder & Rudduck, 2005) feedback provided by the children.

To conclude, enabling children's voice, children's learning improves via the teacher learning about children's learning through children's voice (McIntyre, Pedder & Rudduck, 2005). One implication of this study is acknowledging that children's talk to support their learning, should be embedded into the ITE curriculum (Flutter, 2007). The process adapted in this work from the research by Hopkins (2008) enables the children and student teachers to have a shared language and process by which to enable children's voice to be heard effectively. This means that the learning of both the student teachers and the children is socially constructed.

2.3.4 Considerations regarding children's voice

There are a number of issues which should be taken into account with regard to utilising children's voice in schools. For example, these may include the transitory nature of talk, the ethos of the school (including aims and rules), ownership of the curriculum, approach to citizenship education, staff understanding. These are discussed here.

One issue in school is that talk is considered to be transitory, unless it is recorded in some way. Therefore talk is hard to scrutinise afterwards, unless it is recorded, and so teachers can tend to be less reflective about what the children said (Alexander, 2010). In order to put the child at the heart of matters, the children need to have a say; indeed the children should make a 'positive contribution' (Warwick, 2007). It is part of the pedagogy of a social constructivist view of

learning that children need to talk about their learning in order to further develop their understanding. However in this project it is also useful for children to talk about their learning to scaffold the student teacher's understanding about children's learning and improve their teaching as a result. In terms of this research project this positive contribution is to voice their opinions about their learning and potentially have an impact on how a student teacher teaches. If the children were truly at the centre, it could be expected that one aspect of this might mean that they would take a share in constructing their own knowledge. That is to say that the children would be engaged in developing a curriculum which moved their learning on through their own ZPDs, on both the inter- and intra-personal planes, with the support of an MKO, that is the teacher. This is a changing view of a child's role in education (Shallcross *et al.*, 2007), and thus requires a shift in thinking for the professionals working with them.

Pupil participation is dependent on the context and environment in which it occurs (Coulby & Coulby, 1995). The intention must be that the participation of the child enables them to fulfil their potential *(ibid.)*. In many schools pupils participate through agreeing together class rules, agreeing with parents to the home-school agreement, being part of the school council. Some schools take this further with the children participating in developing individual curricula for their own learning and contributing to development profiles of their own learning in preference to reports to parents. However, in order for even the simpler aspects of pupil participation to be effective the context and environment should be appropriate. Coulby & Coulby (1995) state that an environment, supportive of pupil participation, includes clear expectations for equality, opportunities for daily discussion and adults modelling the process.

Historically children have been receivers rather than co-constructors of their learning, whereas this approach means they are expected to contribute to leading their learning. It is important not to assume that there is an equality of expert knowledge when operating with pupil's voice. There is reciprocal learning and respect, however their still needs to be an MKO (Vygotsky, 1978) to support and guide the process. Social constructivist notions of learning rely on the discussion and possible resulting expansion of ideas for learning to take place. Many children may be enabled by this approach (Watts & Youens, 2007, Alexander, 2009) through increased self esteem (Fielding & Morgan, 2007, Rudduck &

Flutter, 2004) and increased engagement in learning (Teaching and Learning Research Programme, 2004).   This in turn may lead to a more enhanced curriculum (Macbeath, Frost & Pedder, 2009, Rudduck & Flutter, 2004, Davies *et al.*, 2006).   Throughout a teacher's understanding of children's learning is increased (Rudduck & Flutter, 2004) leading to possible   transformations to teaching practice (Hopkins, 2008, Macbeath, Frost & Pedder, 2009, Davies *et al.*, 2006, Halsey *et al.*, 2006). The 'knock-on' effects of this may be a more positive learning culture in the classroom (Halsey *et al.*, 2006) and increasingly positive relationships between teacher and child (Macbeath, Frost & Pedder, 2009, Davies *et al.*, 2006).

There is a need for all involved to understand that this approach to learning cannot just be tokenistic (Fielding & Morgan, 2007). There is a need to be critical (Watts & Youens, 2007) and have clear objectives and motives (Macbeath, Frost & Pedder, 2009, Whitty & Wisby, 2007, Davies *et al.*, 2006). To use children's opinions effectively, feedback needs to be reflected upon carefully, being aware that this may be an uncomfortable process for the teacher's involved (McIntyre, Pedder & Rudduck, 2005). There may also be a need for continuing professional development (CPD) activities for the teachers who have not worked in this way before (McIntyre, Pedder & Rudduck, 2005, Macbeath, Frost & Pedder, 2009, Flutter, 2007); some staff may be wary of this change of practice (Cheminais, 2008). Training for the children in giving feedback (Macbeath, Frost & Pedder, 2009) is useful to ensure that they have the skills required to give valid responses (Cheminais, 2008). One way that this may be achieved is through embedding dialogic practice into teaching and learning from ITE onwards.

According to Cheminais (2008), who considers these issues from the perspective of 'Every Child Matters', the principles of pupil voice include:

- respect between parties (an understanding that each party, adult or child, has a view which is heard and is valid),
- equal value of views/contributions (an understanding that each part, adult or child, has views which are important and contribute to understanding the whole picture/situation),
- open and honest communication to exchange ideas (an understanding that in order to exchange ideas, discussions should be full and frank without fear of reproach in a 'safe' environment in which speech can be free),

- good teacher and pupil relationships (relies on an understanding that the relationship between teacher and child has been established that allows the sharing of control, taking into account the above three points).

Heeding children's views about their learning may result in a change in thinking about how learning is managed (Macbeath, Frost & Pedder, 2009, Fielding & Morgan, 2007). Children would be active agents within their education, particularly if teachers are working with constructivist understandings of learning. This changes the way that children are viewed (Shallcross *et al.*, 2007). It disrupts the traditional status quo (Hopkins, 2008, Whitty & Wisby, 2007, Bragg, 2007) in schools and changes roles and responsibilities (Fielding & Morgan, 2007, Davies *et al.*, 2006). Within the notion of children's voice, children are valued members of the school community (Rudduck & Flutter, 2004), working in partnership (Hopkins, 2008, Alexander, 2009) in their education. Children are involved with the learning and children are learning about learning and most importantly about how they learn and therefore what their needs are. Children have important things to say about what happens to them at school (Alexander, 2009) since they are the 'expert witnesses' to their learning (McIntyre, Pedder & Rudduck, 2005). This may establish a community of learning (Bragg, 2007) in schools where children's conceptions of learning are taken into account (McCallum, Hargreaves & Gipps, 2000).

The children's perspective (Flutter & Rudduck, 2004) is important in this instance as it provides the children's point of view (Whitehead & Fitzgerald, 2004, McCallum, Hargreaves & Gipps, 2000, Warwick, 2007) of the learning with which they are asked to be engaged. This ensures that citizenship is 'real' and not just taught (Macbeath, Frost & Pedder, 2009, Halsey *et al.*, 2006). In fact it could be described as an 'apprenticeship in democracy' (Whitty & Wisby, 2007, Shallcross *et al.*, 2007), in a small way through their school community. This view is closely connected with the notions of Dewey in the early twentieth century; children learning to cooperate on a project learn to think together and this replicates the social cooperation needed in the world outside school (Fishman & McCarthy, 1998). According to Watts and Youens (2007), citizenship education was developed to provide children with opportunities to develop the skills required to be informed enquirers who can communicate and participate responsibly in the world around them, and then later in life. Therefore, children become equipped to

articulate their views about learning and their world. They are the 'experts' in what is happening in their learning because they can see it from their perspective. Indeed the premise for children's voice as part of citizenship was also advocated in the Crick Report (1998).

One further aspect which was considered in relation to children's voice was the notion of children as researchers (Kellett, 2008). Research is the *'whetstone for critical thinking and analysis' (ibid.:1)* and in acknowledging children as experts in their own lives, the process of research enables them to make original contributions about childhood. As with all aspects of children's voice, the idea of children researching their own worlds relies on adults being prepared to listen to what is being said (Kellett, 2011). In addition the processes associated with developing children as researchers require a long term commitment to 'training' (Kellett, 2011). On this basis, with the short-term nature of the PGCE in mind, it was not considered appropriate to examine these ideas further for this project.

Consequently ITE providers must be informed around children's voice in order to prepare teachers for the future (Macbeath, Frost & Pedder, 2009, Watts & Youens, 2007). In understanding learners by listening to their views student teachers can make children's learning, through their teaching, more focussed as there is a shared understanding and language between learner and teacher (McIntyre, Pedder & Rudduck, 2005, Rudduck & Flutter, 2004, Flutter & Rudduck, 2004). The student teacher has to be able to support children's learning in the ZPD in the role of the MKO. A pedagogy that takes children's views into account enables a very clear focus on the learning and teaching relationship. This is not a priority in ITE as it does not feature in the Teachers' Standards (appendix D) and yet some of the world's most creative thinkers worked with and shared ideas with others before coming to their own understanding (Mercer, 2008). This collaborative idea of learning is demonstrable in asking the children about their learning experiences and encouraging the children to be able to articulate their understanding of their own learning in their ZPD, so that student teachers become more informed about how children learn and how best to support their learning as the MKO. The children are, after all, providing an 'expert' or 'insider' view of what the learning means to them (Rudduck & Flutter, 2004, Flutter & Rudduck, 2004). In my own view it is essential that ITE courses include this clear focus on enabling children's views to be heard because it deepens the understanding of the learning

and teaching relationship and therefore better prepares student teachers for their futures in the classroom.

2.4 A model for representing dialogic engagement in learning

The translations of Vygotsky's (1978) works posit the notions of dialogic engagement in learning. The social constructivist view of learning which he espoused discussed the value of interpersonal interactions, talking together to develop intrapersonal thinking. These interactions and reflections disrupt the learner's current thinking therefore stimulating developments in understanding (Vygotsky, 1978). These interactions take place within the learner's ZPD (the space between what a learner can do when assisted, and what they strive to be able to do autonomously). In order to mediate progress in the ZPD towards autonomy, the MKO (adult or peer) scaffolds the learner's development. The notion of scaffolding was encapsulated by Wood, Bruner & Ross (1976) and describes the role of the MKO in structuring the learning experience to make it manageable for the learner.

Tharp & Gallimore (1998) developed this into their 'theory of assisted performance' which is represented in figure 5 below. It shows Vygotsky's theory delineated into four distinct stages. Stage one is the interpersonal stage, where assistance is provided by MKOs to scaffold learning (Wood, Bruner & Ross, 1976). Stage two is the intrapersonal stage where assistance is provided to oneself through inner or self directed speech. Stage three states the attainment of internalisation, autonomy and fossilisation, (Vygotsky, 1978) which one might term as appropriation. Stage four refers to deautomatisation where a process is so embedded that it no longer requires thinking about (for example an experienced driver of a car no longer needs to consider the process of 'mirror, signal, manoeuvre'). In stage four a learner would seek help as required. From this final stage there is a recursive loop which returns the learner to the ZPD for new learning to take place. The x-axis indicates that the process moves from stage to stage in numerical order over time. The y-axis indicates the learner's capacity to learn.

Zone of Proximal Development Diagram
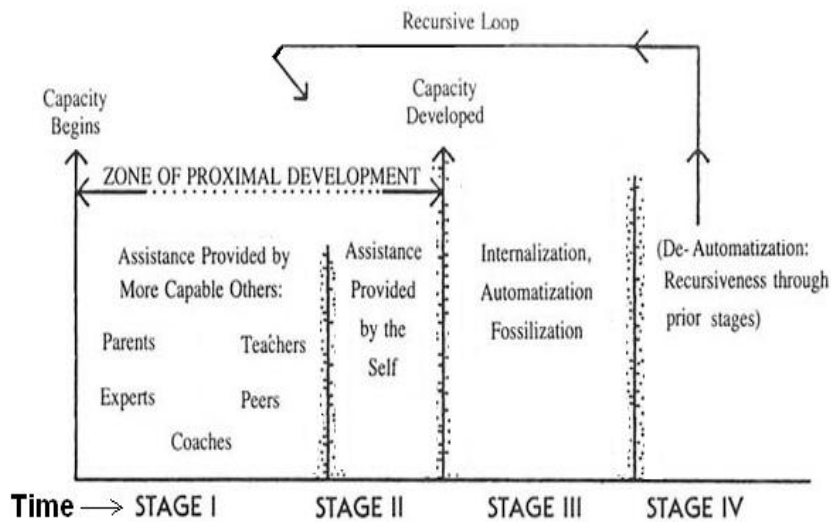
Figure 5 Tharp & Gallimore (1998:100) *Theory of Assisted Performance,* **in (Faulkner, Littleton & Woodhead, 1998)**

Tharp & Gallimore (1998) make explicit in their theory the interlinking of the social (interpersonal) and psychological (intrapersonal) aspects of learning and yet critically, the stages indicated above, are undertaken one after the other in sequence. The implication of this is that learning is linear and progressive rather than potentially iterative at each stage. Their notion of teaching as assisted performance rests on the MKO knowing the learner very well so that scaffolding is tailored specifically to that learner at that time. Further they iterate that the MKO needs to understand the learner's relationship to the task, which may mean understanding a different socio-cultural background. They refer to this as *'responsive assistance' (ibid.:104)* and emphasise the need for low teacher: child ratios as a result. It is through this process over time that learning occurs and capacity develops in the learner.

Mercer & Littleton (2007) highlighted concerns that high teacher: child ratios may mean that scaffolding and the ZPD were not being maximised by the MKOs. They suggested that rather than indicate that the MKO was skilfully providing responsive assistance to the learner to understand the learning, the MKOs were in fact helping learners to complete the task efficiently *'to get the job*

done' (ibid.:18). This they recognised was because teachers have to deal with the collective nature of the classroom in the dialogues between teacher and children. They posited a further development, the '*IDZ (intermental development zone)' (ibid.:21).* This rooted talk as a joint activity (Vygotsky referred to this as using language as tool) for the MKO to stay attuned to the changing states of knowledge and understanding of the learner. This was an attempt to capture the dynamic nature of the ZPD and the iterative movement between the inter- and intra-personal stages.

Later Littleton & Mercer (2013) elaborated to suggest that when language or talk was used productively together this was interthinking *(ibid.).* This involved scaffolding children to understand how to talk together to accept the views of others and to offer additional information – reasoning collectively together. In other words the children co-constructed ideas on the interpersonal plane and understanding was transformed through joint reflection on the intrapersonal plane. This developed the idea that dialogic engagement in learning is dynamic and as such there is iterative movement between the inter- and intrapersonal stages of learning. However, what was also clear was that the movement was not two-dimensional in that it did not move back and forth between the two, but rather as a *'helix' (ibid.:99)* through time and space. This perhaps indicates more clearly the process of dialogic learning and demonstrates perhaps how Tharp & Gallimore's (1998) notion of capacity in their theory (figure 5 above) might actually be reached.

2.5 Summary

In this chapter I have considered literature pertinent to this study. In particular I have considered the social constructivist principles which underpin the thinking about learning and the research approach adopted in this project. Importantly, I have reviewed the idea of children's voice and its connectivity to social constructivism, through dialogic engagement in learning; specifically how children talking together, may enhance collaborative and individual understanding – interthinking (Littleton & Mercer, 2013). I have concluded with one model of social constructivist learning principles which may help to understand the learning taking place in this project.

It is useful to summarise the key pieces of literature which have been most influential to my thinking and how they have contributed to the research. Here I consider the writings of a number of authors focusing on social constructivist views of learning. I then turn to aspects of scaffolding and dialogue that were so important to the current study.

In order to develop the theoretical framework for the study, and conceptualise what might enable student teachers to understand about children's learning, various works considering social constructivist views of learning were considered (Vygotsky, 1978, Kozulin et al., 2003, Vygotsky, 1986). In addition subsequent others (Warwick et al., 2010, Mercer, 2008, Littleton & Mercer, 2013, Alexander, 2010) were pivotal in structuring the thinking about learning in this project and also the design of the project itself. It was also important for me to have a scaffold to mediate my own understanding and interpretation of student teachers' developing understanding of children's learning. The vicarious scaffold which I felt might represent the processes which might be happening in learning in the classroom was Tharp & Gallimore's (1998) Theory of Assisted Performance, the advantages and disadvantages of which I have discussed above.

Whilst scaffolding was embedded in my practice as a teaching professional, both in primary schools and in ITE, my re-reading of Wood, Bruner & Ross (1976) was useful to support the way in which I thought about scaffolding and its importance in mediating learning as I developed the whole approach to the research study. The work of Rudduck & Flutter (2004) and Flutter & Rudduck (2004), was useful to gain understanding of the ways in which listening to children's voices about their learning might be incorporated into the research methods used in classrooms in the current study. The approach used to support discussion in the focus groups from the Teaching and Learning Research Programme (2004) as well as the sorting card activities of Macbeath, Frost & Pedder (2009) and McCallum, Hargreaves & Gipps (2000) and the Thinking Fish of Hopkins (2008), firstly enabled my understanding of appropriate scaffolds to mediate children to talk about their learning. Secondly they were adapted and developed as bespoke pedagogical and research tools (see Chapter 3).

I used this literature as the basis of the current study that, as noted above, explored how children's views about their learning could be used to develop student teachers' understanding of learning and their teaching practice. This

literature also supported my own personal rationale for the study which was to investigate how ITE might be placed to better enable the understanding of student teachers about children's learning and what the role of the mentors might be   in   further   facilitation   of   this.

Chapter 3 - Methodology

3.1 Introduction

This research study was designed to investigate the extent to which children's views about their learning can inform the development of student teachers' practice and ways in which mentors can support the development of student teachers' practice that involves paying attention to these views.

The research questions were:

- How can children's views on their learning be used to inform the development of student teachers' understanding of learning and their teaching practice?

- How can school-based mentors support the development of student teachers' understanding about learning?

The aims of this study were to investigate:

- what pupils thought helped and/or hindered their learning in classrooms with student teachers

- how understanding and acknowledging pupils' views of barriers to/facilitators of their learning in classrooms can be used by student teachers for lesson evaluation and planning and reflective practice

- the extent to which drawing on pupils' experiences in classrooms can support student teachers' understanding of pupils' learning and the development of their pedagogical practices (including both curriculum planning and teaching).

- improved professional practice and personal development for student teachers, researcher and school staff through increased understanding of children and their learning

This research led me to consider:

- how children view their learning needs and how they rationalise what they require to learn best

- how student teachers respond to sharing power with pupils by receiving their feedback and developing their practice accordingly through ongoing reflection and evaluation

- how mentors can best support student teachers to plan for effective learning

- how the university course can be reconstructed to support the planning, reflection and evaluation of student teachers in order to enhance children's learning

This enquiry was conceptualised as two linked case studies with integrated action research designed as an iterative spiral of research, evaluation and development in classrooms where student teachers were teaching children. New learning accumulated in one cycle (the pilot study) was taken into the next (the main study).

This study adopted a largely constructivist ontological and epistemological position, eliciting qualitative data to understand the worlds of the participants. In order to consider the knowledge of the participants in this way, bespoke pedagogical tools were developed and refined from elsewhere to enable learning to be studied from a social constructivist perspective. Quantitative data were used only where it was important to triangulate evidence to support assertions made about the development of student teachers' practice, thus adding trustworthiness to the interpretation of the study. In addition I adopted a reflexive position as the researcher.

3.2 Development of a paradigm

The research design adopted should be in congruence with that of my own philosophies (Mills, Bonner & Francis, 2006). Developing the design was complex because my thoughts and ideas were evolving about the research all the time. It was clear that my past experiences as a student, a primary school teacher and a lecturer in ITE influenced the way that I view research (Lichtman, 2006). From these experiences I had come to understand learning, by student teachers and children, from a social constructivist perspective. I adopted the view that knowledge is socially constructed and therefore I explored reality from a constructivist research perspective, learning within a social context. This meant that I had a constructivist ontology which was compatible with this epistemological position where I, as the researcher, adopted a social constructivist view of learning in a social context. This helped me to take a stance about the ways in which it was appropriate to collect data about the understanding of learning within a social context, but also with an understanding of a theory of knowledge which is that knowledge is constructed.

An aspect on which I have reflected is the notion that constructivism lacks objectivity (Mills, Bonner & Francis, 2006) because it is an intrapersonal thought process (Breuer, Mruck & Roth, 2002). Prior to undertaking this research, I had assumed that researchers should be objective and therefore adopt realist

ontology and epistemology. I also questioned whether a good research project should adopt a grounded theory approach because of the involvement, interaction and collective understandings of the participants in this project. Through my growing understanding of the implications of social constructivist theory for research methodology, as I discuss later, one grounded process that I have come to adopt is in the analysis of my data, I identified themes and through a constantly comparative approach to develop meaning, letting the data tell the story through the patterns which emerged (Glaser, 2002).

The mainly constructivist nature of the data meant that my research here is largely interpretive in nature: an investigation of the world of the participants through two case studies, triangulating data from a mixed array of dialogue-based data elicitation methods (observations feedback, focus group interviews and reflective narratives) to ensure, as far as possible, the trustworthiness of the interpretation of the findings. This placed my role as integral to the process: reflecting, considering questioning and understanding all at the same time (Mills, Bonner & Francis, 2006) in order to better interpret the data. In doing so it was clear that the research design, the rigour of the data collection and the comprehensive range of relevant data sources were the means of substantiating my trustworthiness in the interpretation of the data (Mills, Bonner & Francis, 2006). I therefore recognised that reflection is one way of researchers constructing their own meaning and I therefore endeavoured to maintain transparency in my approach through making clear my thinking as well as being clear about my research approach and data interpretation.

Whilst the paradigm was largely interpretative, using qualitative data, it also incorporated some quantitative data, which would normally be associated with a positivist approach, in order to better understand the case studies. Whilst being a predominantly constructivist study, importantly I triangulated qualitative data with some quantitative data in order to make the study as relevant as possible to its intended audience. As part of its audience could be policy makers in the area of ITE, I therefore had to deal with the data in a way that was familiar to them, that is using Ofsted grading of student teachers' practice and thus a quantitative approach. For example I incorporated some quantitative analysis to triangulate student teachers' reflections, children's feedback from the focus groups and the mentors' grades from the lessons observed.

3.3 An overview of the research design

3.3.1 Rationale

As already noted, my personal rationale for this research was a concern that had arisen from my experiences of working with student teachers in ITE as an academic and course tutor, and also from supporting them and their mentors during their school-based training. It became clear that ITE was becoming more focussed, as directed by the UK Government, on addressing a set of competencies or standards and less emphasis was placed on student teachers having time to develop an understanding of children's learning and the appropriate associated pedagogy for their practice (as discussed in the literature earlier). As a consequence I was seeing many student teachers doing what was required of them to teach in their placement without a depth of understanding about why they were doing it. My concern was that student teachers would not have a firm understanding of children's learning to apply in different teaching contexts. In addition as a primary teacher I had developed social constructivist pedagogy in my practice and as such was interested to see how this could support student teachers.   This became the starting point for this study. I therefore began to research by taking these steps:

3.3.2 Formulating the research questions

I began by considering some areas of literature in order to deepen my understanding of the issue as I saw them from my professional and personal experiences so that I could develop a more specific area to research:

i. My role as a class teacher in primary education where I gathered experience of practising with social constructivist principles underpinning my work with children, in particular listening to children's voice and using it in the development of my practice,

ii. My roles as academic tutor, professional tutor in school and PGCE course coordinator all of which shaped my understanding of student teachers and their developing understanding of teaching and learning as well as meeting the UK Government requirement for Teachers' Standards (DfE., 2012).

This allowed me to consider the areas on which I felt that I needed to focus initially:

i. The contextual background of teacher education and how this had evolved and changed over time,

ii. The social constructivist notion of an MKO/mentor who supports student teachers to learn during school-based training, and

iii. How a student teacher could listen to feedback from children in order to make improvements in their teaching and learning.

As a consequence this led me to investigate the following literature to take my understanding forward in the current research study:

i. Children's voice

ii. Student teacher and mentors

iii. A socio-constructivist approach to learning

iv. Developments in teacher education over time

The literature review raised further questions:

a. What do children think help or hinder their learning in classrooms with student teachers?

b. How can acknowledging the barriers to or facilitators of their learning help student teachers to improve their pedagogical practice?

c. Is there an approach which is routed in social constructivist principles that would encourage student teachers and children to reflect on learning in the classroom?

At this stage, I became particularly interested in the work of Ruddock and Flutter (2004) whose study about children's voice reflected a concern with similar questions but in a different context. I designed an intervention based on their work with the Teaching and Learning Research Project (2004) and that of Hopkins (2008).

3.3.3 Context for the study

This pilot study took place during the student teachers' first school experience in the PGCE year, around January 2011. This was when student teachers were first beginning to consider children's learning in their practice.

A standard part of the PGCE course is that during school-based training the student teacher is in school working alongside a mentor, teaching children in a

class.   The student teacher is responsible for the planning, teaching and evaluating of lessons. The student teacher works with the mentor who observes and provides feedback, as well as modelling practice in planning, evaluation and assessing, and so on, where required. All of this takes place within the context of the class and the school. The structure for the planning format is a standard proforma (appendix C) developed over time by the course teams in response to student need and external requirements, for example Teachers' Standards (DfE, 2012).

Student teachers need to be able to engage with the process of children's learning. My underpinning assumption was that children might be able to inform the student teachers about their learning and that this could enable the student teachers to reflect upon what kind of scaffolds they can put in place to support the children's further learning through their ZPD. Primary aged children are unlikely to be able to engage with the abstract concepts of meta-thinking related to their own thought process without scaffolding. To do this therefore in this research I devised scaffolds for these meta-learning processes based around the work of Ruddock and Flutter (2004) and Hopkins (2008).

The second case study, took place during the student teachers' first school experience in the subsequent PGCE year, around November 2011 (that is with a new PGCE cohort of student teachers). The course assessment had been reshaped in order for the way of working identified from case study one (the pilot study) to be embedded into the course and as a consequence all students on the course utilised the approach in their practice in school.

3.3.4 Research process

In this study, one case comprises iterative cycles of action research across one week of the student teachers' teaching practice.   Each lesson was conceptualised as one mini-cycle of action research. Each cycle consisted of:

- the student teacher planning and teaching a lesson
- the children in the classroom feeding back to the student teacher about their learning during the lesson
- the mentor observing the teaching practice of the student teacher in the classroom and feeding back to him/her in writing

- the student teacher listening to feedback from the children in the classroom and the mentor, reflecting upon the lesson taught and planning the next lesson in light of what he/she had learned about the children's learning.

In the pilot study, the whole week of mini-cycles comprised one case that is, one case of five mini-cycles. In the main study, one case comprised one set of all the student teachers' lessons in the course of one week within which each student carried out five mini-cycles.

This is summarised in table 1 below which outlines each participants' role during one day's research activity. In addition I, as researcher, compiled an informal log of reflections and the project developed. Some of the material from this came from reflections on student teachers work as it was submitted, as well as thoughts that occurred to me on an ongoing basis.

Table 1 Outline of the iterative cycle of work undertaken by the participants in the research process

Participants	Student teacher	Mentor	Children
Daily research activities	- Plan lesson - Teach lesson - Receive feedback from mentor - Review lesson with focus group of children using the Thinking Fish - Complete lesson evaluations and reflective log questions ↓ - Plan the following lesson taking into account all of the above	- Observations of classroom teaching - Feedback – written (and oral, not recorded)	- Participate in lesson - Feedback in focus group using the Thinking Fish

3.3.5 Research design

As noted already, the research design comprised two linked case studies:

- a pilot (feasibility) study, of one student teacher's practice, lessons from which were taken into the main study
- the main study with student teachers from one year's cohort of the PGCE course

3.3.5.1 The pilot study

The pilot study, conceptualised as five iterative, daily mini-cycles of a student teacher's teaching practice across one week, took place in early 2011 as this was the time when the students were conducting their data collection for their reflective projects in school. To this end I acknowledged that these data were collected at a particular point in time. The main study involved more student teachers.

I designed two bespoke pedagogical tools (sorting activity and Thinking Fish – see Research tools) based on the work of Ruddock and Flutter and the Teaching and Learning Research Programme (2004) and Hopkins (2008), both designed to be implemented in school, by the student teacher following a lesson, with a focus group of children to scaffold discussion about learning. The intention was to capture the thinking of the children about their learning through dialogue with the student teacher in small groups, and for the student teacher to use this to adapt their subsequent practice (planning and teaching). The research tools are discussed below. In addition, existing pedagogical tools were employed to scaffold observation feedback of the student teachers' practice by the mentor and to scaffold the student teacher's own reflections of their practice. The two bespoke pedagogical tools, the mentor's written observation feedback and the student teacher's reflections formed the data produced for analysis.

In the pilot, further support was offered to the student teacher at the end of each taught lesson by me to support the student teacher to understand the feedback, scaffold her reflections and embed them into her teaching practice. This was done through a short discussion between the student teacher and me.

The learning from this first case study indicated that a greater understanding of the literature was required in the areas of:

- dialogic engagement in learning,

- student teachers adopting reflective practice, and

- assessment in teacher education of student teachers during school-based training.

3.3.5.2 The main study

The learning from the pilot study indicated that for an increased number of students in the main study (n=1 in the pilot, whereas n=32 in the main study) a

change to the data elicitation tools was needed in order to make it more manageable for all participants in the timeframe available. As such the Thinking Fish was taken forward into the main study but neither the sorting activity nor the analysis of the student teacher's lesson plans. In addition I did not meet with the student teachers for additional support discussions following the feedback and self reflections each day.

The student teachers, following being taught during a University session, implemented the remaining bespoke pedagogical tool into their practice in the same way as in the pilot: as part of a focus group with a small number of children held after each taught session. The mentors continued to observe. The student teacher continued to reflect, plan and teach sessions based on the feedback received from both mentor and children. Once again I collated the data from the student teachers; mentors' observation feedback of student teachers teaching, student teachers reflections and minutes from the focus group with the children. A summary of the research approach is represented visually in figure 6, below.

Stage 1 - Formulating Research Questions

Personal Experience:	Contextual literature:	Literature Review:
• Primary class teacher • PGCE Course tutor	• Development of Initial Teacher Education over time	• Social Constructivism • Student teacher and mentors • Children's voice

Main Research Question

- **Can student teachers' pedagogy be enhanced by heeding children's thoughts about their own learning?**

Stage 2 – Refining sub-themes for exploration

Further Literature Review:
• Dialogic engagement in learning • Student teachers adopting reflective practice • Assessment of student teachers during school based training

- **How can children's views on their learning be used to inform the development of student teachers understanding of learning and their teaching practice?**

  a. What do children think help or hinder their learning in classrooms with student teachers?

  b. How can acknowledging the barriers to/facilitators of their learning help student teachers to improve their pedagogical practice?

  c. Is there an approach which is routed in social constructivist principles that would encourage student teachers and children to reflect on learning in the classroom?

- **How can school based mentors support the development of student teachers understanding about learning?**

Stage 3 – Select Research Methods

Case study 1 – Pilot Study

Refined practice and approach from learning from case study 1

Case study 2 – Main Study

Figure 6 Summary of research approach

3.4 Case study approach

The research approach was that associated with case studies; it was largely interpretative in that it was about getting inside the situation and trying to make sense of the phenomena from within; beginning with individuals and focussing on the action taken from a variety of perspectives to provide a rich set of data to use to describe the situation. Cohen, Manion and Morrison (2007) were in agreement that it was closely connected with the interpretive paradigm, as the research was centred on the way people negotiated and made sense of a social context; a strength of the approach. Case studies are predominantly qualitative in nature, but can encapsulate quantitative data (Kumar, 2011). Case studies enabled development of an understanding through thorough, holistic, in depth exploration (Kumar, 2011). They were specific examples of real situations and the attempts made to understand them more clearly (Cohen, Manion & Morrison, 2007). The focus was on that of an individual (as the pilot) and a group (as the main study) and it was intended that insight into the events of a situation was gained (Kumar, 2011). A further strength of case studies is that it enabled an in-depth look at particular classroom contexts (Cohen, Manion & Morrison, 2007).

Multiple methods were employed with these case studies. Interviewing and observations are two common data collection techniques to this approach, however, this approach is *"distinguished by the subjects rather than the methodologies"* according to Cohen, Manion & Morrison (2007:181). The sample can be selected to provide as much information as possible in order to understand the totality of the situation and often there is a trustworthy rapport established with participants before data collection (Kumar, 2011). The sampling method for this study is discussed later in this chapter. The disadvantage of this approach was the inability to draw generalisations from or cross-check the findings as the study is of a case and therefore the findings may not be applicable more widely. As Cohen, Manion & Morrison (2007) posited, the rich, vivid description, chronological narrative and my involvement in the case, enabled the data collected to demonstrate 'what it is like' to be in this situation in this context. This was of real value as the results were demonstrated largely through the eyes of the participants. The key therefore to the success of the case studies was the rigour and transparency in the data elicitation and analysis as well as the selection of the information used. This enabled a presentation of the most accurate and trustworthy picture (discussed further below).

3.4.1 Types of case studies

In this research the same type of case study was adopted during the pilot and main studies. The pilot study (the first case study) was exploratory (Yin, 2003). Its intent was to explore the feasibility of the process of the research design, including the use of the bespoke pedagogical tools, with one student in order to consider how this might be scaled up to include more student teachers for a main study (case study two). In this way, case study one was a feasibility study for case study two. Case study two was also exploratory (Yin, 2003). I was interested in how student teachers could better understand children's learning and how mentors could support the student teachers to do this. As such it was the responses of the student teachers, children and mentors themselves that were interesting to me. As already stated the purpose was not to generalise but rather to find out what the situation between the participants was like in school. In this instance therefore the case studies were associated with the mentors, student teachers and children in the school settings who were observing, reflecting and providing feedback on lessons taught.

3.5 Reflexivity

As a researcher, I am also a learner (Day, 2002); the research shaped me as a researcher just as I shaped it as a project (Lichtman, 2006). In reviewing the data I made sense of it through my own lens but this process was dynamic and meaning was interpreted through the multiple perspectives of the participants. Reflexivity acknowledges this relationship and as such adds the researcher as a 'tool' to the research methodology (Lichtman, 2006). Effectively this removed me from the outside looking in on the data, to the role of witness and, as a consequence, the reality was constructed with the experience, knowledge and skill of all the participants, researcher included. Ideally I would have discussed the data with the participants and, as I discuss later, in a future study I would endeavour to do so. However pragmatically, the nature and timing of the PGCE course prohibited this. This approach is further enhanced through the triangulation of data elicitation tools reflecting the participants' own voices and the rigorous iterative collation and transparent analysis of data to ensure results were trustworthy in their interpretation (Lichtman, 2006).

A further concern may remain in adopting this approach as limited generalisation from the outcomes, if any at all, can be made from the data. However, the data

conveyed a story which can be compared to the literature 'as a mirror' of my ideas with those of others (Day, 2002), as such this enabled the topic to fit a wider context and made the outcomes transferable to interested parties in similar contexts (Lichtman, 2006, Day, 2002). In addition, in terms of a wider audience, the position of the reader, and each read, will influence the meaning taken from the research as they also bring his/her own experiences to understanding the research (Day, 2002). This is welcomed if further knowledge is to be constructed.

Etherington (2004) reminds us that reflection is a constantly changing process of becoming. It is a skill which entails noticing the responses of those around and associated events and uses this knowledge to inform further action and understanding. However personal, social and cultural influences can affect the interpretations of the context. Social constructivist thinking connects with reflexivity both on the intra-personal plane, but also on the inter-personal plane. Etherington (2004:21) referred to this as *"listening to voices".* In this research the 'voices' are those of the participants – student teacher, children, mentor and researcher. Etherington (2004) highlighted that in using these 'voices', they should be used to increase competence and knowledge and encourage all participants to make meaning for themselves and learn from it. The notion from these reflections therefore was to understand the situation at a deeper level and make those understandings explicit. Reflection permeated this research from the researcher through to the children in the classroom. Meaning was constructed in this situation through the use of language as a tool for sharing understanding between participants, a close fit with the notion of social constructivist learning theory. As such however, as a participant in this process, it is important that my position was acknowledged. The issues of trustworthiness are discussed later in this chapter.

By making my position clear (Etherington, 2004) the insight provided may be useful to those also questioning their involvement and understandings in a similar position, even if broader generalisations cannot be drawn. In addition reflexivity, as Moore (2007) described it, is useful because the process of reflexivity itself enables consideration of both competence-based and reflective practice models of learning, which is the situation examined in this study and, as such, sits well with an ethnographic, interpretive paradigm.

3.5.1 Researcher's reflexive position

With a background as a primary teacher and tutor on an ITE course, I had come to understand learning from a social constructivist perspective. In addition I had seen that the focus on learning in classrooms was increasingly about knowing content rather than developing understandings of how children, and student teachers, learn (discussed earlier in my study). My intention was to elicit the understandings of the participants (children and student teachers) about their learning; of how best they learn or can support learning in order to better support student teachers to understand children's learning (above). Reflection pervaded all aspects of the research from the approach adopted to the reports of the participants as recorded on the research tools (discussed in this chapter). As a consequence new knowledge was constructed by me from reviewing the reported realities of the children and student teachers about the learning taking place in the classroom. In addition as I developed personal understandings about research approaches, particularly reflexivity in research (the nature of which I found to be elusive), clarity of my understanding developed through my reflection on the research practices I adopted and in the interpretation of the data. I accepted that it was important to support the work with as much rigour as possible as I was making meaning from 'inside' the research.

3.6 Issues of reliability, validity and trustworthiness

Case study research that is largely qualitative and constructivist in nature, issues of validity and reliability are contested. More appropriate were the issues of trustworthiness and transparency. Transparency is an essential aspect in relation to the researcher, the participants and the questions asked. Where the questions in the research tools employed are semi-structured, this enabled consistent coverage of the areas investigated in the process of data elicitation. Issues of validity and reliability, measuring consistently and accurately what is intended were less relevant than rigour and transparency in ensuring that the interpretations of my findings were trustworthy.

I further strengthened the robustness and rigour of the study by ensuring that the data were recorded systematically. All perspectives were recorded even if they disagreed with my own. By balancing the perspectives and scrutinising the data with an open mind, more trustworthy data analysis and interpretation could occur. I was self-critical of my involvement ensuring that I communicated findings that

could add to my own and others' knowledge. All data were triangulated with other sources (see below) in order to ensure that there was evidence of what I claimed. Consistency was maintained by using the same formats and processes, as would normally occur in schools, throughout the study, for example the same observation schedule and also the same observation process of a student teacher. This helped to maintain trustworthiness of data (Open University, 2001). This was further supported by deliberate attempts to maintain the good relations and rapport that the student teachers and researcher already had through their working relationships. This respect and openness is not only embedded in the process of the research but also in the normal boundaries of the student/mentor working roles, as outlined in the course handbook, thus enabling reasonable judgements to be derived providing protocols are observed. In addition this was considered within the ethical parameters of the study.

3.6.1 Achieving trustworthiness of interpretation

Critics of mixed methods may highlight that there is an assumption that multiple methods of data collection are better than one but that this may lead to more inaccuracies in the data because a single method is not used (Cohen, Manion & Morrison, 2007, Scott & Morrison, 2006). This may be compounded by inconsistencies in the application of the variety of methods employed (Cohen, Manion & Morrison, 2007). The assumption that these multiple data sources corroborated the findings implied, or may be seem to imply, a degree of objectivity that could be seen to conflict with the reflexive stance taken in this research (Cohen, Manion & Morrison, 2007).

The use of mixed methods can be seen as a means of learning more about a given situation by taking account of multiple perspectives (Cohen, Manion & Morrison, 2007, Neuman, 2013). This had important benefits to the research. It helped to reduce one of the limitations of qualitative research as it promoted trustworthiness of interpretation (Neuman, 2013) owing to taking more than one perspective into account, and thus encouraging trustworthiness of analysis and interpretation of findings through the consideration of different viewpoints (Adams, 2007). Moreover these multiple perspectives provided richer, more comprehensive data (Cohen, Manion & Morrison, 2007, Neuman, 2013) which enabled me to further elucidate particular ideas inducted from the data (Cohen, Manion & Morrison, 2007) through the comparison and corroboration of different

facets to get to the 'whole picture' (Scott & Morrison, 2006). This was important to this research because whilst a case study approach had been adopted and wider generalisations could not be drawn (as discussed earlier), the research approach may be transferrable to other institutions in a similar situation.

3.7 Issues of power in data collection

One issue facing the trustworthiness of the findings and analysis in this research was the influence of power relationships between researcher and the participants. Issues of power in research came to the foreground particularly during the 1980s (Demirdirek, 2009). At the same time, it was highlighted that those being researched should be referred to as participants rather than subjects, data were elicited rather than collected (Demirdirek, 2009) and outcomes were shared rather than used to control (Das, 2010). In considering power in this way it reflected my epistemological position.

Power was not an entity that is held by a participant (Das, 2010) rather it moves between the roles of the participants (Das, 2010). It is dynamic and belongs to all participants in all the roles that the participants played. As the power moved during the research it altered the dynamics between the participants (Burton, Brundrett & Jones, 2008) depending on the role they were playing at the time. In order to elicit data when embracing power as part of the epistemology of a research study, innovative research methods were needed to reveal the layers of thinking of each participant through dialogue (Demirdirek, 2009). Dialogue enabled participation and relied on trust between participants. It could shape the past and the future through the reflective nature of the dialogue (Das, 2010) on the inter- and intra- personal planes. In every instance of talk, power was negotiated (Riley, Schouten & Cahill, 2003). In addition identities or roles of the participants shaped the dialogue. This research employed bespoke pedagogical tools, designed to elicit dialogue by all participants in all the roles which they play in interacting with each other. These enabled the participants, through scaffolding the dialogue on the interpersonal plane, to be powerful in whatever role they were in at the time (Mukherji & Albon, 2015). In this study this is particularly complex due to the changing nature of the roles that the participants play. For example, the student teacher can be both the teacher (more knowledgeable other to the children/learners facilitating learning through their ZPD) and a learner as the children take on the role of the more knowledgeable

others, feeding back to the student teacher on their understanding of their own learning and in turn guiding the student teacher through their ZPD. It is on this basis that it can be considered that all participants had some power during this research process in expressing their views because the positions that they took during the research shaped the power dynamics of the study.

This approach to the research meant that there were no objective data (Demirdirek, 2009) owing to the participants sharing information from their own perspectives in their own words, highlighting further the importance of transparency in the research methodology as a whole (Das, 2010). One way of reducing issues of power is to adopt an appropriate research methodology as discussed above. In these case studies I shared some personal characteristics (ethnicity, gender, age, class) with some of the participants (mentors, student teachers, children) however these were dissimilar to some of the other participants namely student teachers, children or mentors from minority ethnic groups, males and under twenty five. However the main similarity between participant and researcher was the connection of experience in primary schools and also the role of a learner. These commonalities helped reduce the social distance between me and the participants through an understanding of common experiences which helped to build rapport leading to a better understanding of the dialogue captured between participants (Das, 2010).

The nature of this research led to considerations of issues of power because of the complex relationships and roles with which the participants were involved at different times during the research process (Mukherji & Albon, 2015). Already existing were the power dynamics between the student teacher and the children, the mentor and the student teacher and the university and both the student teacher and mentor. Conventionally the power rests with the mentors in a student teacher/mentor relationship as they are seen to be the expert. Equally this is also so between a student teacher and the children where the student teacher is seen to hold the power. One aspect typical of many teacher/learner relationships is that learners seek to give the answer that the teacher expects. It could be that they were looking for the answers that they wanted to find and therefore perhaps also, not hearing what was being said. Cohen, Manion & Morrison (2007) call this transference. It was therefore important that all coursework, completed as part of assessments that were also used as data in this study, were moderated according to university processes. In addition it was

stressed that participation would not affect the assessment of coursework and that student teachers could withdraw, without prejudice at any time. The sample was selected after completion of the marking and moderation of work, as Cohen, Manion & Morrison (2007:60) note there could be potential issues around the student fulfilling a course requirement and seeking professional advancement through his/her study. However, integral to overcoming this issue of power is that both parties operate in their 'modus operandi'.

It is possible that power issues, relating to ethical parameters, may have existed but in recognising the agency of each of the participants I attempted to manage barriers positively and actively to enable the voices of the participants to be heard.

3.8 Participants

Sampling criteria both enabled and limited the research. With a predominantly qualitative approach to the research methodology certain factors were considered. In order to gain as much in-depth knowledge as possible, I needed to identify the sample which included a few 'information rich' (Kumar 2011:192) participants from the larger population (discussed below). Ultimately, this created time, resource and financial savings (Cohen, Manion & Morrison, 2007) but also restricted the type and amounts of data elicited (Kumar, 2011) and this was borne in mind throughout. A pragmatic factor here with the samples chosen was for ease of access to the research populations.

This study required participants at different levels in the education system:

3.8.1 Student teachers

All student teachers were volunteers from primary PGCE cohorts in the University Teacher Education Department where I am a tutor.

3.8.1.1 Case study one (pilot study)

All student teachers in the PGCE cohort were invited to participate. I addressed them during a lecture and then provided further information on the course website (appendix A). In the first case study (the pilot) the population in which the participant was a student teacher was the primary PGCE cohort of student teachers. The sample size for the pilot (case study one) was one. She was the sole volunteer for the study. She described herself as a white, middle class,

female, over the age of twenty five years, and therefore categorised as a mature student teacher. The study took place in her first placement school. The timing for the study was chosen as this was the point where student teachers had begun to think about children's learning in practice, having been introduced to it during the academic sessions on the PGCE course. It took place at a mid point in the placement. The student teacher undertook the data collection in literacy lessons every day. Literacy took place for one lesson per day over one week. It was the student teacher's choice to opt for literacy lessons as this best suited placement school's arrangements. This was an important consideration in relation to the action research cycle of data elicitation (discussed below).

3.8.1.2 Case study two (main study)

All student teachers in the PGCE cohort were invited to participate. I addressed them during a lecture and provided further information on the course website (appendix A). The participants for case study two were the primary PGCE cohort in the following academic year to the pilot study.   All student teachers volunteered. They were a mixed population in terms of gender, ethnicity and age (appendix B). The study took place in their first placement schools. The student teachers undertook the data elicitation in lessons that occurred every day which meant ease of access to participants and convenience for response in their action research cycles (adopted by them for data collection).   The student teachers taught five sequenced lessons (one per day, over one week). No one teaching subject was specified. Student teachers mutually agreed the subject to be taught during the sequence of lessons with their mentor, as appropriate to the age of the children and the curriculum of the school. The sample for the main study (case study two), n=32 out of a possible 115 (in the entire PGCE cohort) was identified through a non-random, non-probability method.

In order to select the final sample of thirty two student teachers, the total student teacher cohort was first divided into purposive subsets that corresponded to descriptors identified by Ofsted (2009), which are gender, ethnicity, SEND, course of study and age on entry. Ofsted require that, following their report, *"Inspecting Equalities"* (Ofsted, 2009), providers of all levels of education, including ITE, should report on the attainment of underrepresented groups and underperforming groups. I therefore thought that considering these groups in this research may make this evidence useful to the University ITE provider. The subsets to be discussed as identified from a 'traditional' ITE/Ofsted point of view

therefore are: gender, minority ethnic group (MEG), mature/age, special educational needs and disabilities (SEND), entry route and course end grade. Within each subset the appropriate proportional sample of the cohort was selected to reflect proportions in the whole PGCE course cohort (n=115).

I worked out what proportion of the total student teacher population was included in each subset. From these subsets I then randomly selected student teachers for the final sample in the same proportion as they occurred in each of the subsets. Hence the proportions of those students in the final sample of thirty two were proportional to those in the whole sample of one hundred and fifteen. It should be noted that some student teachers met more than one subset descriptor, they appeared in both subsets, for example a black, male student teacher appears both in the gender subset, but also the MEG subset. These proportions are represented in table 2 below.

Table 2 Sample proportions for the main study (case study two)

Subset	Proportion in cohort (n=115)		Count and proportion in final sample (n=32)	
Gender	M=22%	F=78%	M=7=22%	F=25=78%
MEG	MEG=13%	White= 87%	MEG=4=13%	White=28= 87%
SEND	SEND=6%	No SEND= 94%	SEND=2=6%	No SEND=30= 94%
Course route	Early Years (EYs)=9%	Primary= 91%	EYs =6=9%	Primary=26= 91%
Age	Over 25=41%	Under 25=59%	Over 25=13=41%	Under 25=19=59%
Grade on exit	Grade 2+=91%	<grade 2 =9%	Grade 2+ = 3 =91%	<grade 2 = 29 =9%

A stratified sample would have allowed for random selection within each subgroup within the sampling frame. Whereas a dimensional sample would have allowed for at least one of each identified sub group to be chosen. Further a quota sample would have allowed for the course to be represented proportionally in the smaller sub group. Therefore the case study two sample combines the quota method with the stratified method in order to ensure the selection of participants from typical non-probability methods. This was advantageous due to ease of access but also enabled the relevant characteristics of the subsets to be

covered. Schools were selected on the basis that the student teachers were placed in them for their school-based training. Twenty seven schools were used: five lower (children aged 4-9 years), two junior (children aged 7-11 years) and twenty primary (children aged 4-11 years) schools. The lessons were chosen in negotiation with the mentor. One hundred lessons were taught in total. The findings in this approach are not generalisable and may not be truly representative (Kumar, 2011) as is acknowledged in approaches to qualitative research of this kind.

3.8.2 Children in the student teachers' classrooms (pilot and main study)

The children in this study were selected in two different ways:

- For the observations, all the children in the student teachers' class were involved.

- Children in the focus group were selected through a stratified, purposive, criteria-based sampling of children by the student teacher on placement in a primary school in consultation with their mentor. The criteria given to the student teachers and the mentors were to select approximately six children from their primary school class (age range 4-11 years), to include a range of abilities and a mix of gender. This was a convenience sample as these were the children in the class in which the student teacher was working.

3.8.3 Mentors of student teachers (pilot and main study)

In the PGCE course each school allocates a mentor to a student teacher based on how best school can support that student teacher's developing professional practice as a beginning teacher. The sample of mentors comprised those who supported the student teachers.

3.8.4 Practitioner action research

The nature of planning, teaching and evaluating lessons as a class teacher is similar to the action research cycle (Appleby, 2001, Zwozdiak-Myers, 2012, Swim, 2007). The approach taken by the student teachers therefore was that of practitioner action research. Through this I acquired information that has practical applications to the specific situations of me, the student teachers and the children (Punch, 2009). The cycles are modelled in figure 7 below.

Figure 7 demonstrates the iterative nature of the research and the student teachers' classroom practice, setting out the steps taken during each cycle of

action research. Each action in the cycle was informed and directed by the evidence gathered in the previous step (Burton, Brundrett & Jones, 2008). It shows that in the first cycle the student teacher planned a lesson and then acted by teaching that planned lesson. During the lesson, the mentor observed the teaching practice of the student teacher and provided feedback after the lesson finished using the observation tool. Following the completion of the lesson, the children fed back to the student teacher using the bespoke pedagogical tools (Thinking Fish and sorting activity, discussed below). Also after completion of the lesson the student teacher self-reflected on the learning and teaching that took place during the lesson, as well as on the feedback from the children in the classroom about their learning and the feedback from the mentor about the learning and teaching in the classroom. Following these reflections, the student teachers then used their learning from this process in order to plan the subsequent lesson (next action research cycle). Again they taught the lesson and received feedback the mentor and children. Following the end of the lesson they reflected on the mentors' and children's feedback, as well as their own reflections on the teaching and learning before planning the following lesson. These cycles of action research continued for the sequence of lessons taught by the student teacher. By working collaboratively in this way the student teachers were supported by the mentor and the children as MKOs to develop their role in the in the learning and teaching process (Burton, Brundrett & Jones, 2008).

When aligning a social constructivist approach with any research paradigm, there is a balance to be found. This is because the social constructivist approach required open-endedness due the nature of the construction of knowledge and understanding that it advocates. Deliberate scaffolds were put in place in line with a social constructivist view of learning that supported the student teachers developing understanding about learning by the MKOs facilitating their learning through their ZPDs. At the point where student teachers and children were asked to contribute their ideas about learning, scaffolds were introduced which enabled them to talk about abstract matters that would not be possible had the scaffolds not been implemented.
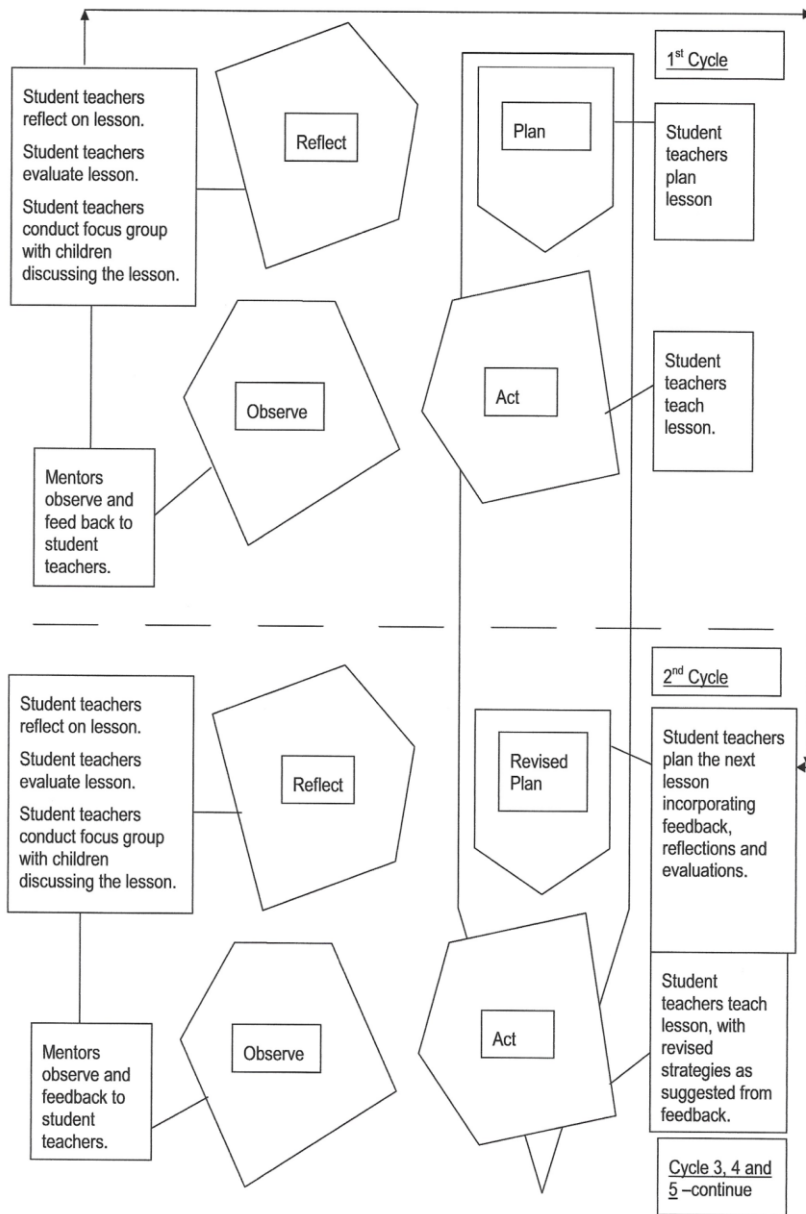
Figure 7 The steps in the student teachers' action research cycle (adapted from Kemmis & McTaggart, 1981:14, cited in Open University, 2001:137)

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3.9 Research tools

This section will consider the techniques employed to elicit the data. Qualitative bespoke pedagogical tools were developed as a data elicitation technique. Table 3 below outlines the research methods and tools used, and indicates when they were employed during the pilot and the main study.

Table 3 Research methods and tools employed

Research methods	Data type	Tools employed	Stage of research	When employed
Feedback from focus group of children	Qualitative Qualitative	Sorting activity Thinking Fish	Pilot Pilot and Main	After lessons
Student teachers' reflective log	Qualitative Qualitative Qualitative	Question prompts Lesson planning Lesson evaluations	Pilot and Main Pilot Pilot and Main	After lessons and feedback from mentor's observations and children's focus group
Researcher's reflective log	Qualitative	Unstructured notes	Pilot and Main	Throughout the development of the research project
	Qualitative	Notes from meetings with student teacher	Pilot	After lessons, self reflection and feedback from mentor and children's focus group
Mentor's feedback	Qualitative and quantitative	Lesson observation proformas, comments and grades	Pilot and Main	Observed during lesson and fedback after lesson

3.9.1 Focus group interview of children

Children were participants exploring their world through this study by articulating their understanding of their experiences in the lessons taught by the student teachers. Their beliefs, perceptions, attitudes, views and opinions were taken into account through a small group interview (Macbeath, Frost & Pedder, 2009) so that the student teacher had a better understanding of children's learning and could make provision accordingly. The interview with the children was conducted by the student and was minuted (Gibb, 1994) and contained semi-structured questions (outlined in the sorting activity and Thinking Fish below). This allowed for open questions to be asked with flexibility to react to the children's responses (Punch, 2009). When working in the group for the first time the group needed to learn to work together and a set of rules was devised (Macbeath, Frost & Pedder, 2009).

The following rules were developed from my own practice as a primary school teacher and were discussed with the children:

*When our group is talking and thinking aloud **everyone** should be asked:*

- *What do you think?*
- *Why do you think that?*

Everyone's ideas should be carefully thought about

We look at and listen to the person talking

We share everything we know

After discussion, we try to agree on what to do or say.

The group was set up to maximise participation (Open University, 2001). Two activities were utilised in the pilot study (case study one), however only one tool (the Thinking Fish), chosen for its effectiveness, was employed in the main study (see below). The first was used to establish the feasibility of assuming that children would offer their views to peers in the focus group (Warwick, 2007); the second to elicit the discussion.

3.9.1.1 Scaffolds for supporting children's thinking

Reflecting on learning on the intrapersonal plane is very sophisticated. Without scaffolding, children of this age group (aged 4-11 years) are unlikely to be able to consider their metalearning as this is an abstract concept. As Piaget (Woolfolk, Hughes & Walkup, 2008) suggests, this ability to think abstractly develops around

the age of 11 years old. The children in the pilot were aged 9-10 years old. It is therefore important that they had scaffolds to support them to be able to do this, to enable them to think about their own thinking. The bespoke pedagogical tools were intentionally designed as indirect scaffolds (Warwick, Mercer & Kershner, 2013), vicariously representing the presence of the teacher (Warwick et al., 2010) as cultural artefacts to be used as tools to mediate learning (Kozulin et al., 2003) and to enable the creation of dialogic space in which such learning can occur.

It became clear from the literature that a specific strategy might be particularly effective when interviewing children. The scaffolded focus group approach using prompts for reflection and discussion was strongly supported by MacBeath, Frost & Pedder (2009) (six prompts around the Fish), Hopkins (2008) (the Fish), McCallum, Hargreaves & Gipps (2000) (card sort) and the Teaching and Learning Research Programme (2004) as an effective way forward. For the focus group to be effective, I put in place a means for the children to reflect on their learning and then feedback to the student teacher about what they had learnt, how they had learnt it and what would they enable them to learn better. This process enabled the children to reflect on the intrapersonal plane and then interact with their peers and the student teacher on the interpersonal plane. I designed two support frameworks/scaffolds (Wood, Bruner & Ross, 1976) in the form of a sorting activity and the Thinking Fish; both of which are discussed below, for the children to be able to verbalise 'think alouds' (Mercer & Hodgkinson, 2008) in relation to their learning, that could then be fed back to the student teacher. Both bespoke pedagogical tools devised to elicit children's understanding about their learning through scaffolding their thinking, employed 'child friendly' language. A fishbone outline, the Thinking Fish was developed from Hopkins (2008) as having a visual semi-structured frame for gathering information on to during the focus group discussions. The card sort was trialled successfully by McCallum (2000); the notion of talk partners is advocated and used efficiently by Alexander (2008) and Mercer (2008). Children were used to working in this way as it is equivalent to activities in their classrooms. There is no anticipation of being able to generalise from these findings, however themes emerged from the group discussions and these are drawn out in the findings chapter.

In addition to the children requiring scaffolds to articulate their understanding of learning, the tools also had to enable the student teacher to better understand children's learning from a socio-cultural perspective. To do this the student teacher had to be able to engage with children's understanding of their own learning so as to continue to plan and teach the children, including scaffolding future learning though the ZPD.

3.9.1.2 Sorting activity

The sorting activity was the first tool for the student teacher to support them and enable them to understand the children's levels of understanding of the learning. The sorting activity was designed more to enable the children to get used to thinking and working in a different way and to develop the metalanguage required to be able to engage in the focus group discussion.

The sorting activity involved six statements about the process of learning for the children to reflect upon on the intrapersonal plane, and then verbalise their reflections on the interpersonal plane with a peer. These were:

The teacher stood at the front and told us things
We got to do lots of interesting activities
We got to work with each other
We had to think a lot but we got there in the end
We learnt something new
We all behaved and were ready to go.

This activity provided a scaffold for the children's thinking and reflection on the intrapersonal plane, then elaboration on the interpersonal plane of their own understanding of the process of learning through dialogue with a peer. There were three pairs ('talk partners', (Kagan & Kagan, 2009) within the group of six children. These statements were adapted from the questions used by the Teaching and Learning Research Programme (2004), and particularly the work of McCallum *et al* (2000), that were designed to enable children to talk about their learning and so support student teachers to understand the learning.

	What made that lesson good?
1	
2	
3	
4	
5	
6	
What others can you think of?	

The teacher stood at the front and told us things
We got to do lots of interesting activities
We got to work with each other
We had to think a lot but we got there in the end
We learnt something new
We all behaved well and were ready to go

Figure 8 Sorting activity grid and statements

3.9.1.3 The Thinking Fish

The second tool that I adapted was based on the work of Hopkins (2008) and it was the Thinking Fish (see figure 9). This is another scaffold designed to be used with a small group rather than pairs of children, thus creating a scaffolded focus group discussion with semi-structured discussion prompts. Littleton & Mercer (2013) note discussion in the focus group has the potential to extend the thinking of the children on the interpersonal plane. It has the same purpose as the sorting activity to enable the children to talk about their learning. The Thinking Fish is effectively a 'talking frame' (DCSF, 2008). It has prompts around the outside on the skeleton of the Fish to encourage the discussion. This was devised to encourage greater elaborations of the talk about learning by the children on the interpersonal plane which the sorting activity did not allow for as the latter was a more closed activity with prompts that were developing the children's metalanguage about learning as discussed. It is this tool which was taken forward into the main study due to the effectiveness of its operation.

The student teacher selected six children to be in the focus group (see above). These children participated in the focus group consistently across the period of research. The Thinking Fish was used in two ways during the discussion with the children. The first was an open question, "What worked well for you as a learner?" In this, the children had to consider what, during the lesson, had been

effective for their learning and then share their thoughts as a group. The student teacher here facilitated the discussion, annotated the Fish or supported the children to annotate the Fish themselves, depending on the ability of the children. The second question asked of the focus group of children about their learning was "What would be even better if...?" The student teacher could then either use two different Fish scaffolds, or one Fish and change colour of pen for the annotations. These questions asking children to reflect on their learning are familiar to children in the classroom as the language associated with self/peer assessment.

I recognised that this Thinking Fish process is the children talking about the effectiveness of the student teacher's practice in places and therefore this could be perceived as the children being encouraged to undermine the practice of the student teacher in the classroom. However, it is structured so that the children see it as a discussion about the lesson and what they did and so on; not about a child criticising a student teacher, which could be perceived as threatening or inappropriate. This may indicate a more subtle power shift because this entire process of the children feeding back on the lesson that the student teacher has just taught is deliberately designed as a reciprocal learning relationship: children learning from the student teacher and the student teacher learning from the children.
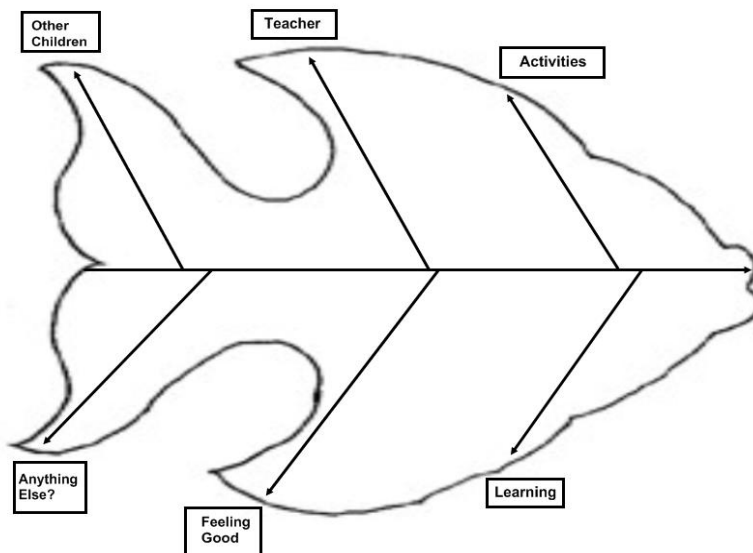
Figure 9 the Thinking Fish

During the main study some student teachers adapted the Thinking Fish to suit the conceptual area of the lesson in which they were teaching; for example if the class was studying space then the Thinking Fish was adapted into a 'thinking astronaut'. It is important to note here that the prompts remained the same. It was the picture that changed. Possible differences are explored in the analysis to see if a change in picture influenced children's constructions.

3.9.1.4 Photographic recording of focus group data

The focus group discussions were minuted in the form of photographs (Mukherji & Albon, 2015) of the tools following use by the children with the student teacher. The photographic data collection method designed for capturing the information from these two tools was intentionally straightforward and as time efficient as possible for the student teacher. It was also standard practice for student teachers on the PGCE to record children's work by taking photographs. In the photograph, the summary of the discussion was captured rather than the details. The student took a photograph of the sorted cards for each pair, after each

session and the same for the Thinking Fish after each of the two questions during the focus group discussions. It would be ideal to record discussions of the children talking, about their learning and learning processes, however, the chosen approach took into consideration the context of the classroom, the short time available to student teachers undertaking a PGCE, as well as a pragmatic solution to the complexities of data collection.

These photographs not only provided a quick and accurate way of recording the summarised outcome of what was said during the focus group and feedback sessions with the student teachers, so that actions could be followed through and learning opportunities connected. Some researchers (Open University, 2001) have highlighted minuting meetings as an efficient way of gaining an understanding of what happened rather than having to wade through long transcripts to get to the key information required. The photographs represented the minutes from the meeting of the focus groups. Clearly the disadvantage here is that the whole context cannot be re-evaluated after the event, however the 'nub' of the discussions were captured and can be returned to.

3.9.2 Reflective logs

Both the student teachers and I kept reflective logs as participants in this research and therefore our personal reflections were useful so that we could further reflect on how teacher and teacher educator practice may be developed to support learning.

Having adopted a reflexive approach to the research design (discussed above), a reflective log is a useful way for those involved with the research process to reflect on their thoughts, feelings, ideas, views and so on (Ortlipp, 2008). The goal from logs of this kind is to provide a trail of developing thinking in professional learning, directly from the participant without filtering (Ortlipp, 2008, Friesner & Hart, 2005). Through the process of writing down thoughts, ideas can be connected and reflected upon in order to develop professional practice. Both the student teacher and I returned to the same information again and again and reflected and reinterpreted in the light of new understandings (Mukherji & Albon, 2015). The reflection process itself takes time, hence scaffolding the process helps develop the awareness of a reflective practitioner (Mukherji & Albon, 2015). As a research tool therefore, reflective logs provide a useful insight into the participants' understandings, however because they are owned by the author it is

they who chose what to include (Mukherji & Albon, 2015) and the content is therefore selective. This is not unique to reflective logs as a tool, but can also be seen in responses to interview questions and questionnaires. Therefore the scaffolding of the reflections in the logs was also useful to support their depth of thinking and enable meta-thinking on the intrapersonal plane.

3.9.2.1 Student teachers' reflections

The student teachers' reflective logs comprised two sections: responses to reflective prompt and lesson evaluations (discussed below). The following were key questions served as the reflective prompts:

What were your initial thoughts about the lesson, before you received feedback from the children?

What did you learn from the feedback from the children in the focus group?

How will it inform your future practice?

How did this help the children learn?

How do you feel about working in this way?

How has your mentor supported you?

Additionally, for lesson 2 and 3 –

How did this compare to previous lessons? How do you know?

These open-ended but semi-structured questions ensured the same questions were asked. However, it should be noted that I had my own agenda (Burton, Brundrett & Jones, 2008) that focussed on the rationale for the research. Rationalisation of thoughts were encouraged here (Ballantyne & Hansford, 1995) and so the student teachers were asked to answer each question as fully as they felt able to clearly demonstrate their reflective thinking on the situation. Detail developed in these reflections over time. There was reliance here on the student teachers committing to complete the log (Burton, Brundrett & Jones, 2008). This tool was useful in order to gain an inside perspective (Hopkins, 2008) as the student teachers had been briefed that I was interested in their thinking about the process of engaging with children in this way, and they had agreed to participate in the research with this understanding. This provided enough information for the student teachers to understand the importance of completing the log; without explaining the detail of what I would be analysing from the log. This therefore minimised the opportunity for the responses in the log to be biased towards the

focus of my research. Reflective logs are advocated by Ballantyne & Hansford (1995) and Bleach (1999) as a means of understanding the thinking of the participant at any one point in time and then being able to note changes and differences as time progresses. The questions were semi-structured to cover the areas in which I was interested but also enable further personal reflections by the student teachers.

3.9.2.2 Student teachers' lesson evaluations

Further sources of data were the evaluations of lessons, carried out by student teachers after the lessons to further support their reflections on teaching and learning. These were derived from the PGCE course proformas, already embedded in school-based training practice, and served as the second intrapersonal reflective data elicitation tool in this study. This period of research occurred early in the PGCE year where student teachers still required support in their developing teaching practice. The lesson evaluation was used in conjunction with the set of semi-structured reflective questions (discussed above). The lesson evaluation proformas (table 4) is standard to the PGCE course and is completed after each teaching session. It is intended to support the student teacher to reflect upon the teaching and learning elements of the session the student teacher has taught.

Table 4 Evaluation Proforma

Evaluation of the lesson
How well did the children learn? What evidence of this do I have?
In what way(s) do I need to adjust my planning for the next lesson in this block of work?
Key points to remember
Evaluation of my teaching
Which QTS Standards did I focus on during this session?
How well did I address them? What evidence do I have of this?
How well did I teach? What evidence of this do I have?
In what way(s) do I need to adjust my teaching for the next lesson in this block of work?

The outcomes from the lesson evaluations and the reflective questions were collated on a summary grid with the reflective questions down the side and the session along the top (discussed later). This summary was then analysed for words/phrases/meanings that were about the self (the student teacher, teaching) and then reviewed for words/phrases/meanings that indicated consideration of the learners; for example. "I needed to have moved faster" or "explained more clearly". Both of these indicate consideration of the mechanics of teaching to consider the need to facilitate learning through scaffolding children's understanding.

3.9.2.3 Student teachers' lesson plans

The final component of the student teachers' reflective log was their lesson planning. The planning was carried out on standard PGCE planning proformas (appendix C). There were three different proformas containing the same information but structured in different ways to suit the subject being taught. The proforma has semi-structured prompts to scaffold the student teachers' thinking around planning for learning as they develop their understanding of children's learning. This research took place early on the student teachers' first placement and as such their understanding of planning for children's leaning was only beginning to develop. The lesson plans were evidence of the student teachers' stated intentions to enact the feedback from the mentors and children. Themes from the lesson plans were derived and interpreted within a social constructivist view of learning of student teachers' developing understanding of children's learning.

3.9.2.4 Researcher's reflections

As the researcher, my reflective log was unstructured and open-ended and contained all notes and jottings about the research project. It was intended to show my development and thinking over time in order to return to it to reflect upon its content in order to gain insights into the data collected and the process undertaken.

A further aspect of my reflective log was developed for use in the pilot study (case study one) only. It was designed to further aid the one student teacher's learning during the pilot project on the interpersonal plane; I, as tutor, provided a means of supporting the student teacher's thinking about learning on the interpersonal plane in the form of a minuted meeting with the student teacher.

The minutes of the meetings between the student teacher and me were combined with any field notes of mine that were recorded at any time when I was thinking about the student's work, and what it may mean to inform my reflective log. Whereas all other data collection methods in this research were embedded in the PCGE course, this was supplemental to the course procedures. It was intended that this meeting would scaffold the student teacher's learning and her reflections of the processes used in order to provide a deeper, richer understanding of the research context, but also, scaffold my thinking as a researcher. The minutes of the meeting were analysed alongside the comments reflective questions and lessons evaluations and compared to the mentor's comments with the intention of understanding more deeply the learning taking place by the student teacher, but this was omitted from the main study (case study two) because it was found not to add value to the research nor the student teacher's practice during the pilot.

3.9.3 Mentor's observations and feedback

The student teachers are also learners and there is, therefore, a need to scaffold their developing understanding of children's learning through their ZPD. The role of the mentor in this process is to provide a lesson observation and written feedback to conform to standard PGCE course school-based training protocols. This feedback is intended to be formative and occurs after every session taught. It should capture the essence of the lesson and the key points of success and areas for development. The observation may focus on some but not necessarily all areas. It is usual practice on the PGCE course that oral feedback by the mentor is also provided. The observation tool enabled both the collection of qualitative data (discussed here) and quantitative data (discussed below). Table 5, below, is the lesson observation proforma which the mentor completes during an observation of the student teacher teaching children. It is spread across four pages.

Table 5 Lesson observation proforma

Student		School		Subject	
Observer		Date			

	Outstanding *	Good	Satisfactory	Unsatisfactory	Evidence
Behaviour management	Outstanding rapport with the children means that behaviour management is mostly implicit, not explicit Children with challenging behaviour are handled with skill and sensitivity so that they can learn effectively	Behaviour management strategies are very effective at ensuring a positive learning ethos Behaviour of more challenging children only rarely disrupts the learning of others	Sets clear expectations for learning and behaviour, establishing a purposeful and safe learning environment conducive to learning Behaviour of some children may sometimes disrupt the learning of others	Sets unclear or inappropriate expectations for learning and behaviour Behaviour of some children often disrupts the learning of others	
Engagement of children	Teaches in a way that captures the interest of children, and is inclusive of all children.	Teaches in a way that engages the interest of children so that they become fully involved in the lesson.	Children are engaged in the lesson	Many children are not engaged in the lesson	
Talk for learning	The lesson includes debate between children and between children and the teacher which consistently encourages higher order thinking and where ideas are evaluated and improved by all High quality dialogue and questioning guides learning, with attention to individuals and groups	Talk, whether in whole class, group or 1-1 between teacher and children often encourages higher order thinking. Children engage in purposeful group talk without teacher present	Children have opportunities for purposeful talk and discussion	Children have little or no opportunity to engage in purposeful talk about their learning	
Use of resources and other adults	Makes creative, imaginative and highly effective use of resources (including other adults) in all stages of the lesson to impact significantly on learning	Makes creative use of resources Works effectively with learning support and other professionals in planning, teaching and monitoring and reviewing children's progress	Plans and uses resources efficiently, including the deployment of other adults, learning support and other professionals	Resources (including other adults) do not have sufficient impact on learning	

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Subject knowledge	Applies own depth of subject knowledge to support children in acquiring understanding and skills through application of a range of different teaching approaches to ensure that all children make the expected progress	Uses subject knowledge to find different ways of explaining or teaching approaches	Demonstrates secure subject knowledge that develops children's understanding and skills	Subject knowledge is flawed or limited	
Planning	Demonstrates clarity of links between learning objectives, teaching approaches and assessment strategies (what I want learners to learn, how they will learn, and how I know that they have, what I will do next) such that all children are able to make good progress	Learning objectives and success criteria are well specified and incorporate appropriate differentiation	Matches teaching and learning activities to the intended learning outcomes with appropriate success criteria Planning builds on children's prior knowledge	Learning objectives and/or success criteria are poorly specified Planned activities do not create opportunities for children to achieve the intended learning Planning does not acknowledge prior learning	
Individual needs	Strategies to overcome barriers to learning are highly effective so that all children make good progress	Planning and teaching includes effective strategies to overcome barriers to learning (such as low levels of literacy/ numeracy)	Recognises potential barriers to learning and has some ideas for responding to them Planning takes account of diversity and promotes equality and inclusion	The needs of some individuals or groups are not met in the lesson	
Flexibility and adaptability	Demonstrates flexibility and adaptability by changing pace, approach and teaching method in a lesson in response to what learners say and do	Shows flexibility/adaptability that takes account of the progress made by learners and matched their teaching to it, including by matching pace to learning and the use of a variety of teaching methods	Adapts teaching (eg questioning) in the light of pupil response during the lesson	Does not adapt teaching in the light of pupil response	

Assessment for learning and feedback	Teaches children to be able to explain how the teaching helped them to make progress Monitors children's progress to evaluate quickly how well they are learning so that they can change the approach during the lesson if necessary Provides detailed feedback and targets to individual learners that are focused well to ensure further progress AfL techniques are securely embedded in the trainee's practice	Monitors and assesses children's achievement and provides feedback to them that is based on the specific needs of children or groups of children and that leads to further progress Uses a range of different assessment methods matched well to the expected learning outcomes and shows an understanding of why a particular method was chosen AfL techniques are becoming embedded in the trainee's practice and have a clear impact on children's engagement and learning	Responds to individual and groups of children's questions and needs to enable children to progress and meet the learning expectations Monitors children's progress and assesses their achievement in relation to the intended learning, and provides feedback to children which aids their progress AfL techniques are being used	Opportunities to assess children's learning are missed, and feedback does not help move children's learning forward	
Progress & challenge	Ensures that all children make good progress so that they fully achieve the challenging intended learning outcomes.	Ensures that all children are sufficiently challenged and achieve the intended learning objectives.	Manages the learning environment and resources to enable all children to make progress	Inadequate/ or inappropriate challenge; some children do not progress	

Summary of strengths

Areas for development

Overall grade	Outstanding		Good		Satisfactory		Unsatisfactory	

Mentor:.. Student teacher:.. Visiting tutor:...

Date:..........................

* The descriptors of outstanding, good, satisfactory and unsatisfactory are based on Ofsted's grade criteria for *trainee teachers*.

As a standard part of the PGCE course the process of observation provides useful information to the student teachers on their performance in the classroom and the progress they are making as teachers (Open University, 2001). The mentor observes the student teacher using the lesson observation proforma above. I therefore decided to use mentors' observations, with permission from both the mentor and student teacher, as this is a process already deeply embedded in the course. Additionally, it is useful to triangulate the views of the mentors, with the information gathered from the children's perceptions and the student teachers' reflections. The lesson observation proforma was derived from the descriptors used by Ofsted for trainee teachers and from the QTS Standards (appendix D) for trainee teachers. In addition the experience of the team of professionals (school and university-based) working with the student teachers finalised this format.

Using an observation schedule in this way was derived from the literature (Open University, 2001, Pollard 2002) and Bleach, 1999). The observation was undertaken in a way that reflected the regular observation of the student teachers' practice. Observation of the student teaching provided the context. The lesson observation form is used to keep focus (Bleach, 1999). It is semi-structured in design. It was intended that this semi structured observation proformas might provide continuity between observations and observers, with the freedom to elaborate should the need arise. In working in this way, judgements were made against the preset criteria, with additional information not discounted. This makes the observation schedule manageable and effective to use and to analyse but does not discount the value of more qualitative contributions. Observations did not interfere with the teaching, however those being observed may have acted differently during the observation and hence the discussion with the student after the lesson was important. I acknowledged that it is impossible to record everything observed and that time should be allowed to collect as much information as possible (Burton, Brundrett & Jones, 2008).

3.9.3.1 'Observation system' for this research project

The system of observation of student teachers by mentors is standard practice in the current PGCE course. All mentor/observers are trained to ensure consistency in using the observation tool, as far as possible. The first part of the system begins with training the observers in using the tool; specifying the number

and length of observations and developing the understanding of the observations intentions. This takes places each year at a central venue and all mentors are invited to attend. Additional sessions are held on a one-to-one basis with mentors in school by the tutor who visits the school to support the school-based training. The training consists of approximately two hours to review the paperwork, such as observation tools and approximately two hours on a mentoring theme, for example, target setting or how to move a student teacher from good to outstanding.

As noted above, the observation sheet was designed and developed over a period of time for use on the course. Tutors, mentors and student teachers were involved in its development. The principles on which it is based are that of the grading system for student teachers as defined by Ofsted. Ofsted use a four point grading system of unsatisfactory (4), requires improvement (3) good (2) and outstanding (1). This grading system is adopted here for the individual areas observed and also the overall grade for the lesson observed. The descriptors are derived from the Ofsted guidance for evaluating trainee teacher's achievement in teaching and combined with the DfES (2007) Standards for QTS. The descriptors attempt to represent the quality of teaching and the scores capture the characteristics of the teaching in that lesson. The evidence noted is observable from the actions and behaviours directly exerted in the lesson and should correlate with the outcomes from the teaching that is the children's learning. The next step was in the design of the observation instrument itself. Therefore the observation instrument itself has 'face' and 'content' validity (Berryman & Bishop, 2011).

The observation tool is used 'in situ', during placement on the PGCE course, to capture performance in the natural environment (Hill *et al.*, 2012). The student teachers are observed teaching the class for the whole lesson in a sequence of lessons (subject of their choosing) over the course of one week. The student teacher knows the class. The mentor follows expected observation and feedback protocols consistent with the course. The sequence consisted of five lessons. The observations tool contains grades for the lesson overall and for each of the individual areas observed. These are quantitative (see discussion below). As such these grades could be quantified and compared for analysis. As a standard part of the course this provides useful information to the student teachers on their performance in the classroom and the progress they are making as teachers.

The gradings are useful here as they are already numeric. Additionally, it is useful to triangulate the information gathered here with the children's perceptions and the student teachers reflections.

Finally, trustworthiness is increased by incorporating more than one observer per lesson (Praetorius, Lenske & Helmke, 2012) in order to support personal learning and inter-observer reliability. In this case the second observer was the children looking at the lesson from the inside and it was their observations, through the feedback given to the student teacher in the focus group that enabled this further triangulation. This process is intended to improve inter-observer reliability. Further, the children's feedback, during the focus group discussions provided their observations of the lesson, and were recorded on the Thinking Fish and photographed. Together the feedback from mentors and children, and the student teachers' own reflections provided a triangle of feedback on each teaching event.

3.10 A visual representation of the complexities of the project

Figure 10 below represents the complexities in the relationships between the aspects of this research project. However it also provides a map through those complexities in demonstrating how the individual elements described earlier connect together:

- the black text indicates the standard practice expected as part of the course requirements.
- the red text indicates a connection between social constructivist theory and the classroom practice of the student teacher.
- the blue text indicates the action research cycle.
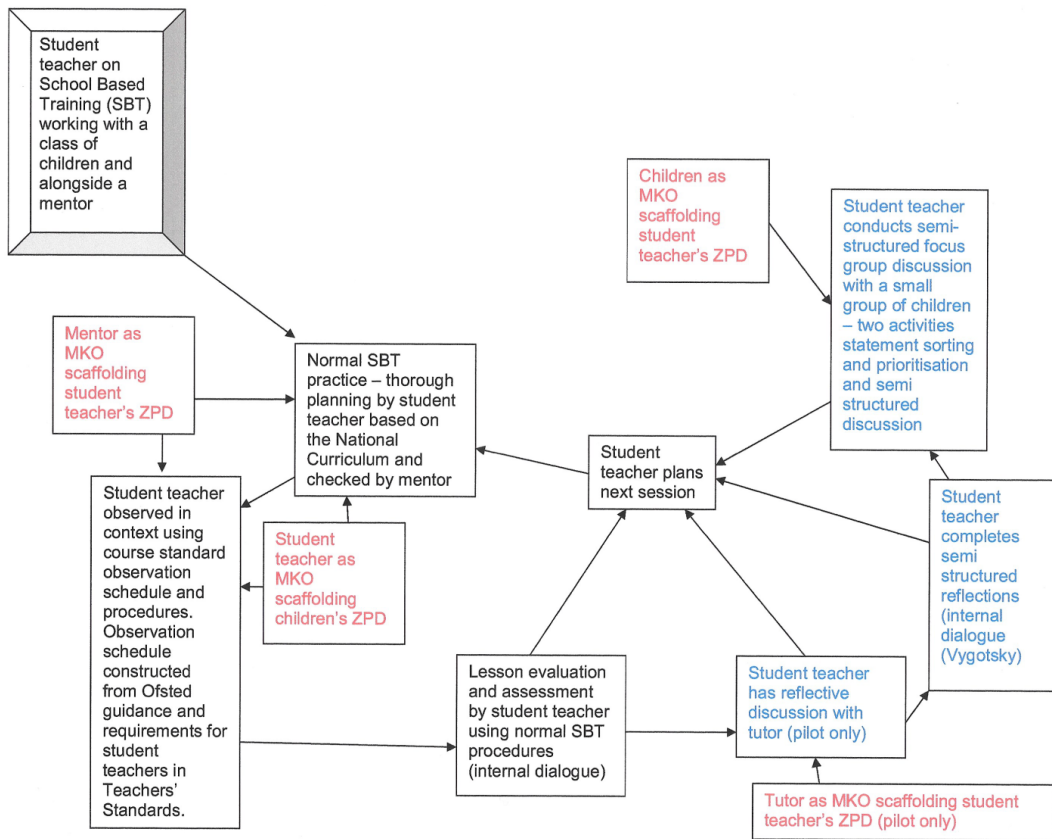
Figure 10 Map of the project: visual representation of the complexities of the research

In figure 10 above, the starting point is the 3D brick in the top left hand corner. From here the student teacher is placed in to a school placement with a class of children and a mentor. Moving along the student teacher begins to plan lessons for the children in the classroom with the mentor observing, guiding, supporting as appropriate. The student teachers are observed in practice and scaffolded in their development by the MKOs (children and mentor) who guide them through their ZPD, as indicated on the left hand side of the diagram). The central area and the right hand side of the diagram, recreates a simplified version of the action research cycle (discussed earlier): the student teachers plan, teach and reflect upon teaching and learning; receive feedback about their developing practice as teachers from mentors and children (as MKOs); to plan the next lesson in the sequence.

In representing the project visually in this manner it is intended that the complex layers of interactions between research participants can be more clearly understood but also that visual representation enables those complexities to be seen more simply.

3.11 Ethical considerations

In order to ensure that ethical standards are upheld in this study the BERA guidelines (available at https://www.bera.ac.uk/researchers-resources/publications/ethical-guidelines-for-educational-research-2011) have been followed. The participants and the University ethics committee were all provided with information to understand these particular case studies. The participants were informed to prepare them for their participation in the study. The University gave ethical approval. Ethical approval documentation can be found in appendix E. Care was taken that the research was not affected by self interest of, or harm to, any participant (Kumar, 2011). Therefore informed consent was an essential part of the process; ensuring that all participants were adequately aware of the purpose, role and potential effects of the research (Cohen, Manion and Morrison, 2007). The student teachers and the mentor entered into the research voluntarily. The Head Teacher of the school represented the children as gatekeepers through the Partnership Agreement between themselves and the University (appendix F) and gave informed consent via the Partnership Agreement held between the University and the school. An important aspect to make explicit was the nature of informed consent (appendix

A).   This is reviewed, updated and signed by all parties on an annual basis. It allows that data collected in school as part of a student teacher's daily practice or academic work can be utilised at the university. This negated the need for individual permission to be sought from the children as the Head Teacher acted on their behalf. The gatekeepers were made fully aware of the nature of any research and the implications of it through the student teacher working in the school. However the mentors and the student teachers gave informed consent individually, as already explained.

Participants entered into the research voluntarily, without pressure or incentives. The research was structured so that the mentor, student teacher and the children would not have to do any more than take part in activities that were their normal working practice, or similar to their normal working practice. For example, the focus group content was different to the normal working practice, but the children were used to working in a small group with the student teacher which was normal working practice. This minimised harm, discomfort, anxiety and so on (Kumar, 2011) and encouraged non-malificence. This process was explained face to face and in writing through the informed consent (appendix A). It was made explicit to the participants that they may withdraw at any time, without prejudice, that they could ask questions throughout the process and that they would be anonymously referred to in the different forms of writing and observations. In addition the children had this explained to them before the first focus group session, in appropriate language (appendix G). The student teachers anonymised the children by using only initials, first names or pseudonyms in line with the normal practices in their school context. I anonymised the student teachers through allocating them an alphanumeric code relevant to their subset characteristics. I also anonymised the mentor by referring to them as 'mentor', rather than by name, and connecting them to the code of the student teacher, for example, mentor of MEG14.

One issue that needed to be borne in mind was the power relationships between tutor/researcher and student teacher as well as student teacher and mentor and children, particularly with regard to the student teachers being concerned that their involvement may influence their success on the course (Cohen, Manion & Morrison, 2007). In order to ensure that the participants were not exploited by me, I did not impose additional requirements on them during the research. This enabled a 'modus operandi' to be adopted. This meant that the student teachers

followed the course protocols – planning, teaching and evaluating lessons, reflecting on their practice; the mentor provided feedback in the recognised format for the course and to the student teacher following observations taking place. In this circumstance the tutor is also an active participant in the research as I am the researcher.

For these reasons the following precautions are explicitly highlighted:

- I situated myself deliberately in the unknowing position in order to empower the participants as experts in their own situations to feel able to express their understandings through a relationship of trust and confidence rather than judgement.

- all student teachers were asked to participate and none were forced to do so.

- all participants were asked to operate within the normal activities expected of their classroom interactions and practice.

- in the main study, the selection of the final sample of student teachers was made after all work had been marked and moderated.

- participants were advised of confidentiality and anonymity.

- the children were told that they would be able to leave the focus groups if they wanted to do so, and that there would be no consequences if they did so. Permission from parents was not necessary as the children were met in groups in the classroom.

- all participants knew that there would be no judgements passed on their abilities.

- information was stored in a password-protected computer only accessed by me.

As already discussed, power was a vital area to consider when researcher and participant are not on equal terms (Cohen, Manion & Morrison, 2007) (see also earlier section in methodology). Therefore decisions were made about how the confidential information provided was used (Cohen, Manion & Morrison, 2007, Kumar, 2011). This meant that the research tools (see earlier) used to collect data were all designed with the user in mind for familiarity and ease of access to

enable the process to be as naturalistic as possible. In using the data that the participants have constructed through recording systems (the research tools) that are employed during their normal working practices, there can be no doubts about what the data is that is being used in the project. It also means that the participants understand the data and the recording process because it is they that have recorded the data themselves. This enables the participants to be informed further and thus helps lessen the power differential.

3.12 Methods of analysis

3.12.1 "By process of analysis"

There was no right or wrong way of interpreting the data however every attempt was made to represent it fairly and communicate what it revealed as clearly as possible (Patton, 1990:372). Picking up on the point of representing the data fairly, this was achieved by attempting to ensure trustworthiness (discussed earlier) of interpretation (Robson, 2011) which Robson *(ibid.)* described as ensuring that the analysis and interpretation of the data is of 'quality'. In order to ensure the interpretations were trustworthy, I had to consider my reaction to the data. First impressions, reactions to instances in the data set or excessive confidence in the data, can lead to the analysis being of lower quality and therefore be less trusted as research. All data has an effect on the research and the researcher has an effect on it, particularly when adopting a reflexive approach. It was important therefore to minimise the risk of these effects by adopting an analytical research method which supported the interpretation of quality data that is triangulation (see earlier discussion). In addition, I ensured that I was transparent (Weber, 1990) in handling the data, particularly when interpreting meaning or applying statistical analysis to ensure trustworthiness.

The act of interpretation includes questioning the data itself, as well as being part of the triangulation process. Patton (1990) poses that the act of interpreting data serves three purposes: to confirm what is already known or hypothesised, to disabuse or refute what is already known or hypothesised and to illuminate notions that have not previously been considered. In asking questions of the data, themes could be identified (Robson, 2011) and differences and relationships could be identified (part of the triangulation process). In looking for differences or deviations it helped to rule out threats to trustworthiness of

interpretation of the data as they are incorporated and analysed within the data set and considered as part of the picture that is created. Indeed considering data that was missing was also useful in the questioning process in order to establish reasons that further confirmed, disabused or illuminated. Part of the questioning process was the analysis and presentation of the data to express the points under discussion. It was therefore important to have a transparent process of data collection and analysis in addition to collecting a comprehensive range of data from a variety of sources in order for interpretation and triangulation. Robson (2011) urged paying special attention to 'outliers' in the data to try to uncover objective reasons why these might be. It was also important to consider these as they can distort data and thus lead to conclusions which are skewed.

There were a number of data sets which had to be analysed in this research, as detailed in table 6 below.

Table 6 Data sets analysed

Participant	Data Set	Method of Analysis
Children	Feedback in the focus group using: Sorting activity (pilot only) Thinking Fish	Content/thematic analysis including frequency counts of themes
Student Teachers	Reflective logs	Content/thematic analysis including frequency counts of themes
Mentor	Observation feedback	Content/thematic analysis including frequency counts themes Quantitative analysis of grades

All data sets were analysed in similar ways.

3.12.2 Analysis of qualitative data

Patton (1990:381) stated that *"There is no right way to go about organising, analysing and interpreting qualitative data",* however the advantages and disadvantages of thematic analysis, were considered before adopting the approach in this project. Thematic analysis is flexible and accessible making it easy to communicate the data through summarising key features using a principled approach. Communication is central to human interaction (Weber, 1990) and to the principles embedded in this project through social constructivism. On the other hand it can be descriptive and hard to decide what is important from the magnitude of data collected. This method was adopted in this project from consideration of the data. There was a need to consider the content of the observations, reflections and feedback. There was a need to reduce the data into collated formats in order to make meaningful correlations. A possible disadvantage could be perceived here (Weber, 1990) as the meaning of words are interpreted by the analyser, words can be ambiguous, and so care needed to be taken to ensure that the information was collated in an inclusive way during this process.   Through developing the thematic coding when working with the data it was evident that the codes were inducted from the data itself (explained below).

Moreover an adapted template by Tharp & Gallimore (1998) of Vygotsky's theory was used to aid interpretation of the data (table 8, discussed later below). Relating the outcomes of the thematic analysis to this external criterion may also be seen as adding further trustworthiness. The deliberate comparison of themes to this framework ensured that I maintained a focus on the social constructivist nature of this research (Patton, 1990, Robson, 2011).   Finally, the thematic approach to interpretation enabled the reports from the participants in the research (children, mentors, student teachers) to express their experiences and realities to build a logical chain of evidence (Robson, 2011) from which to draw meaningful interpretations.

The actual process of thematic analysis was developed from the theoretical processes for content analysis described by Weber (1990), Robson (2011) and Patton (1990) (appendix H). Table 7 below shows the steps that were taken in the actual process of thematic analysis and as can be seen, they mirror the

theoretical process. The steps here are exemplified through the discussion below.

Table 7 Process of thematic analysis undertaken

RIGOROUS, COMPREHENSIVE ANALYSIS TO ENSURE TRUSTWORTHINESS	**Process steps of thematic analysis** adopted in the research
	- Collect data from literature - Highlight key phrases - Identify patterns, sequences, themes, differences - Add 'memos' - Test in pilot and adapt - Summarise data – counts/frequencies/mean/ range/variance/graphical display - Identified missing data - Identified themes under data sources and research questions - Frequencies for 'inducted' themes - Broader categories derived with comparison to learning theory - Add 'memos' - Quantitative analysis – mean/range/variance/ graphical display - Interpret data – Deviations/missing data/negatives or opposites/ outliers/repetition/rival explanations/surprises - Question data – own, others, hypothetical - Factoring – underlying reasons? - Triangulation of data – constant comparison (data to data and data to theory) - Theory connections

The process began by reading literature around the context and the field. The information critically analysed in the literature was then separated into themes: children talking about their learning; student teachers' developing understanding about learning; and mentors' support of student teachers' professional development (refer to context and literature review). The first step when working with the data was to review all the qualitative data from mentors' observations,

student teachers' reflections and children's feedback with the research questions in mind, to identify key themes, specifically considering:

- how the practice of the student teachers had changed as a result of this intervention,
- the progress in student teachers' understanding, and
- the deepening of children's learning.

Each set of qualitative data from each of the participants was taken separately to begin with to identify common themes from each of the participants. This initial approach to thematic analysis began with a frequency count of terms mentioned and segmented by participant (discussed below). As understanding developed, so did 'memos' around what was being read, annotating thoughts and connections made between experienced practice and ideas stated in the reading.

Data were tagged and coded to identify phrases, relationships, patterns, themes, differences and sequences to identify categories and describe the characteristics of the data collected. Data were then clustered, counted, compared and contrasted in order to build a logical chain of evidence linked to theory. The advantages of this approach are that the data is efficient to handle, and it enables qualitative as well as quantitative comparisons to be made. In addition, data could be measured over time (Open University, 2001). The nature of working with the data in this way enabled each type of data to inform the other. Due to the nature of the data collected from the Thinking Fish, sorting activity, observations and so on, as already described, it is important to acknowledge the place of language as a thinking tool in the data elicitation and analysis process. The language referred to here is that used by the participants in the forms of their responses to the data elicitation processes: mentors' observation, student teachers' reflections, and children's feedback. Language is not only a means of sharing information and experiences but also as a means of making meaning together (Vygotsky, 1978). The data collected therefore, from the methods described earlier allow this to happen in the analysis stage of the research and acknowledge that language is both temporal and cumulative in nature (Open University, 2001).

In this case, thematic analysis shaped around the stages of learning and development (Vygotsky, 1978) was used as a framework for analysing data. This

fitted into the social-constructivist dimensions of the research and examined what was said, why it was said and how the shared understanding was developed (Open University, 2001). There were thick data from the group interview, reflective logs and observations which could be triangulated, thus adding trustworthiness to the interpretation of the findings. This was devised and used during the pilot study to interpret the data collected in order to look for meaning(s). It was useful to use a frame such as this, to compare the data to well-known/accepted ideas, particularly as this research was about and was framed in the context of a socially constructed learning approach. In working in this way, the children and the student teachers took the role of the narrators; the designed framework (Vygotsky, 1978) provided a frame for interpretation and my role was therefore to draw conclusions (table 8). This was one way of making sense of the process of learning from a social constructive perspective and of making sense of the process of learning from both the student teacher's and the children's perspectives.

Table 8 A categorical model of social constructivist learning theory (Vygotsky, 1978) and framework for analysis of data collected (adapted from Tharp & Gallimore (1998)

Stage 0	Stage 1 Assistance by More Knowledgeable Other (MKO)	Stage 1/2	Stage 2 Assistance by self	Stage 2/3	Stage 3 Internalisation, automatisation and appropriation	Stage 3/4	Stage 4 Deautomatisation. Recursive loop begins as required
Personal	Interpersonal			Intrapersonal			Cultural
Feelings of boredom				Feelings of anxiety		Feelings of success and/or elation	
Cannot do unaided	Facilitated, collaborated, time for re-explanation. Can do but dependent.	Potential to do Moving towards autonomy Increasing challenge				Can do unaided	
	ZONE OF PROXIMAL DEVELOPMENT – Vygotsky (1978) – Scaffolded by MKO – Wood *et al.* (1978) What can be achieved with assistance (Real versus potential)						

Table 8 (above) is a visual representation of the process of learning through the ZPD from a social constructivist learning theory perspective (Vygotsky, 1978). This has been set out as a categorical model that forms the framework for the analysis of this data. This was adapted from the work of Tharp & Gallimore (1998) that visually represented the key notions of the theory. Moving across the columns, the learning processes and locations of learning (interpersonal, intrapersonal and cultural) identified are those highlighted in this theory *(ibid.).* They have been numbered one to four. In this visual representation these processes have been labelled stages. Although it might appear that the use of the term stage implies that learning occurs in discrete steps and in sequential order, this is not the intention here. The framework has been used as an artefact to gain some understanding of the children's progress in learning. I acknowledge that there could be an implication that these 'stages' happen in a distinct order progressively through one to four, however it provides a pragmatic way of capturing and assessing an understanding of children's progress in learning across time. As already discussed the progression through from dependence to autonomy might more appropriately be seen as a 'helix' through time (Littleton & Mercer, 2013) to represent movement backwards, as well as forwards movement through the ZPD. What I was trying to do here was view a dynamic process and apply a means of assessment that would show whether learning had occurred. As soon as I applied a framework, I acknowledged that there is a possible implication that the process is static rather than dynamic. However, if a framework is not adopted I found it very difficult to show progress.

There are three additional stages, not highlighted in social constructivist theory, numbered one/two, two/three and three/four. These were included to make clear where data were analysed and could not be categorised specifically to one stage of the social constructivist theory but rather straddled two stages at any one time. The subsequent rows of the table exemplify the social constructivist notion of learning by providing some details. These details were useful as comments in the data related directly to them and as such detailed categories were required for analysing.

There is a difficulty assuming stages to describe how children learn. Feldman, (2004) pointed this out clearly with his critique of Piaget's model of child development. Whilst Piaget's model relates to children's maturation before moving to the next stage in development, comparisons can be drawn here. By

including stages in any model describing children's learning and development there is an over simplification of the complex processes involved. The stages imply sequential steps in learning and that learning is linear, and that completion of one stage is the precursor to the next stage. This raises questions about what the requirements are for completing each stage, how the transition between stages might occur and what role expertise in one stage might play. Further, stages underestimate a child's ability to learn or to develop (Feldman, 2004). If a social constructivist view of learning underpins a research study, then acceptance that children are all different and environmental, social and cultural aspects affect their learning. This can impact therefore on which stage a child might be in. However, the nature of Tharp & Gallimore's (1998) visual representation of Vygotsky's theory for this research was useful because each stage demonstrated a different aspect to social constructivist theory. Having adopted this approach and with a social constructivist view of learning in mind, the stages were therefore seen as fluid rather than sequential and represented tools to aid the children's thinking rather than a step to be completed.

3.12.3 Analysis of quantitative data

During the mentors' observations, grades were allocated by the mentor to the student teachers for their overall performance in the lesson and also in ten individual areas (see research tools). Student teachers were graded as unsatisfactory, satisfactory, good and outstanding and these are given equivalent numerical values four, three, two and one respectively (four being the lowest grade of unsatisfactory and one being the top grade of outstanding). However, in addition there were also sub-grades or half grades, allocated by the mentors, which indicated that a student teacher was on the borderline between whole grades; that is to say that, a numerical grade of three point five would indicate that student teacher was between unsatisfactory (four) and satisfactory (three), two point five indicates the borderline of satisfactory (three) and good (two) and one point five the border of good (two) and outstanding (one). Thus the grading occurs on a seven point scale:

Table 9 Grading scale for observations of student teachers by mentors

Unsatisfactory		Satisfactory		Good		Outstanding
4	3.5	3	2.5	2	1.5	1

Keeping the research questions in mind (changes to the student teachers' practice, progress in student teachers understanding and deepening of children's learning), it was important to indentify measureable progress and to consider whether there was alignment between the measures of progress and the evidence from the data. One way to consider the data was to review the average points score. This was calculated for both the overall grade and for the individual areas observed by the mentors. It was the mean of the grades allocated by the mentor across the week for both the overall grade and for each of the individual areas. Average points score assumed a like with like comparison, but that was not always clear from these analyses.

Proportional gain helped to demonstrate the level of understanding that student teachers have about children's learning. However it needed to be considered alongside the qualitative data sets in case it demonstrated a more rounded view of their level of understanding developed about children's learning both from a subset perspective and as individuals. Proportional gain was calculated as detailed below.

The initial grade given at the start of the intervention was considered to be the starting point from which to measure proportional gain. This 'base grade' was considered and the number of possible steps of gain identified to ascertain the total possible gain (see table 10 below). For example, should a student teacher have been awarded a grade of satisfactory with the numerical equivalent of three, he/she could make progress to achieve outstanding (the maximum grade of one) in four steps (2.5, 2, 1.5 and 1) thus his/her total possible gain is four, and so on. Then the actual gain was considered in the same way that is the number of 'steps' progress made between his/her start or base grade and his/her end grade.

Table 10 Possible steps of gain from start grade

Base grade		Possible steps of gain	Total gain possible
4	unsatisfactory	3.5, 3, 2.5, 2, 1.5, 1	6
3.5		3, 2.5, 2, 1.5, 1	5
3	satisfactory	2.5, 2, 1.5, 1	4
2.5		2, 1.5, 1	3
2	good	1.5, 1	2
1.5		1	1
1	outstanding	0	0

Subsequently the actual gain was divided by possible gain and multiplied by one hundred to equal the percentage proportional gain:

For example, student teacher X started with a base grade of three (satisfactory). At the end they attained a grade of two (good). They made two actual points progress. Potentially they could have made four points progress to achieve the top grade of outstanding (one). So I divided two (actual gain) by four (possible gain) and multiplied by one hundred to find a percentage proportional gain of fifty percent. In other words student teacher X made a fifty percent gain on what it was possible for him/her to achieve. What had to be borne in mind here was that there was a ceiling effect. For example, the student teachers who were already operating at a grade one (outstanding) at the start of the intervention, could not make any more progress, thus they hit the ceiling. Particular attention was paid to this when interpreting the outcomes of the data in the analysis.

As discussed earlier, the data from the sample were analysed as a total but also in groups as defined by the Ofsted (2009) descriptors of vulnerable groups, for example MEG, SEND and so on. The data from the subsets identified were interpreted to help to build a bigger picture of the cohort and their developing understanding as student teachers and of children's learning. The data analysis does not compare group to group but rather considers how the interventions in this project may have impacted on the progress and understanding of the student teachers. It may also reflect that the intervention appears to be more effective for

some groups than others or in some areas of practice than in others. However, it must be borne in mind that the data, in these small case studies, relies on the views of the participants.

3.13 Summary

The methodology and the methods within it were complex. However, in this chapter I have set out my approach to the research as clearly as possible. In addition I have discussed the participants, research tools and ethical issues that I considered. Finally, I conclude with a review of how the analysis of the data was undertaken.

Chapter 4 - Findings from the pilot study (case study one)

4.1 Context for data analysis

This was a study of a student teacher attempting to engage with the learning of her children day by day so that she could better scaffold further learning. The order in which I have presented the findings below therefore reflects the materials emanating from the participants that were used to inform the student teacher's understanding of children's learning; then follows a description of the data associated with the tools that were used to encourage the student teacher's reflective thinking on the intrapersonal plane and planning for the following day's lesson. All data were understood in the context of the activities undertaken by the student teacher during classroom sessions as part of school-based element during her PGCE year of training, and in the light of the student teacher's developing understandings and interpretations of the feedback from the children and mentor. The activities, the sorting cards and the Thinking Fish, used as research tools were designed to help the student teacher understand the learning of the children and also to help the children discuss their learning. At the end of each lesson the student teacher took the children's comments from the focus groups and used them as part of her evaluation of teaching and planning for the next lesson. In addition data were elicited from the lesson observations undertaken by the mentor of the student teacher and the evaluations and reflections made by the student teacher, both independently and with the support of me, in the role of university tutor.

4.2 The sorting cards activity

As noted, data were elicited from a series of focus groups which were held after each taught session with the student teacher. The statements in blue, in table 11 below, were taken directly from the paired activity at the start of the children's focus group and have been mapped onto this model of social constructivist learning theory (Vygotsky, 1978) to enable thematic analysis, by eliciting themes from the data. This showed the connection between the activities undertaken by the children and the social constructivist learning theory (Vygotsky, 1978). It also demonstrated how the different statements fit into the learning theory at different levels, showing that some of the activities described in the statements require

children to be working at higher stages within the learning theory framework. Exemplar raw data can be seen in appendix I.

Table 11 below shows the sorting activity statements (in blue) mapped onto the representation by Tharp & Gallimore (1998) of social constructivist learning theory (Vygotsky, 1978). The statements are listed under the stages of learning to which they relate as depicted by the model. For example the statement "we got to work together" which is associated with assistance by an MKO in Vygotsky's theory is listed under stage one. This is where learners would typically be operating on the interpersonal plane. The intermediate stages of one/two and two/three were included as one of the adaptations to Tharp & Gallimore's (1998) model to try to address any overlaps between stages. Stage one represents a learner who is further away from autonomy and is in the early stages of progress through his/her ZPD, in terms of his/her learning and understanding; whereas stage three represents a learner who has reached autonomy, perhaps having moved through his/her ZPD to this point, perhaps being already at this stage in learning. Stages nought and one indicate that the learner is engaging with learning in his/her ZPD at an instructional level. Stage one/two indicates that the learner is beginning to actively engage with the learning. Stages two, two/three and three indicate a level of challenge in learning which includes some self monitoring of the learning itself. This internal dialogue and meta-level of thinking is the learner operating on the intrapersonal plane. Stage four is blank because whilst Tharp & Gallimore (1998) included it in their representation, the study was not long enough to take account of assumptions of deautomatisation and recursive loops.

Table 11 The sorting activity statements by stage of learning - adapted from Tharp & Gallimore (1998)

Stage 0	Stage 1 Assistance by More Knowledgeable Other (MKO)	Stage 1/2	Stage 2 Assistance by self	Stage 2/3	Stage 3 Internalisation, automatisation and appropriation	Stage 4 Deautomatisation. Recursive loop begins as required
We behaved well and were ready to go	We got to work with each other		We learnt something new	We also worked independently		
The student teacher stood at the front and told us things		We did lots of interesting things	We had to think a lot but we got there in the end			

Each day, following the taught lesson by the student teacher, three pairs of children (six children in total) ranked the sorting card statements in order of importance to their learning. The sorting card statements are detailed in blue in table 12 below. Each day the children reconsidered the position of each of the statements on the sorting cards to demonstrate their perspectives of the content, opportunities and context provided by the lesson for that day. The position they recorded on the grid relates to the points awarded, for example if one pair of the children put a statement in third place in their order of importance then three points were allocated to the statement for that day. Each pairs' positions for each statement were then added together to get the overall 'value' for the focus group; therefore the lower the cumulative score overall for each statement, the higher the importance to the six children in the lesson that day.

Table 12 below indicates the daily position of the sorting card statements by each of the pairs. A mean rank order was calculated for each statement each day to chart the thinking of the children about their learning over the course of the week. For example on day one, for the statement "we got to work with each other" was ranked two by one pair of children, three by another and one by another. The mean rank for that statement for day one was therefore two ((2+3+1)/3=2).

Table 12 The daily rank of the sorting cards by each pair on each day

Statements from sorting activity	Day 1				Day 2				Day 3				Day 4			
	Rank Pair 1	Rank Pair 2	Rank Pair 3	Mean Rank	Rank Pair 1	Rank Pair 2	Rank Pair 3	Mean Rank	Rank Pair 1	Rank Pair 2	Rank Pair 3	Mean Rank	Rank Pair 1	Rank Pair 2	Rank Pair 3	Mean Rank
We did lots of interesting things	1	4	5	3.3	5	1	2	2.6	3	2	5	3.3	5	2	4	3.6
We got to work with each other	2	3	1	2	2	4	6	4.3	1	1	1	1	1	4	3	2.6
We learnt something new	3	2	2	2.3	1	2	1	1.3	6	5	4	5	4	5	1	3.3
The student teacher stood at the front and told us things	4	1	4	3	3	5	4	4	4	6	6	5.3	2	6	3	3.6
We behaved well and were ready to go	5	5	3	4.3	4	6	5	5	2	4	3	3	6	3	6	5
We had to think a lot but we got there in the end	6	6	6	6	6	3	3	4	5	3	2	3.3	3	1	2	2
We also worked independently													Additional statement =7 Added by one pair of children on the final day			

Note: there was no data from the sorting activity recorded for day five by the student teacher hence it is not included in the above table

Table 12 above indicates that on day one the most important aspect to the children's learning from their perspective was working together (that is with an MKO), and the least helpful was thinking a lot (the challenge experienced as progress is made during the ZPD). On day two the most important aspect to the children's learning from their perspective was learning something new (recognition that they were learning), and the least helpful was behaving well (a social factor influencing learning). On day three the most important aspect to the children's learning from their perspective unanimously was working together (that is with an MKO) and the teacher standing at the front (recognition that learning is active, perhaps socially constructed). On day four, the most important aspect to the children's learning from their perspective was having to think a lot (the challenge experienced as progress is made through the ZPD), and the least helpful was behaving well (an environmental factor influencing learning).

The data elicited during the sorting activity indicated that the children became more aware of their learning and how they learnt over the course of the week. This may indicate that giving them prompts, in the form of statements to sort into rank order, may have enabled them to have the tools to think more clearly about what scaffolds their learning. This was evidenced in the data from the changing importance placed on 'working together, student teacher stood at the front and readiness to learn'. These statements fluctuated position indicating that the children had very different needs in their learning at different times during the sequence of lessons and as such the value to them of receiving support from an MKO changed depending on their learning needs. In comparison to social constructivist learning theory (Vygotsky, 1978) this would indicate their movement from the intra- to interpersonal planes and back again depending on support required to move from dependence towards autonomy. One striking change is that on day one the statement "we had to think a lot but we got there in the end" was least important to their learning, but by the final sorting activity this statement was the most important to their learning. During this activity the children recognised an increased importance for more challenge and more autonomy in their work which could indicate their movement through their ZPD towards autonomy in their own learning. Possible explanations for these changes in the children's, and the student teacher's thinking were understood within the context of the activities of the student teacher which are discussed further below.

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4.3 The Thinking Fish

The visual representation of the Thinking Fish was accompanied by a series of discussions which the children themselves recorded on the Thinking Fish. The final summarised outcomes of their discussion as a group were recorded on the Fish which was photographed as data for this study. These findings were then analysed against the categorical model of social constructivist learning theory (Vygotsky, 1978) (table 13 below) as described by Tharp & Gallimore (1998). Table 13 below demonstrates how the responses to skeletal prompts (in blue) around the edge of the Thinking Fish map onto the categorical model of social constructivist learning theory (Vygotsky, 1978). The prompts around the skeleton of the Thinking Fish scaffolded the children's articulation of their perceptions which were then sorted into key categories. This showed the connection between the responses to the skeletal prompts by the children and the understanding of their learning (Vygotsky, 1978). It also demonstrates how the different children's perceptions fitted into the learning theory at different levels, showing that some of the children's perceptions described in the statements required children to be working at higher stages within the learning theory framework.

The prompts are listed under the stages of learning to which they relate as depicted by the model. For example the statement "children" is associated with assistance by an MKO in social constructivist theory (Vygotsky, 1978) is listed under stage one. This is where learners would typically be operating on the interpersonal plane.

Table 13 The Thinking Fish activity compared to a categorical model of social constructivist learning theory (Vygotsky, 1978) - adapted from the work of Tharp & Gallimore (1998)

Stage 0	Stage 1 Assistance by More Knowledgeable Other (MKO)	Stage 1/2	Stage 2 Assistance by self	Stage 2/3	Stage 3 Internalisation, automatisation and appropriation	Stage 4 Deauto-matisation Recursive loop begins as required
	Children		Learning	Activities Feelings		
Student Teacher	Activities Feelings		Learning Feelings			

Table 14 below is a summary of the Thinking Fish activity from each day completed by the children in the focus group. The first column (in blue) shows the prompts around the skeleton of the Thinking Fish to scaffold the children's articulation of their perceptions which were then categorised, following the adaptation of Tharp & Gallimore's (1998) model. The Fish was used twice; first to report on what had gone well (purple below) in the lesson and then to report on what could have been improved (brown below). It recorded the children's perceptions of the lesson each day and captured these perceptions in their words. It indicates the suggestions from the children in the focus group about what went well and what could be improved to scaffold their learning in the future. The table shows what the children were able to articulate on the interpersonal plane in response to the scaffold of the Thinking Fish. In the summary here, wording has been altered slightly for clarity of expression only. Exemplar raw data can be seen in appendix I.

Table 14 Daily focus group Thinking Fish responses

Prompts on Thinking Fish	Day 1		Day 2		Day 3		Day 4		Day 5	
	What went well	What would you improve	What went well	What would you improve	What went well	What would you improve	What went well	What would you improve	What went well	What would you improve
Children's actions		Independence		More activities		Support struggling children	Work with different children Enjoy	Go to carpet if stuck Suggest level to aim for More with others		
Student teacher's action	Mixed groups	Choice	Challenge yourself	Get on the floor with the children and explain	Not stood at the front to much	Challenging a bit more	Good explanations Suggestions to check work		Teaching improved	
Planned learning activities	Choose own level Role play	More writing Go to the carpet if don't understand	More activities	Rewards	Harder activities	Make sign to protest Some want easier and some want harder work	Harder Difficulty perfect	Do more challenges	Really good	

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Children's learning	New things		Confusing		Learnt a lot	Make harder	A bit easy Learnt something new		Focus group helped student teacher understand how we learn	
Feelings of children about the process	Good Easy		Good Happy	If you think you work hard you feel good	Brilliant Fantastic It was harder More fun		Difficulty just right Good Fantastic Brilliant Amazing Excellent		Helped learning Fantastic Helped a lot Able to help others	
Other	Different topics on different tables	Timetable		Soft cushions not chairs Independence	Too easy	Use iPads Make harder	Do it again	Toilet Pass	School council is about choosing resources, this focus group is about learning	

The data elicited during the Thinking Fish activity appeared to indicate that the children recognised and verbalised the need for a changing role of the MKO in their learning. They recognised an increased want to be working independently over time, which may indicate their progress through their ZPD towards autonomy. However they also made suggestions about the children requiring more support from the student teacher, thus evidencing their understanding of the importance of an MKO to learning. However what these data also appeared to show was that the role of the MKO changed depending on the level of challenge faced and their perceived feelings of confidence. In other words the MKO scaffolded the children's learning experience in the ZPD. In addition, the children recognised that they could do more in that they commented early on that the work is 'easy'. This indicated that the children had an understanding of their own level of understanding and that they recognised that "thinking a lot" is an aspect of learning. Therefore the children understood that metathinking about their own learning on the intrapersonal plane in their ZPD is essential to learning. Further, the request for a reward for their efforts diminished during the week indicating that success became the intrinsic motivator thus fulfilling the drive towards a satisfaction intrinsically of self, rather than extrinsically.

In addition, the children were seen to scaffold the student teacher's learning by suggesting strategies from their own experience of learning situations which helped the student teacher to help them learn more effectively. Examples of this included a big clock to show the amount of time left, and anyone who was stuck to go and sit on the carpet. These were examples of the children as the MKOs scaffolding the student teacher's development through her ZPD. The value of this process to the children and the importance of children's voice being heard and responded to, was heralded here in that the student teacher noted, in her reflective log, that one child felt the Thinking Fish was more useful than the school council because it directly affected her learning. She said (day five focus group), *"At school council we buy resources but in the focus group it's more about how we like to learn."* Possible explanations for changes in the children's, and the student teacher's thinking were understood within the context of the activities of the student teacher which are discussed further below.

The significance of these data were the actions taken by the student teacher to incorporate the children's views about their learning into future lessons. This

indicated that the student teacher was prepared to learn from the children as MKOs in some instances in the classroom, but also that the student teacher recognised the importance of harnessing the children's understanding of their learning needs in furthering their learning in subsequent lessons and the future. In addition, the planning demonstrated an increasing understanding of the learning of the children through the scaffolding of their learning experiences. This indicated not only an increased awareness of her role as MKO to the children but also how her reflective practice was supporting the development of the learning of the children.

4.4 Reflective log

4.4.1 Lesson evaluations

The data in table 15 (below) is a summary of the student teacher's own evaluation following the teaching of the session each day. Exemplar raw data can be found in appendix J. The first column demonstrates the prompts provided for the student teacher to support their thinking when completing an evaluation of the lesson. This first part of the evaluation (part a) was focussed around the student teacher's evaluation of the children's learning. Therefore the prompts scaffold the student teacher's reflections on the intrapersonal plane about the learning of the children, and the possible changes in planning for children's learning that they might consider in the next lesson as a result. In the summary here, wording has been altered slightly for clarity of expression only.

Table 15 Data from the lesson evaluations (part a)

Evaluation of Lesson	Session 1	Session 2	Session 3	Session 4	Session 5
How well did the children learn?	Recapped and reinforced Identified gaps in children's understanding	Learnt a lot and eager about fair trade Children felt unchallenged yet they didn't go beyond first objective	Children from focus group explained reasons to choose challenge – subsequent attitude change	Children learnt a lot about fair-trade – pros/cons, not just emotional response Challenged selves and worked hard to move up levels	Showed all learnt in week Challenged selves through personal targets
Adjustments to planning for next lesson?	Make a point of some camera techniques used in adverts for effect – watch one tomorrow	Children decide on own levels of challenge	Time for plenary – present/celebrate work	Use less sophisticated language on some writing scaffolds/ explain more clearly	Most children understand that the persuasive writing skills will be used for real in local project
Key Points to remember	Ryan – humour for persuasion Enya – catchy jingles Memorable-ness of adverts	Jamie – definition of exploitation Timing Expectations	Children can motivate other children	Cerys – very involved, usually quiet – brought confidence out	Give feedback in connection with personal foci and next steps

Again, the data in table 16 (below) is a summary of the student teacher's own evaluation following the teaching of the session. Example raw data can be found in appendix J. The first column demonstrates the prompts provided for the

student teacher to scaffold her thinking on the intrapersonal plane when completing an evaluation of the lesson. This second part of the evaluation (part b) was focussed around the student teachers' teaching. The prompts in this part of the lesson evaluation were intended to scaffold the student teacher's thinking on the intrapersonal plane about their own teaching practice. There were blank boxes in these data as these were not completed by the student teacher.   In the summary here, wording has been altered slightly for clarity of expression only.

Table 16 Data from the lesson evaluations (part b)

Evaluation of Teaching	Session 1	Session 2	Session 3	Session 4	Session 5
QTS Standards focussed on					
How well addressed?					
How well did you teach?	Clearer explanation Reduce activities; balance with time Children enjoyed and engaged	Informed children well on fair trade Reacted to feedback and incorporated it Timing	Like children having control of aspects Children worked in groups independently I worked with individuals Learning moved forward Excited, noisy children – on task	Messy handing out of resources at start Pace felt good Children had chance to challenge self	Clear and well set up task Children engaged and positive Language on writing frames – simplify for less able Thinking time useful at start
Adjustments to teaching for next time	Shorter started – awareness of timing as after break Spreading work across sessions	Time for self assessment and to act on feedback	There will be an opportunity to present work	Debates in class are useful to establish different aspects of a concept	Next Steps: Persuasion in different forms to cement understanding

From the evaluations made by the student teacher there was evidence that there was reflection on practice (Moon, 2000) and that change to practice was identified as a result. An example would be that the evaluation (table 16, above)

in one session indicates that feedback had been incorporated into the teaching. Deeper understanding was shown through the utilisation of the scaffold of prompts to consider the learning of the children as part of the reflection, indicating that the student teacher utilised reflection to enhance practice, albeit that she was supported to do so. This may in turn lead to reflexive practice (Moore, 2007). Indeed in this part of the evaluation the student teacher indicates her understanding of individual children's learning needs by annotating the form with details specific to certain children. This appeared to indicate a growing understanding of children's learning by the student teacher. These data were more effective when triangulated with the reflective question scaffold (discussed below). The data from the second part of the lesson evaluation was more pragmatically focussed towards potential changes in managing the learning environment, for example timing the lesson appropriately, as opposed to being focussed on the children's learning. At this pilot stage, these findings indicated that it was possible that in the main study, with a larger sample, greater connections might be seen between the student teachers' reflections about children's learning and their own teaching practice. Changes in the student teacher's thinking were understood within the context of the activities of the student teacher.

4.4.2 Lesson plans

The planning took place for the subsequent session following self evaluation and reflection by the student teacher and feedback from the mentor's observations and children's focus group. Table 17 (below) demonstrates how the children's responses to the skeletal prompts from the Thinking Fish (column one in blue) compared with the comments about improvements that would be beneficial to their learning as suggested by the children relating to those prompts (columns two, four, six and eight in brown). The commentary in red (columns three, five, seven and nine) demonstrate what of these suggested changes, by the children, had been acknowledged by the student teacher and where, if at all, the student teacher had adopted this feedback into her planning for future sessions. The table represents the student teacher's interpretation of the responses to the focus group activities by the children about their learning, as shown in her lesson planning. As such it may demonstrate the student teacher's acceptance of the children as MKOs, scaffolding her understanding of children's learning in the ZPD. An example of this would be on day four where the children have asked the

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student teacher to make it clear what each child's target is and the analysis of the next day's lesson plans indicated that this was incorporated. Example raw data can be seen in appendix J.

Table 17 Data from lesson planning demonstrating utilisation of children's feedback

	Day 1		Day 2		Day 3		Day 4		Day 5	
	What would you improve	Included in next day's planning	What would you improve	Included in next day's planning	What would you improve	Included in next day's planning	What would you improve	Included in next day's planning	What would you improve	Included in next day's planning
Children	Independence	No	More activities	Yes by the nature of a continuing topic	Support struggling children	Yes	Go to carpet if stuck Suggest level to aim for More with others	Yes Yes No		Not applicable as the end of the project with this class Student teacher's reflections indicate that this practice would be maintained in future
Student teacher	Choice	Yes through assessment for learning activity	Get on the floor with the children and explain	Yes	Challenging a bit more	Yes by the nature of a continuing topic				
Activity	More writing Go to the carpet if don't understand	Yes Yes	Rewards	No	Make signed to protest Some want easier and some want harder work	No	Do more challenges	Yes		
Learning					Make harder	Yes				
Feelings			If you think you work hard you feel good	Yes in the starter						

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Other	Timing	Yes a clock on the board was implemented	Soft cushions not chairs Independence		Use iPads Make harder	Used in session 2 Yes by the continuing nature of the topic	Toilet Pass	No		

These data may indicate that the student teacher was prepared to learn from the children as MKOs in some instances and change her practice in the classroom as a result. However, there was not enough evidence in the plans to demonstrate the student teacher's adaptations to further support children's learning from the feedback from the children and the mentor. A small amount of information could be gleaned, for example, I could assume that there were didactic approaches in the planning when the children said 'she stood at the front a lot' but there was no hard evidence. The information that was there was duplicated from the feedback from the mentor and the children, as well as in the student teachers own reflections. As I was interested in the thinking process which was evidenced more clearly in the student teacher's lesson evaluations and reflective questions, I have not encompassed lesson plans into the data analysed for the main study.

4.4.3 Reflective questions scaffold

As already noted, the student teacher was also asked to reflect on the process of working with the children in this way; that is receiving feedback about teaching and learning from each session each day. These reflections were considered necessary as this practice was new for school-based training on the PGCE course. Example raw data can be found in appendix J. Table 18 (below) summarises these data. The first column offers the prompts provided for the student teacher to scaffold her reflections on this process. The data contained in table 18 below has been grouped into two types of information. The blue details the student teacher's commentary about teaching. Many of these comments also appeared in the lesson evaluations (see above). The data summarised in purple in table 18 below is the student teacher's commentary about pedagogical practice. These data were compared directly to the categorical model devised by Tharp & Gallimore (1998) from social constructivist theories of learning (Vygotsky, 1978) and enabled comparisons to be made between the children's feedback and the changing pedagogy of the student teacher over time. The table represents therefore the student teachers growing understanding about children's learning on the intrapersonal plane. In the summary in table 18 (below), wording has been altered slightly for clarity of expression only.

Table 18 Data from the reflective questions

	Day 1	Day 2	Day 3	Day 4	Day 5
Initial Evaluation	Children eager Went well Start too long Engaged Lacked challenge	Surprised children liked harder work Carpet time too long Used children rather than talking at them Children organised own groups	Children challenging selves Care with adverts Liked children teaching not student teacher Children supporting children more effectively Pace Noise levels Supporting strugglers	Start felt messy as not according to plan Children on carpet who are stuck Worked well independently	Focused on work with personal targets Clarified misconceptions Checking of time was good
Learning from the children	Too easy Share differentiated success criteria (all, most, some) Add challenges Children choosing Children working with others	Must encourage children to challenge self Reward for pushing self	Not teaching from the front Using children as experts Grouping by ability Remembered less able boy's contribution	More challenged Enjoyed being the expert and helping others Toilet passes so as not interruptions Time reminders	Enjoyed talking about improving learning Lessons improved Individual targets Felt valued and listened to
Development in children's learning	Children thought about wanting a challenge Children understood that compromises re resources etc had to be made	Children challenging themselves Children ownership of decision making about own learning Active learning	Think about their ability and other	Importance of going the same thing in lots of different ways Children can be experts in their learning – don't prejudge	Targets focus work – individual challenge More rewards to taking a personal challenge

Feelings during the process	Enjoyable Liked trying things out Impressed by what children know and can do especially with levels that they are at	Really enjoying Helping me see how to improve Children more active in their learning Children like to be listened to Children are positive	Challenge of differentiation	Better and better Theory into practice 2 way ZPD Improved relationships with children Not pulled in lots of directions as strategies suggested by children work	Planning easier because know children Interested in planning for them Knew children's abilities better Children and teacher as a team
Changes to teaching		More pace Confidence Children enjoyment	Children pushing themselves	Prep, prep, prep! If work is scaffolded well, children can work independently and less able can be supported better and more able challenged better	Assessed work and children achieved well
Implications for future practice	3 success criteria Chose adverts from range	Remind children to challenge themselves Reward	Use children to model ideas	Ensure children know their next steps in learning Keep using focus group for feedback	Personal targets Differentiated learning activities to meet Los Children choose challenge Continue focus group

These reflections by the student teacher demonstrated her reflexivity in practice (Moore, 2007). These reflections indicated the changes and developments made to practice that may have impacted on the children's learning. The colour coding helped create a visual picture of the week and the sessions over time. What this appeared to demonstrate was that at the start of the week, the student teacher reported that she was concerned more with the mechanics of teaching, for example, pace, children needing to understand about sharing resources; however, as the week progressed the comments were differently focused towards the underlying principles of learning, for example work being well scaffolded for learners to be successful and supporting children who were 'stuck' (day four), although in this instance not verbalising her role as MKO. In addition it was noted that there was not a linear progression towards increased understanding of learning, and when these data were compared to the children's and mentor's feedback for example, it was clear that their roles as MKOs influenced her reflections. This is shown in the children's feedback where they suggested going to the carpet to indicate the need for support from the student teacher (table 14, day four) and the mentor feedback asking how less able children can be included (table 22, day five). This indicated that the role of the MKO is important to this student teacher as a learner as it enabled the shaping of intrapersonal thinking through interpersonal exchanges and thus progressed understanding through her ZPD towards autonomy. In addition there was recognition by the student teacher that the process of planning and teaching was more engaging as the children were more collaboratively engaged with their process of learning (Mercer, 2008, Littleton & Mercer, 2013). This is shown in day four where she talks of her feelings during the process, reflecting that planning is easier because she knows the children better and therefore she has become more interested in planning for their learning. Possible explanations for the changes in the student teacher's thinking were understood within the context of the activities of the student teacher which are discussed further above.

4.4.5 Minutes from researcher and student teacher meetings

Table 19 (below) summarises the minutes of the meetings held each day between the student teacher and the tutor (myself). The table represents the student teacher's report of her growing understanding of children's learning as she progresses through her ZPD over the week, scaffolded by the dialogue with me. Whilst these discussions took place on the interpersonal plane it was

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evident that the student teacher had done much reflection on the intrapersonal plane following the scaffolded feedback from the mentor and children in order to be able to articulate her thoughts clearly. This indicated the fact that stages as defined in Tharp & Gallimore's (1998) model of social constructivist learning theory (Vygotsky, 1978), were not sequential. The student teacher had moved from interpersonal thinking to intrapersonal thinking to interpersonal thinking – moving back and forth through their ZPD to develop understanding about children's learning. This fits with Littleton & Mercer's (2013) interpretation that the ZPD is a helix rather than a sequential sequence, suggested by Tharp & Gallimore's (1998) model. In the summary here, wording has been altered slightly for clarity of expression only. Exemplar raw data can be found in appendix J.

Table 19 Data from the minutes of the meeting with the researcher/tutor

Day 1	Enthusiastic about this approach – more informative then expected Children to choose level of challenge tomorrow Scaffold with writing frame Voting system for further feedback but the language needs changing Without feedback like this would have differentiated task but not provided the opportunity to move to the next level Student teacher working through ZPD with children as MKO Tutor not needed as MKO
Day 2	Very positive Children proud - instant action on suggestions Still more challenge required Self questioning by student teacher - do they know how to select level? Is it because they don't want to appear 'geeky'? Concern raised about extrinsic/intrinsic rewards following children's demands in focus group Considering extra scaffolding for less able using other children Focus on the teacher role and how the children really are Observations better, class felt together Likes having this sounding board in tutor
Day 3	Change in engagement of children noted – increased Challenge increased but wanting more Relationship of equality established Children feeling listened to and responded to Children know that student teacher understands how they like to learn Modelling as scaffold for children's ZPD Time to think and talk about the learning Clearer idea of the challenge levels required Improved observations; improved children's feedback Conscious of school Ofsted focus – gifted and talented, targets, pace, next steps in learning Discussion with tutor makes risks feel safer – indicating student teacher at edge of ZPD Not more work, different way of working Would use approach in teaching – swapping children in focus group More in touch, children at centre of planning, children exceeding learning objectives, respectful relationships with children Discussion with tutor makes it feel safer to take risks
Day 4	More variety of activities – working wall to support confidence Activities more challenging and require more thought and talk 123* challenge structure Level has gone up yet children don't feel that they're working too hard Questioning – do they know how to challenge themselves? Observation good/outstanding Personalise through targets for individual work Children challenging themselves – reflect to please you? Or how school should be? Or ownership? Or intrinsic motivation Behaviour for learning fantastic because of content or delivery? Focus group led diamond 9 as talking starter activity

Day 5	Empowered
	Personalised targets – tracking
	Bring child who is struggling (less able) into focus group?
	Thinking time
	Celebration assembly
	Achievement of targets
	Power shift? Not lost power, empowered by children
	Children learnt about how each other learn
	Self differentiation is an ethos in the classroom
	Ownership of learning belongs to the children
	Will use self differentiation, targets, focus group to inform teaching practice in future

From these minutes it was indicated that the student teacher saw the tutor/researcher as an MKO and valued the interpersonal discussions between them. This was evidenced in the comments about feeling that the risks are easier to take because the thinking has been supported through the discussion with the tutor/researcher as MKO (day three). However, it does therefore raise the question that if the mentor was providing opportunities for pedagogical discussions, adopting a 'coaching' style of mentoring, perhaps the student teacher would receive this kind of support in context. This would be in contradiction to the competence model of teacher training which the current mentor is fulfilling through the observations but is also required by the Teachers' Standards. The tutor/researcher was not present for the observation directly, but was interested in the student teacher's development through this process of learning and teaching and as such could approach the meeting with a different mindset to the mentor. This was because in this situation, the tutor/researcher was not directly assessing the student teacher, but rather adopting a coaching role to support her development through the process. These contradictions between the mentor's and tutor's roles were important to note as they may be pertinent to conclusions drawn about the role of the mentor.

In addition from these minutes it was clear to see the student teacher's developing pedagogical knowledge through this process. An example of this is the student teacher verbalising that the children are becoming MKOs for other children to scaffold and model learning processes (day four). In addition, the student teacher was able to verbalise her increased interest in the children's learning through undertaking this process, which was also indicative of an

increased pedagogical understanding of the needs of the children through 'hearing' the children's voices (Flutter, 2007, Fielding & Morgan, 2007).

4.5 Observation feedback

4.5.1 Quantitative feedback

During each taught session the mentor observed the student teacher 'in action' and recorded his perceptions on the standard observation form for a PGCE student. The data summarised in table 20 (below) shows the quantitative grading of the student teacher by the mentor for each of the sessions observed in this sequence. The first column indicates the areas that the mentor was asked to observe during the student teacher's teaching. Not all aspects of the lesson had to be observed each session due to the nature of the session and the development needs of the student teacher, for example planning may not have been observed due to the mentor focusing on other areas or because the mentor has scaffolded the planning over some lessons. This is normal practice on the course in order to scaffold and develop the student teacher's learning and understanding. The grading relates to Ofsted criteria for trainee/ student teachers as well as NCTL requirements for QTS that is the Teachers' Standards. A lesson had to have the majority individual elements at any one level to be given that level overall. Professional judgement, and experience by the observer, was used here.

Progress by the student teacher over the sequence of lessons was quantified (column seven in table 20 below). This was calculated by comparing the grade awarded for the first session to the grade awarded in the final session, for each category reviewed by the mentor in each lesson. So, for example, progress and challenge moved from good (grade 2) in the first session to outstanding (grade 1) in the final session which demonstrated progress in that area of one level, shown in column seven as +1. Table 20 appears to represent the student teacher's growing understanding of children's learning as she progresses through her ZPD over the week, scaffolded by the dialogue with the mentor as recorded as observations of teaching. This is summarised data. Example raw data can be found in appendix K.

Table 20 Mentor's quantitative evaluation on individual areas observed

Key N = not graded; 4 = unsatisfactory, 3 = satisfactory; 2 = good;

1= outstanding

Lesson Observation Category	Day 1	Day 2	Day 3	Day 4	Day 5	Progress over the period
Progress and challenge	2	1	1	1	1	+1
Subject knowledge	3	2	1	1	1	+2
Planning	3	N	N	N	1	+2
Resources including other adults	1	1	1	N	1	Maintained No higher grade available
Engagement	2	1	1	1	N	+1
Talk for learning	2	N	1	1	N	+1
Behaviour management	2	2	2	2	2	Maintained
Flexibility and adaptability	2	1	1	1	N	+1
Assessment for learning	2	N	N	2	1	+1
Individual needs	2	1	1	1	2	+1/2

The data summarised in table 21 (below) show the quantitative grading overall for each lesson taught by the student teacher and observed by the mentor for each of the sessions observed in this sequence.

Table 21 Mentor's overall quantitative grading

Overall lesson grade each day across the week				
Day 1	Day 1	Day 3	Day 4	Day 5
3/2	2/1	1	1/2	1

Both tables (20 and 21) above indicate that progress was made by the student teacher during the time of this intervention. Her overall lesson grade moved from satisfactory/good (three/two) to outstanding (one) in the space of five lessons. Equally progress was seen in nine of the eleven individual areas observed where at least one grade of progress was made in each area. In the two areas where the

grade had not improved one (behaviour management) had maintained at a grade two (good), the other (resources, including other adults) had maintained at a grade one (outstanding). This was indicative of a ceiling effect; that is the student teacher started and ended at the highest grade because there were no higher grades to give. This, therefore, could be a limiting factor in the evaluation of her progress. It is interesting that the area of resources, including other adults is graded well as this is a key aspect in social constructivist learning theory. This individual area relates directly to the utilisation of MKOs to scaffold learning in the children's ZPD and during the intervention this student teacher demonstrated outstanding practice in this area. Further the area of talk for learning which again is directly associated to social constructivist learning theory, it being interactions on the interpersonal plane, moves from good to outstanding during this intervention. Interestingly as the research focussed in on the student teacher planning a series of lessons, this is one of the areas where most progress (two points) was made. This could indicate that this intervention is effective in enabling the understanding of student teachers about children's learning forward, albeit the data may be flawed owing to the potential unreliability of the grading system.

4.5.2 Qualitative feedback

In addition to the quantitative grades that the mentor gave with the lesson observations, as summarised above, the mentor also provided qualitative comments for each of the lesson observation areas observed (table 22 below). The table shows the individual areas observed in the left hand column and comments summarised for each day against each individual area. Where there is a blank in table 22, the mentor had not commented on that aspect for that lesson on that day. The table appears to represent the mentor's observations of the student teacher's growing understanding of children's learning as she progresses through her ZPD over the week, scaffolded by the dialogue with the mentor as recorded as observations of teaching. In the summary here, wording has been altered slightly for clarity of expression only. Example raw data can be found in appendix K.

Table 22 Data from mentor's observation feedback - qualitative

Lesson Observation Category	Day 1	Day 2	Day 3	Day 4	Day 5
Progress and challenge	Written resources good	Allowed for self-differentiation	Effective differentiation All challenged	Star system for self challenge	Envelopes with personal challenges in
Subject knowledge	Showed key vocab	Powerpoint used helped to reinforce subject knowledge Secure understanding of the topic	Different approaches	Range of techniques. Diamond 9 and debate to show understanding	Debate, media style work and discussion Time to write ideas
Planning	Recapped previous lesson				Plan showed this clearly
Resources including other adults	Introduced new card voting system Excellent use of ICT	Very good range of resources including ICT	Resources given to children were excellent		Envelopes already provided for the task
Engagement	High level engagement in starter Too long at the start	All engaged. All able to access at own level	All children totally engaged	All children able to and interested in and giving opinions	
Talk for learning	Opportunities for children to discuss in 2s and 3s		Focus group thinking explained by focus group – impact of focus group	Focus group member in each talk group helped meaningful discussion	N/A

Behaviour management	Behaviour was good	Range of strategies Children know and respond		Fussier children Used usual techniques Resources caused an issue – have them prepared in envelopes Time constraints	
Flexibility and adaptability	Very good. Opening of lesson used to assess understanding	Lesson based on feedback from focus group Showed understanding of how children want to learn	Method of learning changed after focus group Modified from input	Based on focus group	N/A
Assessment for learning	Feedback from children in discussion				Feedback is good. Children all know targets and able to work with this information
Individual needs	Feedback allowed assessment of needs met	Planning and strategies in place to allow all children to be stretched	All children could learn facilitated by member of focus group	Mixed ability groups using focus group members as leads and to support less able to contribute	
Social and cultural understanding		Lesson allowed children to understand the concept of fair-trade Lots of questions between children		Children looking at lives/situations/famili es in fair trade	All children understood how/why fair-trade works

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Strengths	Excellent range of resources			Allows children to give point of view but wants thinking behind it	Teaching sequence good and made sense
Areas for development	Time for tasks				How can you ensure less able children can access the lesson?

The mentor's observations focussed the feedback on observed teaching practices rather than deepening pedagogical knowledge. One interesting point to note is that the mentor's feedback in some aspects reflects that of the children. For example, on day one, in the area of engagement, both children and mentor comment on the student teacher spending too long at the start, but on day four, the children and mentor comment that the children were actively engaged. This may indicate that the feedback from the MKOs (children and mentors) had developed the understanding of the student teacher about children's learning and her practice has changed as a result. However, the process of observation was more generally focused towards the attainment of the Standards and the qualification of QTS. This is evidenced through the qualitative comments made by the mentor, for example behaviour was good, resources prepared ahead of the session (table 22, days two, three and five). The requirements of the PGCE course state that these observations were to be supported with oral feedback, and therefore these may only represent the 'minutes' of an observation and meeting between student teacher and mentor. However, there was no indication that the feedback deepened the understanding of the process of learning and teaching but rather supplied evidence towards a competence model of teacher training. This process however can be useful when used in conjunction with other reflective models where the student teacher reflects on the children's learning and his/her own practice, and emphasises the intra- and interpersonal relationships in the classroom (Moore, 2007). These data therefore should not be considered alone, but in conjunction with the powerful data elicited from the children in discussion about their learning and from the student teacher's reflections of the process. However, the mentor could also be seen here as the MKO of the student teacher brokering the way for the student teacher to join the current teaching community of practice which is focussed towards the competence model at all levels of education.

4.6 Summary of findings

Overall the data from this pilot study supported the value of social constructivist learning theory as the underpinning pedagogy in teacher education in developing reflectively professional teachers who listen to children's views about their learning. Further the value of dialogic learning, at all levels of education, was evidenced as a means of supporting learners move through the inter- and intrapersonal planes of their ZPDs. Moreover, the role of an MKO was

highlighted as a guide through the ZPD but this position of the MKO within the learning context may be fluid as learning is reciprocal and children can be as expert on their learning needs as other professional adults. In addition it also raised questions about the value of the competence model for teacher training, if this is not supported by a reflective practice model. It was clear that reflecting on learning by all those involved and from all perspectives increased learning because the mentor, student teacher and children were all focused on achieving the same goal.

4.7 Outcomes

- In the pilot there appeared to be an overall increase in understanding for all participants. Learning was highlighted by the process and the activities; teaching and pedagogy was evident through the feedback, reflections and planning. There was an overall increased understanding by all parties. It was worth doing and was extended to the whole cohort of student teachers.

- The Thinking Fish duplicated the information in the sorting activity; it was the Thinking Fish which the student teacher talked about and commented on; the sorting activity was not focused on teaching, learning and pedagogy. However, it was useful in this study to show that the thinking aspect of learning appeared to increase in importance over the week, in the opinion of the children, as they progressed through their ZPD.

- The feedback from the children, mentor and the student teacher's own reflections provided much of what was highlighted in the tutor meetings. It is worth considering a mentor brief to ensure that the feedback is helpful in enabling the student teacher to feel 'safer' in taking risks, but perhaps this was a wider discussion for mentors at mentor training/development sessions. Perhaps it is worth considering a method of student teachers being able to act as sounding boards to one another during this process.

- The structured reflective questions for the student teacher were clearly focused to aspects of teaching, learning and pedagogy for the wider analysis of data in the main study and therefore the evaluations of the student teacher's evaluations of her own teaching may be less valuable.

- The student teacher's lesson plans did not show enough evidence of the student teacher's thinking behind the alterations made to practice in subsequent lessons.

- A larger study would need to consider how many student teachers' work to review, and would need to compare between groups of student teachers with varying characteristics (Ofsted, 2009); that is, how the sample is constructed for the main study needed to be considered in order to get a whole cohort picture, and increase the trustworthiness of the data elicited

- With a larger sample of student teachers in the main study the same methods of data analysis can be utilised but data representations needed to be refined to present the data clearly for a larger sample.

- Further consideration needed to be paid to answering the question regarding how mentors could support this process of teaching and learning for student teachers and it was hoped that a larger sample in the main study data may provide greater insight into good practice in this area.

4.8 Considerations for the main study

The pilot was undertaken with one student teacher only. However the main study involved a far wider research population and therefore there were issues about how this study was conceived. The whole case study contained a series of action research cycles. As the main study contained the second cycles of this project (the first being the pilot cycle), it was seen as a development of the way the initial project was conceptualised.

From the way in which the pilot study was designed and outcomes of it, there were several factors which influenced moving this project into working with a larger sample for the main study:

- time –in the pilot, both the student teacher and the tutor/researcher spent support time which could not be replicated with many student teachers (see methodology chapter for context for the main study).

- equality – it could have been construed that if a high level of support is given to a small number of student teachers this could be an unfair student teacher experience. It was important that all student teachers had the opportunity to deepen their understanding of the learning and teaching relationship in this way and therefore how the project can be made available to all student teachers with a sample being taken from the whole needed consideration (see sample selection for main study in the methodology chapter).

- course practicalities – if the pilot study was to be adopted in some way by the course, it had to be part of the expectations, rather than an additional piece of work for the few to complete. The course was studied by approximately 115 student teachers. This meant that other tutors may be needed to support the process with the student teachers. In addition the course itself uses time to the maximum limits, and therefore there is no leeway for 'extra' activities.

- requirements of the External Bodies – the course was governed not only by the University, but also by the expectations laid down by the Government, Ofsted and the NCTL; that is, student teachers must reach a certain standard to achieve QTS, therefore the student teachers must work in a way that fulfils this requirement.

To this end the project was recast for mass production. The following map of the main project illustrates the way that this happened. Table 23 below shows the planned teaching and learning sequence for the reflective work of the student teachers to be undertaken in the main study, incorporating the data collection required for them to participate in the main study. The process of the pilot study was adopted and embedded as part of the course assessed work.

The changes made here from the pilot are as follows:

The sorting activity was discarded as the Thinking Fish provided a richer depth of information about the same areas due to its semi-structured, but qualitative, nature. The student teacher in the pilot study commented on this. Additionally, on reflection, it lacked specific connection to teaching and learning.

The tutor/researcher meetings were also dropped as the feedback from the mentor and the children provided enough scaffolding, when coupled with the student teacher's own reflections, in order to move the student teacher through her ZPD.

The sample size was increased. A sample of the student teacher cohort was adopted as defined by the Ofsted (2009) requirements, to understand the needs of and track progress of vulnerable groups (see methodology for main study sample).

The whole lesson was still considered due to the nature of the type of teaching undertaken by the student teachers as a requirement of their course at that time.

The data analysis methods remained the same but were developed to provide a more sophisticated representation as there was more data to present owing to the larger sample size. Thematic analysis, as well as quantitative analysis of the mentor's grading remained, but were presented in a way which more clearly represented data elicited from a larger sample.

Table 23 Plan for the main study

Course aim: To strengthen the student teachers' understanding of the links between teaching and learning, theory and practice and themselves as learner teachers **Research aim:** Can student teachers' pedagogy be enhanced by heeding children's thoughts about their own learning?	
University based initial input for student teachers by researcher/tutor	• Social Constructivist Theory (Vygotsky, 1978) • Discussion - "What does this mean for me as a teacher? "What does this mean for me as a learner?" • Introduction of bespoke pedagogical tools for data elicitation • EXPLAIN - the children taking the role of MKO and guiding learning of student teacher – they are the expert in their learning so use them!
Activity for School	Student teacher to agree with mentor a sequence of 3-5 lessons (English or maths might be easiest, as they occur each day) with a group or the whole class that he/she will teach
	Plan session 1
	Teach session 1
	Mentor to observe, record and provide feedback
	Take focus group of children after the session. Using Thinking Fish discuss – What went well (show example record sheet – Thinking Fish). Record responses (photograph) - What could be improved for tomorrow (show example record sheet – Thinking Fish). Record responses (photograph)
	Complete scaffolded reflective questions and lesson evaluations
	Plan session 2 (3/4/5) – taking into account the suggestions of the children, mentor's feedback and own self reflections Show this clearly in your planning.
	Teach session 2 (3/4/5)

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Chapter 5 – Findings from main study (case study two)

This chapter presents the findings from the main study. Firstly the qualitative data drawn from the feedback of the children, student teachers and mentors are reviewed. Following this the quantitative data from the mentor grading was considered. The measurement of progress towards the understanding of learning is understood through considering average point scores, as well as proportional gains. Two student teachers' data in particular are analysed, as their grades indicated a potentially interesting pattern. The chapter concludes with a summary of the data presented. In this chapter individual student teachers have been given an alphanumeric code in order to preserve their anonymity.

5.1 Findings from the Thinking Fish

The children's feedback from the focus group was analysed and themes were identified. The themes identified are highlighted in table 24 below, in blue, mapped onto the representation by Tharp & Gallimore (1998) of social constructivist learning theory (Vygotsky, 1978). The statements are listed under the stages of learning to which they relate as depicted by the model. For example the theme "talk for learning" which is associated with assistance by an MKO in Vygotsky's theory is listed under stage one. This is where learners would typically be operating on the interpersonal plane.

Table 24 The themes from children's feedback by stage of learning - adapted from Tharp & Gallimore (1998)

Stage 0	Stage 1 Assistance by More Knowledgeable Other (MKO)	Stage 1/2	Stage 2 Assistance by self	Stage 2/3	Stage 3 Internalisation, automatisation and appropriation	Stage 4 Deautomatisation. Recursive loop begins as required
Learning environ-ment	Feedback		Consolidation		Independence	
Prior learning	MKO		Attitude		Learning about learning	
	Talk for learning		Constructivism/ doing		Thinking time	
	Scaffolding/resources				Improvements to learning	
					Challenge	

When reviewing the data in this way it was clear that the children's feedback identified aspects of learning across social constructivist learning theory (Vygotsky, 1978). The children, aided by the scaffold of the Thinking Fish were able to articulate themes about their learning. The fact that these themes spread across the stages of social constructivist theory (Vygotsky, 1978) as represented by Tharp & Gallimore (1998), indicated that the children were working at various stages of the learning process. As in the pilot, the stage four column was not used.

In order to represent the frequency of occurrence of each of these themes a graph was constructed so that frequencies may be compared (see figure 11 below). The graph (figure 11 below) summarises children's thoughts about their understanding of what supports their learning process from the comments that they made to their student teachers during the focus group sessions. The graph represents a simple frequency tally of comments made by the children and is grouped around themes inducted from the entire dataset of children's feedback. The themes that were most frequent and therefore most important to children's learning from their perspective were: the role of the more knowledgeable other, talk for learning, doing/constructivism and scaffolding/resources. The least important to their learning were prior learning and independence (defined as working by themselves). Therefore the graph shows that the principles of social constructivist learning theory (MKO, discussion on the interpersonal plane, scaffolding, and actively constructing understanding) are those which the children recognise as most important to their learning. However the least important would suggest that the children do not recognise the importance of what they have learnt before, in order to get them to this point in their ZPD, as important. Equally it could be seen that the children do not recognise independence as important, that is moving towards autonomy in their ZPD. This could also indicate that the children do not feel independence is important because they recognise the value of working with MKOs (peer or teacher) to scaffold their learning on the interpersonal plane through the ZPD. The themes most frequently identified by the children are discussed below.
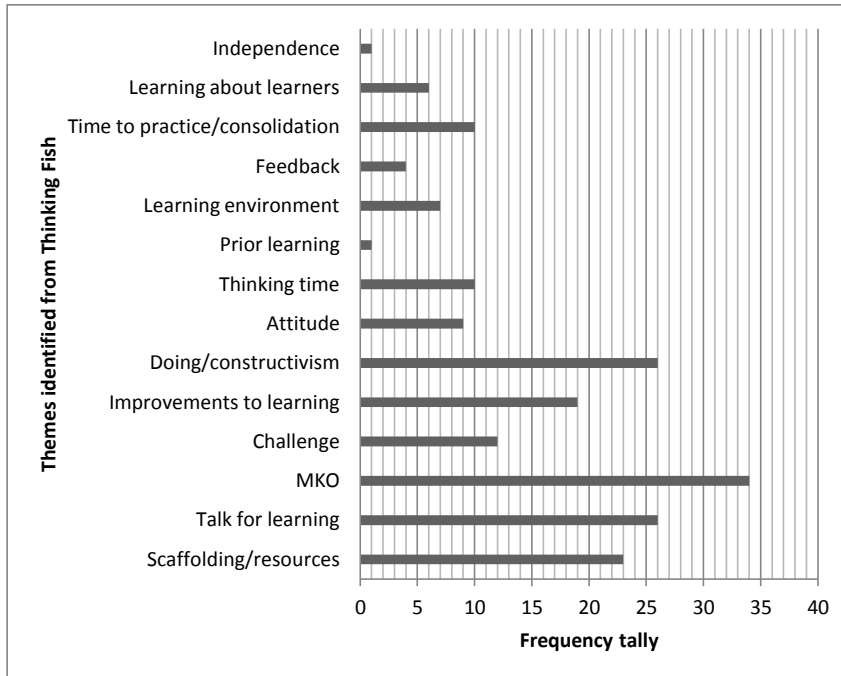
Figure 11 Frequency of themes identified through the Thinking Fish

5.1.1 Themes considered most frequently by the focus group of children

What was immediately striking about the data was the frequency with which children commented on the role of the teacher and/or other supporting adults as being integral to their learning, as identified here under comments about the MKO. Most children expressed this role as *"helping me"* (MCMSEND72, MBMMEGSEND4, SBM72, ARMEG3, SKMEG72), which in the context of social constructivist learning can be understood as the MKO facilitating, on the interpersonal plane, their movement through their ZPD. Other children were more explicit and represented their understandings through various comments amounting to the same idea, that the person in this MKO role provided *"clues"* (PC72) to enable their understanding but did not provide answers. This suggested that the children may have recognised that the MKO is their *"facilitator"* (RTM72) on their pathway of learning, but not the provider of answers, nor someone who does the work for them. Further other children explained that their MKO questioned their reasoning for answers which *"helped and enhanced learning"* (KM72, CHM71). Another aspect of this role which the children discussed was 'modelling'. They talked of the student teacher providing

them with *"ideas on the board"* (CB2571) or *"examples of success criteria"* (PM2572, SKMEG72). Further they described the fact that they *"liked that the teacher highlighted the (children's) suggestions they made so it was clear for everyone to understand"* (KS72) thus acknowledging that the role of the MKO facilitated learning.

Another theme which was prevalent in the feedback from the children was 'talk for learning'. One group of children expressed this as *"generating ideas together"* (SC72), another group *"being able to speak to one another to help come up with answers"* (student teacher MCMSEND72). This was further developed by a third group of children who expressed that this process is *"helpful for learning"* (CHM71). This may have demonstrated the children's understanding of the value of talk in their learning and how collaborative activities can develop their understanding in a positive way. Again there was no emphasis on this process telling them what to do, but more about how talk for learning supported the developments of ideas by individuals which they then applied.

A further area which was prominent in the children's feedback was the emphasis on 'doing' or being 'active' in their learning. An interpretation here may be that student teachers were providing opportunities for children to construct their own understanding from the activities they had planned. Some children described this as *"practical learning"* (AMEY72). They described their experiences as *"finding ways to..."* and commenced statements *with "I can..."* (RBEY71). These descriptions may have demonstrated that the children saw the learning activities, provided by the student teachers, as having enabled them to construct meaning from themselves and enabled them to be successful. This showed that they had learnt and could *"see how clever I am"* (SBM72) perhaps meaning, that they saw the progress they had made. Certainly one group of children pointed out that this way of learning *"made it easier for us to remember"* (SS2572).

These active learning processes were supported with scaffolds which the children referred to as resources. One group explained their importance through frustration, *"prepare resources so that we can get on with doing"* (SC72) which emphasised the importance of the resources to their learning needs and their frustrations with the student teacher for impeding learning time with lack of preparation. However, most groups of children fedback on positive experiences

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with resources/scaffolds which helped them to learn through a *"variety of different ways"* (ECEY71, ARMEG3, SKMEG72, RTM72) as resources like games *"helped us learn"* (RTM72).

The focus group discussion represents the children being actively engaged in talk for learning (Mercer, 2008, Alexander, 2010). The focus groups were facilitated by the student teachers rather than didactically led, meaning they intervened little. Each member of the focus group shared their intrapersonal reflections on the interpersonal plane through the discussion in the focus group. The content of the talk centred on processes of learning thus connecting the children's metalearning (McGregor, 2007, Smith, 2010) with the Thinking Fish activity. The shared agreement of the members of the focus group was recorded on the Thinking Fish. This may indicate the high quality talk (exploratory talk – (Mercer & Littleton, 2007) in which the children engaged. This collaborative activity through discussion is summarised as interthinking (Littleton & Mercer, 2013). The thinking is brought together through the tool of language, scaffolded by the Thinking Fish, so the children's understanding of their learning processes may develop.

Further, identifying these areas (the role of the MKO, talk for learning and constructing learning) could be taken to mean that the children recognised learning from a social constructivist viewpoint. Moreover the children recognised processes around learning in this pedagogy including, "*thinking time before answering a question"* (SBM72), time to practise, feedback*, "supporting and challenging each other"* (EWEY2571) and becoming autonomous. Even if the children were unable to articulate what this approach to learning actually was, they explained features of it. This may indicate that the student teachers and mentors, adopted aspects of social constructivist principles for practice in the classroom in which they were learning.

Children's understanding of learning is further demonstrated through specific instances in which they recognised learning directly. The themes which related directly to this were prior learning, learning about learners and improvements to learning and challenge. These were evidenced through comments such as, *"make me think"* (SC72, MCMSEND72) *"I want to learn more"* (KS72, KBM2572), this *"helps and supports my learning"* (KW2571), it was *"more interesting... because we were learning new things"* (PM2572) and *"I can see*

improvements in my own learning" (SC72). These statements were further exemplified through the student teachers' understanding of learning (discussed below), as they reflected on what the children reported to them during the focus group activity and made connections between their own intrapersonal reflections and the interpersonal feedback from their mentors. In addition the children commented on their needs in relation to learning and the environment in which they were learning, *"I need time and the environment to concentrate in"* (CJ2571). This was further expressed in their feedback that the environment was too noisy or children were not doing what they were supposed to and this put them off their learning activity. This suggested that children wanted to learn and expected the student teacher to manage the learning environment accordingly; without an appropriate learning environment, learning could not happen.

5.2 Findings from reflective logs

The student teachers' reflective logs were analysed, themes were identified and mapped onto the representation by Tharp & Gallimore (1998) of social constructivist learning theory (Vygotsky, 1978). The statements are listed under the stages of learning to which they relate as depicted by the model (table 25). For example the theme "talk for learning" which is associated with assistance by an MKO in social constructivist theory (Vygotsky, 1978) is listed under stage one. This is where learners would typically be operating on the interpersonal plane.

Table 25 The themes from student teachers' reflective logs by stage of learning - adapted from Tharp & Gallimore (1998)

Stage 0	Stage 1 Assistance by More Knowledgeable Other (MKO)	Stage 1/2	Stage 2 Assistance by self	Stage 2/3	Stage 3 Internalisation, automatisation and appropriation	Stage 4 Deautomatisation. Recursive loop begins as required
Teacher persona	Clarity of language		Constructivism		Children reflecting	
Learning environ-ment	Learning not teaching					
	Address misconceptions		Subject knowledge		Listening to feedback	
					Differentiation	
Prior learning	Talk for learning		Consolidation time		Better understanding of learners	
	MKO		Scaffolding		What the children did not say	
Behaviour for learning	Mentor reliance				Learning styles	
	Progress					

When reviewing the data in this way it was clear that the student teachers' reflections identified aspects of learning across social constructivist learning theory (Vygotsky, 1978). The student teachers, aided by the scaffolds of the lesson evaluation and reflective prompts, were able to articulate themes about their understanding of children's learning. The fact that these themes spread across the stages in social constructivist theory (Vygotsky, 1978), as represented by Tharp & Gallimore (1998), indicated that the student teachers understood the various stages in the ZPD, and engaged to a greater or lesser extent with all aspects of a social constructivist view of learning.

In order to represent the frequency of occurrence of each of these themes, a graph was constructed so that frequencies may be compared (see figure 12 below). The graph (figure 12 below) summarises student teachers' thoughts, in their reflective logs, about their understanding of some of the processes associated with children's learning made after receiving feedback from the children and their mentor. The graph represents a simple frequency tally of comments made by the student teachers and is grouped around themes inducted from the entire dataset of student teachers' feedback. There were five areas which were commented on with the greatest frequency in the student teachers' reflective logs: talk for learning, MKO, scaffolding, understanding of learners and differentiation; all of which were pertinent to the student teachers' understanding children's learning from a social constructivist perspective. In operating this intervention in their practice, the student teachers appeared therefore to make explicit links to the theory underpinning their practice. The focus of the majority of other comments were around processes which enabled children's learning, for example time for consolidation and taking account of prior learning experiences that the children have had. There were two areas on which a very small number of comments were made which were about the student teacher themselves, that is their personal actions and their subject knowledge. The most frequent themes, according to the student teachers, are discussed below.
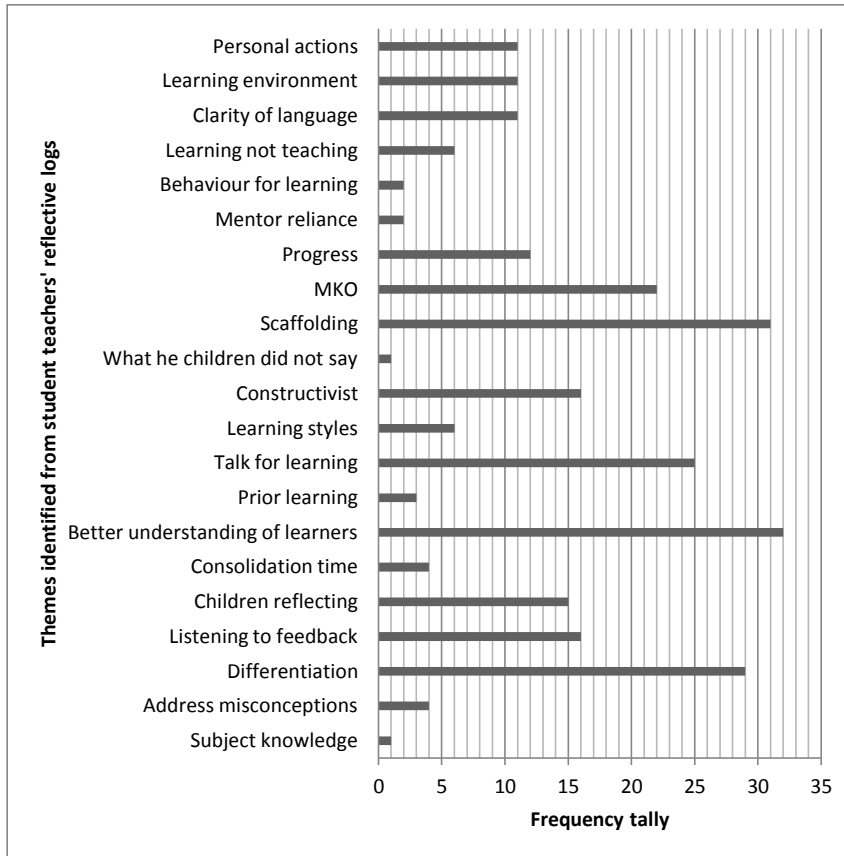
Figure 12 Frequency of themes identified from student teachers' reflective logs

5.2.1 Themes considered most frequently by student teachers

The student teachers' most frequent reflections were about how this intervention is *"useful in understanding children as learners"* (JL2571, SKMEG72). One student teacher went on to recognise that in understanding this, she was better prepared to differentiate and scaffold learning and target support with an MKO. She stated that this process provided *"a clearer understanding of children's strengths and areas for development"* in a way that was *"better than marking"* (ibid.). Another student teacher supported this with a reflection that this had enabled her to *"explore flexible approaches (to learning) to adapt to the needs (of the children)"* (JD2572) in doing so student teachers were able to *"cater for a range of learning needs through active learning approaches"* (JL2571). As a consequence of this other student teachers stated that they had *"restructured*

groups to enhance learning and enable challenge and support", and to *"support, question and scaffold learning"* (CB2571, KBEY2572) and a further colleague stated that the *"focus is on children's learning not my teaching"* (PM2572). Moreover, another student teacher *"identified strategies in which they (the children) like to learn and what strategies engage them"* (KW2571). It also enabled student teachers to *"address misconceptions through monitoring them (the children) more closely"* (SC72). This demonstrated that the student teachers were developing their understanding of how children learn and also how to support the learning of the children as a result. Moreover, it indicated that their role as the children's MKO was becoming clearer, as this indicated that the student teachers better understood how to scaffold learning on the interpersonal plane of the children to support their progression through their ZPD. Indeed reciprocal learning is evidenced here as the student teachers demonstrated that they had reflected on the intrapersonal plane, about the children's feedback, and altered their pedagogy as a result.

However, some student teachers' comments indicated that they had not expected children to engage and have useful ideas about their learning. They had preconceptions about the children's lack of interest and ability to engage in a discussion about their learning which subsequently turned around during the process. To demonstrate this, two student teachers commented that they *"thought the children would be reluctant or unhelpful... worthwhile to have different point of view"* (VM2572, RTM72). They found that the *"feedback from the children is honest"* (CB2571, CHM71). This was taken further by another student teacher who could see the impact on her practice as a result of the feedback, *"The advice (from the children) is benefitting practice"* (PM2572). A further student teacher summarised the benefits of this intervention as being that, the lessons are *"engaging, differentiated, purposeful talk, adults enjoying, no behaviour management issues"* (KBEY2572). This is further evidence of reciprocal learning. The children's feedback on the interpersonal plane scaffolded the understanding about children's learning of the student teachers. In turn this enabled the student teachers to reflect on the intrapersonal plane and so progress their understanding about children's learning. Here the MKOs were the children.

As well as supporting the student teachers' practice in the classroom the student teachers also commented on how their own reflections were developing as a result of engaging with this intervention; *"Reflection is helped by listening to the feedback"* (CB2571, KW2571, SC72, ECEY71). Another student teacher made the connection from the student teachers' reflections supported by the children, back to their own teaching practice by stating the process adds *"value to the use of reflection...(as you can) assess children's understanding to inform planning"* (VM2572). One student teacher pointed out the value of alternative views on the processes in her practice, stating it was *"necessary to be able to pull together all the feedback for the next stages in planning"* (KBEY2572). This recognition by the student teachers may have indicated that they have been guided, by their alternative MKOs (the children), in support of their development through their ZPD towards autonomy, by demonstrating that the children's feedback was helping them to improve their practice. Indeed one student teacher made this explicit, *"Small group as MKO enables [learning through the] ZPD"* (CCM2573). Moreover, this indicated that the student teachers' reflections on the intrapersonal plane were scaffolded by the children, as MKOs, having fed back on the interpersonal plane.

Several student teachers were more specific about the impact of their changed practice on managing the learning environment. They noted that *"if learning is right, behaviour is managed"* (PM2572, CCM2573) and that *"challenge improves learning environment"* (JL2571). As already discussed above, this seems to be the case in other areas as well, for example 'talk for learning' and that all of this helped the student teacher improve 'differentiation'. Again this indicated how the student teachers reflections on the intrapersonal plane have been scaffolded by their MKOs during their feedback on the interpersonal plane.

Importantly the student teachers also saw that the process of children talking about their learning was helping the children to learn; *"It seemed that the knowledge and understanding from the lesson was only now completely sinking in through discussing it"* (KM72). In addition it was evident to the student teachers that they could see that the children were able to articulate processes which helped them to learn; the *"children reflected on how they learn – talk partners, activities hands on, real life"* (VM2572, KW2571, CJ2571, JL2571, KBEY2572, PC72, KM72), indicating that the children not only understood what

they were learning, but also how they were learning it. Here it is seen that through this intervention the children were stimulated to reflect on their learning on the interpersonal plane. The Thinking Fish scaffolded those reflections which were then articulated in the interpersonal plane with their MKO, the student teacher. Powerfully, this indicated that this intervention scaffolded children to reflect on the intrapersonal plane and developed their own understanding about their own learning processes as well as the content/knowledge learnt.

Importantly one student teacher reflected that it was *"What children did not say, caused me to reflect more"* (JD2572). This indicated that she was listening to the children's feedback closely in order to hear what they said and noticed what was not present in her feedback that she was anticipating. In turn this allowed her to reflect on what might have been missing and why. The student teachers valued this intervention, saying that it was *"Important to take note of children's ideas and involve them in their learning"* (SC72). More than that, they would use this in their own practice in the future; *"I will get children to reflect on their own learning regularly and inform me/my teaching to meet their needs"* (VM2572, KW2571, CHM71) as, *"getting it right for the children's learning...listening to them and planning according to this, improves my teaching"* (KW2571). It is *"worthwhile even if it is hard to fit in, children wanted to do it and work hard... seen progression in learning"* (CJ2571, KBM2572, SBM72, KBEY2572, KM72, RBEY71, and ECEY71). The *"children felt valued when their feedback was acted on"* (VM2572) and it enabled the student teacher to consider ways in which children learn best (CCM2573, RTM72). One student teacher concluded that, he *"believes in this way of working to support, guide and scaffold further learning"* (MCMSEND72). These reflections by the student teachers on the intrapersonal plane demonstrated their progress through their ZPD towards autonomous teaching practice. They indicated that they would change and develop their future practice as a teacher as a result of the benefits seen of the interactions on the interpersonal plane, scaffolded by the bespoke pedagogical tools implemented.

One final area on which student teachers commented was that the *"mentor was able to see progress from the feedback"* (SS2572), and importantly, that the *"children's and mentor's feedback is connected"* (SC72), thus demonstrating how feedback from a variety of sources can be triangulated to provide insight

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into student teachers' teaching practice. Furthermore, this indicated the student teachers' developing understanding of less reliance on a mentor as the only MKO available to them to scaffold their understanding of children's learning. As the mentor and the children fed back about similar areas, it can be assumed that, in the future, by adopting the practice of listening to the scaffolded voices of the children on the interpersonal plane, student teachers may make progress through their ZPD.

5.3 Findings from mentors' qualitative observations

The mentors' observations were analysed, themes were identified and mapped onto the representation by Tharp & Gallimore (1998) of social constructivist theory of learning (Vygotsky, 1978). The statements are listed under the stages of learning to which they relate as depicted by the model.   For example the theme "talk for learning" which is associated with assistance by an MKO in social constructivist theory (Vygotsky, 1978) is listed under stage one (table 26 below).

Table 26 The themes from mentors' observations by stage of learning - adapted from Tharp & Gallimore (1998)

Stage 0	Stage 1 Assistance by More Knowledgeable Other (MKO)	Stage 1/2	Stage 2 Assistance by self	Stage 2/3	Stage 3 Internalisation, automatisation and appropriation	Stage 4 Deautomatisation. Recursive loop begins as required
Teacher persona	Clarity of language		Scaffolding		Changes to practice	
Learning environ-ment	Planning for learning					
Plenary	Talk for learning		Subject knowledge		Differentiation	
	MKO				Challenge	
	Assessment					
	Progress					

When reviewing the data in this way it was clear that the mentors' observations identified aspects of learning, in the student teachers' practice, across social constructivist learning theory (Vygotsky, 1978). The mentors, aided by the scaffolds of the lesson observation were able to articulate themes about the student teachers' understanding of children's learning. The fact that these themes spread across the stages in social constructivist theory (Vygotsky, 1978), as represented by Tharp & Gallimore (1998), indicated that the mentors understood the various stages of learning, and that the student teachers engaged to a greater or lesser extent with all aspects of a social constructivist view of learning. However what this also indicated is that the mentors appear to see the social constructivist view of learning in broader terms than either the student teachers or children, who were both more specific. This could be because some aspects of learning from a social constructivist perspective are difficult to observe and record on the observation tool. It could also indicate that the mentors were less focussed on the underpinning pedagogy of the student teachers. It could further indicate that the mentors were not making links to the social constructivist learning theory explicit in their feedback. In turn this could be an area which if they were more explicit, as the student teachers MKO, they could perhaps help student teachers to understand children's learning better.

In order to represent the frequency of occurrence of each of these themes a graph was constructed so that frequencies may be compared (see figure 13 below). The graph (figure 13 below) summarises mentors' qualitative comments from their observations of student teachers. The graph represents a simple frequency tally of comments made by the mentors, and is grouped around themes inducted from the entire dataset of mentors' feedback. The themes which occur most frequently are differentiation, managing the learning environment, the MKO and scaffolding. The themes which occur least frequently are subject knowledge, plenary and teacher persona. This indicates that the mentors' feedback had some focus on some areas associated with a social constructivist view of learning (MKO, scaffolding, differentiation). The mentors' most frequently occurring themes are discussed below.
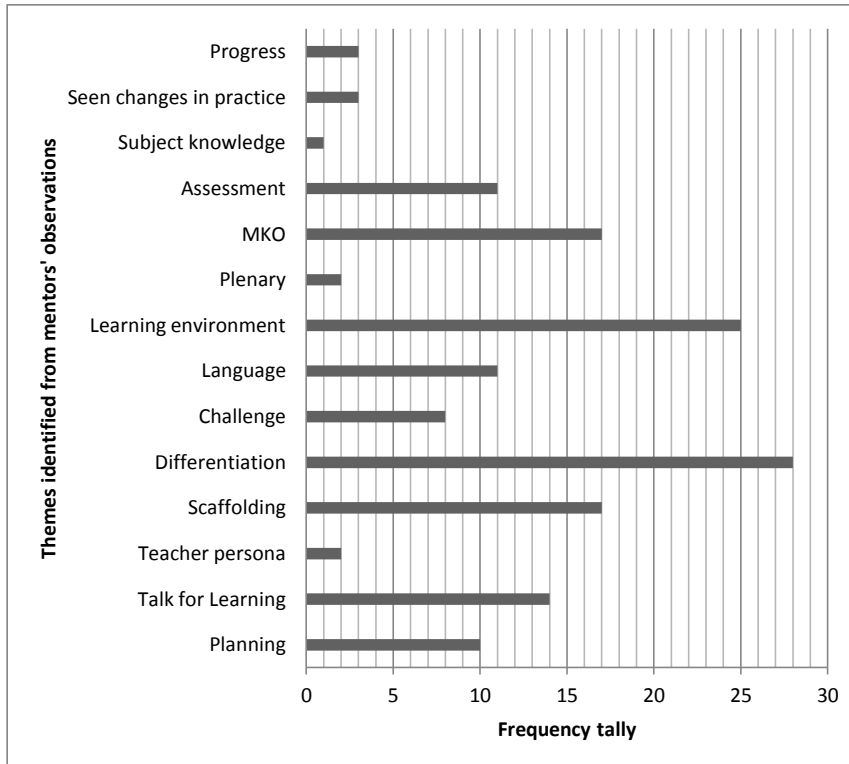
Figure 13 Frequency of themes emerging from mentors' observations

5.3.1 Themes considered most frequently from mentors' observations

Themes most commonly associated with pedagogy based on social constructivist principles, such as MKO, scaffolding, talk for learning and so on, were not the most frequently tallied. However, in the feedback of the mentors to the student teachers, these aspects are addressed through other points. For example, talk for learning and its support for children's growing understandings is addressed in association with how the student teacher had managed the learning environment. This indicated that social constructivist views of learning were understood by mentors, but that they addressed the issues of teaching and learning associated with them alongside other aspects highlighted for the student teacher to develop. Additionally, it could be conceived that the mentors therefore placed value on aspects which most readily required development, in their opinion, by the student teachers in order to both progress their understanding of learning but also to have the most impact, most quickly on the children's learning. In this scenario, managing the learning environment for

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example becomes more important to address as without that learning cannot take place effectively.

The most frequent theme that emerged was differentiation. This related directly to the student teachers' understanding of children's learning and how to address their needs through teaching. Perhaps, unsurprisingly for student teachers, this appeared to be an area in which they required the most support and feedback from mentors. This showed the benefit of the experienced MKO (mentor) guiding the student teachers on the interpersonal plane through their ZPDs to understand the range of children's learning in the class; each child being different and having different learning needs. Tailoring learning for all these individual children is a complex task and, as such, student teachers at the start of their understanding of children's learning could reflect, on the intrapersonal plane, on the feedback from their mentors and consider how to alter practice in the future. Interestingly however, the student teachers acknowledged the comments about differentiation but did not connect this to a developing understanding of children's learning and how this intervention may be used to support that developing understanding explicitly. It was implicit, however, as discussed above.

The second most frequently commented upon aspect of student teachers' practice was their ability to manage the learning environment. This was interesting because it may have been an indication that the mentors judged the quality of the learning happening by the management of the learning environment. In addition it may have meant that because the student teacher did not manage the learning environment in the same way as the mentor, that this influenced the feedback given to the student teacher. Further, the management of the learning environment may have been more observable to the mentors and therefore commented upon more frequently than the learning of the children, which may be less overtly visible when observing in a classroom. One mentor made this point implicitly in his/her comments in that they talked about the student teacher using talk for learning to *"generate ideas together"* however, he/she also pointed out that having adopted talk for learning approaches, the *"behaviour management is more of an issue"* and yet they mentioned that the student teacher *"builds on learning"* and *"extends"* children's understanding (SC72). This may have indicated that the talk for learning approaches adopted

by the student teacher were badly managed and therefore caused issues with the children's behaviour which, in turn, the student teacher struggled to manage. Alternatively, it could mean that because the talk for learning approaches led to more engagement between the children so that the mentor found it difficult to observe learning outcomes of individual children, and therefore noted that the learning environment was affected; thus the process of learning occurring within the talk activity was not recognised. These messages could be confusing to a student teacher. However another mentor noted specifically that the student teacher made *"time for quality talk"* (KM72), indicating that the impact of talk for learning can be observed. Mentors commented on how the student teachers' are *"addressing needs"* of the children and how this was done through *"challenges in group discussions"* (CWMEG72). Further the mentors indicated that this is a result of assessment and the student teachers' growing understanding of the children's learning needs (SBM72, MCMSEND72, CCM2573, KBM2572 and CHM71). In turn this further indicated the student teachers' developing understanding of differentiation as discussed earlier.

Mentors noted that student teachers had *"taken on board comments from previous lessons"* (PC72) and that they *"reflect and take suggestions"* (EG71). This suggested that the student teacher did not simply do what the mentor told them but that she reflected on the intrapersonal plane, on how and what will benefit her practice, and then implemented it in a way that was appropriate to the children's learning. This also suggested the student teachers' ability to apply the learning from their reflections from the scaffolded feedback on the interpersonal plane from their MKOs, the mentors. Other mentors recognised that the student teachers' adopted practice that was modelled in the school, for example *"using the school's core learning skills of independence and responsibility"* (LH71). This indicated that the student teacher was not only developing understanding of children's learning, but also practices which the mentor had modelled as her MKO, and therefore enabled her progress through her ZPD towards autonomy. These interpersonal interactions with mentors were not scaffolded. Therefore this demonstrated how well the student teachers could reflect on the intrapersonal plane about how certain practices were beneficial to children's learning. Indeed mentors scaffolded the student teachers' understanding of children's learning, through the ZPD by setting targets which were about expectations, scaffolding and differentiating learning

for the children (MCMSEND72). This demonstrated the mentors' understanding that student teachers needed to develop their understanding of children's learning. They scaffolded feedback, as the MKO, on the interpersonal plane to the student teachers to ensure that this aspect was developed and enabled progress through the student teachers' ZPD towards autonomy.

5.4 Comparison of data from mentors, children and student teachers

The graph (figure 14 below) is a comparison of frequencies of the themes arising in the data that are most associated with the principles of social constructivism, by all the participants (mentors, children and student teachers). It shows how the frequency tally of each aspect of social constructivist theory varies by participant. For example the children and the student teacher recognise that talk for learning scaffolds children's learning far more frequently than the mentor.
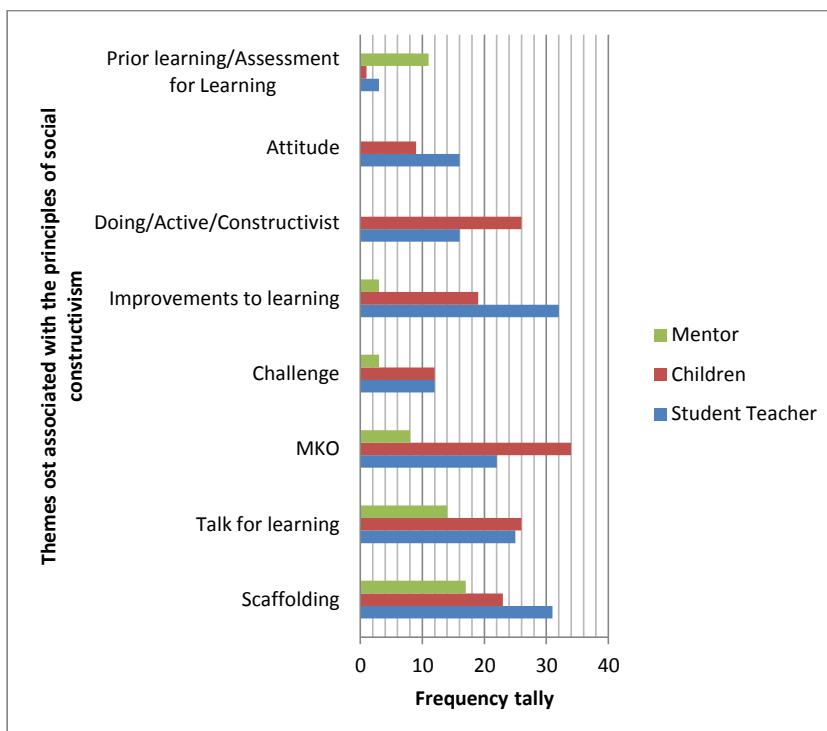
Figure 14 Comparison of frequencies of themes most associated with the principles of social constructivism

What was interesting to note from data above was that all participants whether explicitly or not, demonstrated the value of pedagogy based on social constructivist principles in understanding children's learning in the classroom. However, the mentors placed the least explicit value on these underpinning principles to practice than the other two participants (student teachers and children). This could be because the student teachers were enveloped in a teacher education programme, which directed them to consider both theory and practice. However, this would not be the case for the children. That said, the children were being taught by student teachers who were trying to embed pedagogic principles in practice, and in discussing learning through focus groups articulated the key principles of social constructivism because of what they had experienced as processes by which they learn. What this might indicate for the mentors is that they have become focused towards the teaching practices which elicit activity, rather than the learning pedagogy in the classroom. This may be indicative of the nature of the grading system which they are using to observe the student teachers, but also that is being used to observe them in their practice. In other words, the mentors were not encouraged to look for excellent learning pedagogy in action in their observations of student teachers, nor were they encouraged to demonstrate excellent learning pedagogy in their practice when they were observed by Ofsted, for example.

Mentors have undertaken ITE where, they too, have been encouraged to consider the connections between learning theory and pedagogy. However, through the central processes imposed on them by the UK Government, required to demonstrate that children are learning, they may not be making these explicit connections themselves. This was further demonstrated in the graph (figure 14 above) as the mentors did not comment on learning practices. Both student teachers and children did, where children constructed learning for themselves, and yet mentors did not comment on the learning activities in which the children were constructing understandings. Perhaps what was evident here was that mentors were observing what they, themselves, are being encouraged to include in their own teaching practice. This could be perceived therefore as mentors encouraging 'good practice' in their student teachers, but it did not put the learner (the child) at the heart of the process and respond to their needs.

What was concerning was that this may put the student teacher in opposition to the mentor and this may in turn impact on his/her ITE observation grading.

Overall what this may have indicated is that social constructivist principles were embedded in the classrooms in which the student teachers were operating. The student teachers and children were articulating their engagement with the pedagogy at a level which was appropriate to them and their developing understanding of the learning process. The mentors focussed on the learning of the student teacher to become a teacher, rather than their learning pedagogy in the classroom.

5.5 Findings from mentors' quantitative observations

5.5.1 Average points score

The bar chart (figure 15 below) shows the average points score for the cohort at the start of the intervention and at the end of the intervention. It shows both the start and end point of the mentors' overall grades and for each of the individual areas that they observed. It also shows the progress overall and the progress for each of the individual areas observed.

The graph (figure 15 below) appears to demonstrate that the student teachers collectively made progress both overall and in each of the individual areas observed. This was demonstrated by the average point scores reducing between the start and end point of the intervention. Overall there was an average of zero point four points progress. Most progress in the individual areas was seen in supporting individual needs. This relates directly to the social constructivist principles of learning as it represents the scaffolding of learning in the ZPD. The progress made in this area was zero point three points. This is less than the overall progress and as such may raise questions about the overall grade, the grades for the individual areas and how they relate to each other.

	Overall		Progress and challenge		Subject knowledge		Planning		Resources inc. Other Adults		Engagement		Talk for Learning		Behaviour Management		Flexibility and Adaptability		Assessment for Learning		Individual needs	
	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
Sample	2.8	2.4	2.3	2.2	2.3	2.2	2.3	2.2	2.2	2.0	2.1	2.0	2.1	1.9	2.1	1.9	2.1	2.0	2.3	2.2	2.2	1.9

Progress	0.4	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.3

Figure 15 Average points score, overall and for individual areas observed

Abbreviations for all average points score charts: S=start, E=end, Prog &Chal= progress and challenge, SK= subject knowledge, Plan'g= planning, Res inc. OAs = resources including Other Adults, Eng= engagement, TfL=talk for learning, BM=behaviour management, flex/adapt=flexibility and adaptability, AfL= assessment for learning, Indiv' needs= Individual needs

It was interesting to review the student teachers that fall above and below the cohort average point score at the start and end of the intervention by category to identify whether there might be any suggestion, that particular groups might make more (or less) learning gain in any area. If this was the case then further research would be needed to explore these tentative suggestions. At the start of the intervention, the student teachers that fell below the cohort average points score of two point eight were: six males (total sample in the cohort seven), three from a minority ethnic group (total sample in the cohort four), two with identified Special Educational Needs or Disabilities (total sample in the cohort two), six over twenty five years old (total sample in the cohort thirteen) and five were from the Early Years route (total sample in the cohort seven). This indicated that many of the student teachers that had low starting points according to their average point score were from the small, groups considered potentially vulnerable by (Ofsted, 2009). At the end of the intervention, the student teachers who fell below the cohort average points score of two point four were: four males (total sample in the cohort seven), two from a minority ethnic group (total sample in the cohort four), two with identified Special Educational Needs or Disabilities (total sample in the cohort two), six over twenty five years old (total sample in the cohort thirteen) and four from the Early Years route (total sample in the cohort seven). This indicated that many of the student teachers that had low starting points also had low end points according to their average point score and were from the small groups considered potentially vulnerable by Ofsted (2009).

I was conscious that the numbers in each of the groups mentioned were far too small to be generalisable. In addition I was careful not to attribute differences in average points score to the student teachers' ethnicity, gender, age, and so on as there may be a wide range of social, cultural and other factors which are of influence. I was simply looking at progress within the groups rather than making comparisons. Further I also bore in mind that the observations against criteria may not be the most trustworthy way to record performance data. However, due to the nature of the ITE context of the research the differences are useful to note as they align with what is reported for Ofsted purposes, and may therefore be purposeful in justifying this approach in the future. On this basis it was worth looking in more depth at the average points score at the start and end of the intervention. Therefore, the average point score for each of the groups

identified as underperforming or underrepresented by Ofsted (2009) were reviewed. The start and end points for both the overall average points score for each of the groups and the average point score for the individual areas observed were considered. This is discussed below.

5.5.2 Gender

The graph demonstrating the average point score overall and in the individual areas observed by gender can be found in appendix J. For both the overall grade and for each of the individual areas the males began from a lower starting point than the females and that trend remains the same at the end of the intervention although the gap has closed slightly. This may indicate that this intervention works well for males as it scaffolds them to interpret the social constructivist pedagogy in their practice. The males made most progress with resourcing learning, including deploying other adults (a key part of social constructivist learning theory – scaffolding learning using MKOs) whereas the females made most progress with talk for learning and progress and challenge (both key parts for social constructivist learning theory – understanding the learning in the ZPD on the interpersonal plane).

5.5.3 Minority and ethnic groups (MEG)

A graph demonstrating the average points score overall and in the individual areas by ethnicity can be found in appendix J. The overall grade indicated that the student teachers identifying as being from a minority and ethnic groups (MEG) begin from a lower starting point than those student teachers who identify as White and that remained the same at the end.

In two of the individual areas, talk for learning and behaviour management the MEG student teachers had a better average point score starting point than the White student teachers and in one of these categories, talk for learning, as well as also deploying resources (including other adults) their average point score appeared to worsen over the course of the intervention. Ofsted (2009) identified student teachers from a MEG as being potentially vulnerable due to having English as an Additional Language (EAL). As this intervention used a large amount of oral communication, and therefore language, with the children, an additional challenge may have been that the student teachers in this group also had EAL. This may have been disadvantageous to their progress in understanding of children's learning. The student teachers from MEGs made

most progress with responding to individual needs and progress and challenge (key parts of social constructivist learning theory – scaffolding learning through the ZPD), whereas the student teachers who identified as White made most progress with responding to individual needs, as well as talk for learning (both also key parts for social constructivist learning theory – understanding the learning in the ZPD on the interpersonal plane). This indicated that this intervention enabled student teachers to embed the pedagogy in their practice but in different ways and would require further research.

5.5.4 Age

Another group often considered to be 'underperforming' or 'underrepresented' (Ofsted, 2009) in ITE are those student teachers who are considered to be 'mature' (as defined for postgraduate study being over the age of twenty five years old). A graph showing these data can be found in appendix J. Here we can see that those student teachers who are over twenty five have a higher starting point overall then the under twenty fives.

It was here that questions could be raised about the initial grading of the mature student teachers. It could be that mentors' expectations for the mature student teachers was higher at the beginning due to their past experiences in schools and so on; thus the higher overall grade, however the reality of a sequence of teaching reflected that is not the case. Mature student teachers had to learn to teach too. However, this notion did not hold with regard to the individual areas as, interestingly, the over twenty fives had lower starting points in all the individual areas than the under twenty fives. The over twenty fives made most progress in talk for learning (a key part for social constructivist learning theory – understanding the learning in the ZPD on the interpersonal plane), compared to the under twenty fives who made most progress with behaviour management, talk for learning and progress and challenge (both also key parts for social constructivist learning theory – understanding the learning in the ZPD on the interpersonal plane).

5.5.5 Special educational needs and disabilities (SEND)

The data surrounding the student teachers who themselves had special educational needs and disabilities (SEND) is very limited. The SENDs of the student teachers were in the field of dyslexia. There were only two student teachers in this category, so the data was not based on a reliable sample.

However, the proportion of student teachers with special educational needs and disability in the sample for the study is the same proportion as in the whole original cohort of PGCE student teachers for this study (see methodology for sampling).

Despite having a lower overall starting point the student teachers who identified with SEND had better or equal starting points in the individual areas observed in all but one area; progress and challenge. The data from this group of student teachers was represented in a graph and can be found in appendix J. From these data this group of student teachers have made no progress in any area, nor overall during the intervention. One might surmise that the intervention therefore may not be appropriate for this group of student teachers. However, in all individual areas, except one (progress and challenge) the student teachers with SEND achieved more highly than the student teachers without needs identified. Further, what needed questioning was the overall mentor grade being low at an average point score of three and yet in eight out of the ten categories this group of student teachers were achieving levels of one point five. With a best-fit approach to using the individual grades as a guide to the overall grade, the overall grade should therefore be much higher. This appeared to raise many questions about the grading system and its possible flaws and this required further inquiry. This issue is discussed later.

5.5.6 Route

The early years phase group of student teachers had a lower overall starting point than the primary phase group, but by the end of the intervention the situation was reversed with the early years group having increased their average point score and ending with a marginally better overall grade. Additionally, in all individual areas, apart from behaviour management they had higher starting points than the primary phase group. This could indicate: a flaw in the observation tool itself; or in the mentors' recording on the tool as this is an unusual finding; or the student teachers' past experience may be influential in their success here. Data from this group was represented graphically in appendix J.

The early years phase group made most progress in behaviour management, talk for learning and resources (including deploying other adults) (both key parts of social constructivist learning theory – understanding scaffolding learning with

an MKO on the interpersonal plane through the ZPD). The primary phase group made most progress in responding to children's individual needs (also a key part of social constructivist learning theory – scaffolding learning through the ZPD as the MKO on the interpersonal plane). What is interesting here is that due to the nature of an early years environment much of the learning is conducted using social constructivist principles, indeed one of their 'curricula' was written with this pedagogical approach in mind, and therefore the progress here may be due to the fact that this group had better opportunity to practice the philosophy underpinning social constructivism because they were in learning environments that better enabled the practice to take place.

5.5.7 Course end grade

The rhetoric from all those involved in ITE, DfE and Ofsted included, is that they wish to develop the best teachers for the future as is possible (DfE, 2010). As such there is great concern that the students achieve at least 'good' by the end of their teacher education programme. Data from this group was represented graphically and can be found in appendix J.

Interpreting this set of data was interesting because the study had suggested thus far that there was juxtaposition between grading and the social constructivist learning pedagogy used in this intervention. It appeared ironic therefore that here the grading seemed to demonstrate how a deeper understanding of social constructivism and its approaches improved the grades of the perceived weaker students. During this intervention the student teachers who completed the PGCE course (six months after this intervention) graded as satisfactory (three) or below already had lower average points scores than of those that would go on to achieve at least good (two) at the end of the course. However, during this intervention, this perceived to be lower performing group of student teachers achieved greater progress than their counterparts. In six out of the ten individual areas they made more or equal to the level of progress than that of the other group and particularly excelled in their understanding of responding to children's needs (a key principle of social constructivist learning – scaffolding learning through the ZPD as the MKO). Despite starting with higher average points in talk for learning however, they failed to make progress in this area. There were two possible conclusions that may be drawn from this. One is that this intervention was particularly supportive to developing weaker student

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teachers because it connects the theory and practice more closely together, thus improving their pedagogy. The other was potentially, key areas like talk for learning may not have been developed because large amounts of progress were needed (and being achieved) across all other individual areas, therefore the student teacher focussed in on areas that were considered to be more important to their development. Another could be that there are flaws in the tools used for observation and assessment.

5.6 Summary of analysis of average point scores across groups

The group of student teachers whose average point score improved the most are those who completed the course with a grade 3 (satisfactory). The group of student teachers whose average points score improved the least are those with identified SEND.

The findings, across the groups analysed, indicated that the two individual areas observed that improved the most during this intervention were individual needs and talk for learning. These were strongly associated with the principles of social constructivist learning theory as they relate to the MKO facilitating learning on the interpersonal plane through the ZPD towards autonomy. Data across the groups analysed indicated that the two individual areas observed that improved the least during this intervention were engagement, and flexibility and adaptability. This was interesting as it could be assumed that for student teachers to respond to individual needs they need to be flexible and adaptable in their approach, applying learning and teaching techniques which are engaging. However, it could also be interpreted that in adopting the practices associated with this intervention, student teachers could be limited in their approach and therefore remain rigid to the process which could lead to a lack of flexibility, and adoption of techniques which are less engaging. Further it could be an indication that the student teachers had so much to consider during this intervention, that their focus was diverted towards adopting social constructivist principles into their classroom pedagogy, and therefore, other areas of their practice were less well developed.

5.7 Adaptation to the data collection tool

As already explained (see methodology), some student teachers adapted the Thinking Fish image (data collection tool) in the focus group discussions to suit their context and children's learning. As such it was considered necessary to

review whether this had a particular effect on the development of the student teachers' understanding of learning and teaching. The graph (figure 16) below demonstrates the average point score of student teachers by data collection tool used with the focus group of children during this intervention. It shows that student teachers who used an adapted version of the Thinking Fish made zero point four average points progress overall compared to zero point two points for those who used the Thinking Fish. In addition, progress was made in all of the individual areas observed for student teachers who use either tool. This indicated that a change in tool still enabled progress. This could perhaps be because it supported the student teachers to understand children's learning better because the tool was context appropriate, and therefore the children were better able to understand it and engage with it to articulate their understanding about their learning.

	Overall		Prog & Chall		SK		Plan'g		Res' inc. OAs		Eng.		TfL		BM		Flex/Adapt		AfL		Indiv' needs	
	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E
Adaptation	2.9	2.5	2.2	2.2	2.5	2.2	2.3	2.2	2.3	2.0	2.1	2.1	2.5	2.2	2.4	2.3	2.3	2.2	2.2	2.1	2.2	1.8
Fish	2.6	2.4	2.4	2.2	2.2	2.1	2.3	2.1	2.2	2.1	2.1	1.9	1.9	1.7	1.9	1.7	2.0	1.9	2.4	2.2	2.2	1.9
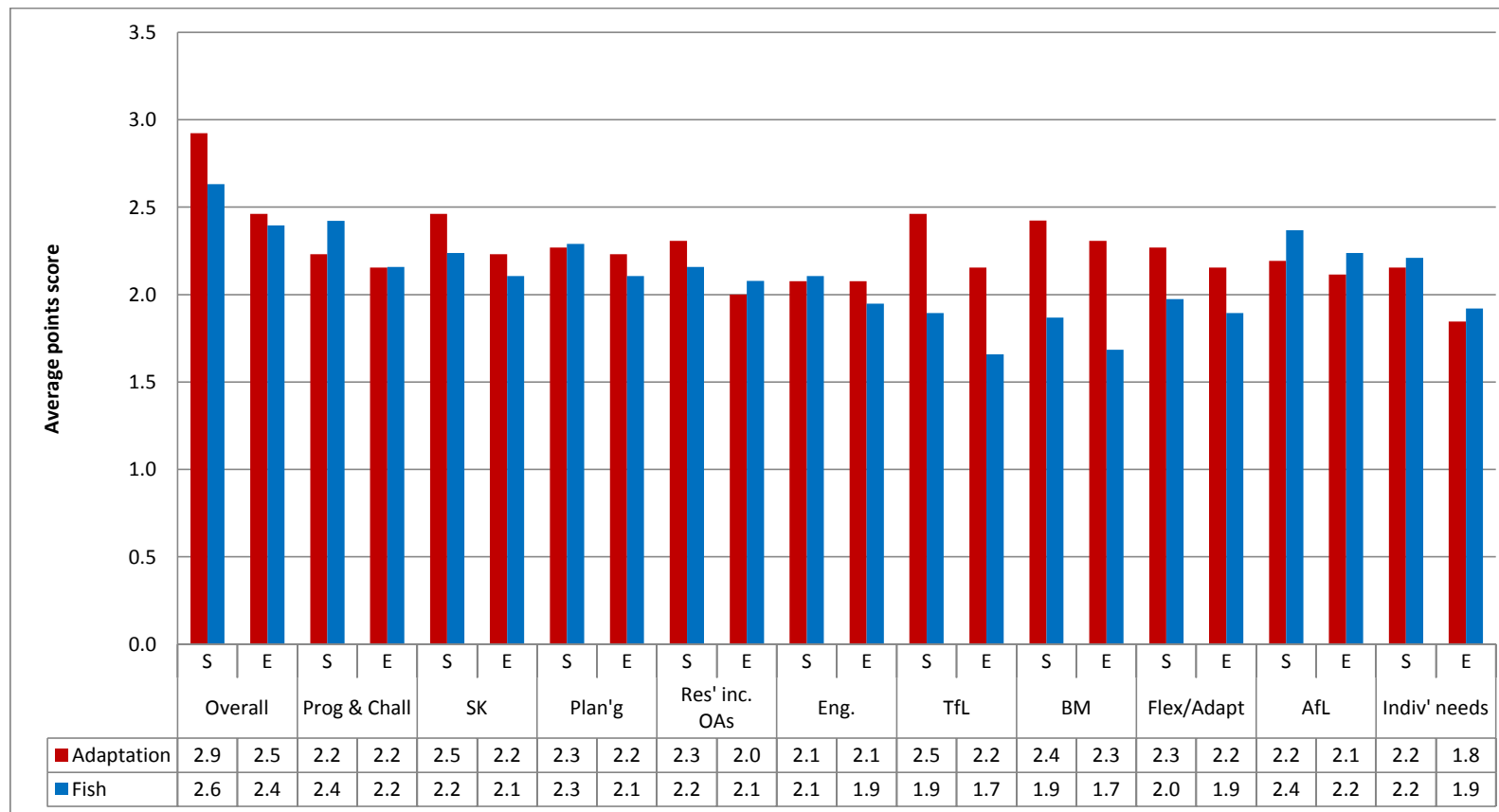
Figure 16 Average point score by data collection tool

It appeared that adapting the image may have impacted more positively on the student teachers' understanding of learning. The overall grade and some of the individual areas; subject knowledge, resources including other adults, talk for learning, and responding to individual needs, all indicated this. The latter three areas mentioned are closely associated with social constructivist pedagogy (scaffolding learning through the ZPD with an MKO on the interpersonal plane). Again, this positive impact could be because both the student teacher and the children better understood the research tool, as it has greater relevance to the context in which they were working. However, those student teachers using the Thinking Fish also improved their average point score in these areas too, although the progress was not as great.

5.8 Proportional Gain

5.8.1 Whole sample

I began with a review of the whole sample as an initial overview of the proportional gains in grading made by student teachers during the intervention. I used the grades from the mentors' observations as the basis. Table 27 below shows the average proportional gain made by the whole sample of participants during this intervention.

Table 27 Average proportional gains by the sample of participants

Average whole sample start grade	Average whole sample end grade	Average progress gain	Average possible gain	Average proportional gain (%)
3	2	1	3	15

Overall the sample of participants made an average proportional gain of fifteen per cent, during the time frame of this intervention. This may indicate that this intervention is successful. It was also considered that these data may not reveal the success of the intervention as there is no 'control' group, who did not undertake the intervention, with whom to compare. The graph (figure 17 below) considers this from the perspectives of the groups of student teachers identified and themes inducted from the data set.

5.8.2 Proportional gain by group

Again I was conscious that the numbers in each of the groups (gender, ethnicity, age and so on) were far too small to be generalisable. In addition I was careful not to attribute differences in proportional gain to the student teachers' ethnicity, gender, age and so on as there may be a wide range of social, cultural and other factors which were of influence. I was simply looking at the groups rather than making comparisons. Further I also bore in mind that observation against criteria may not be the most trustworthy way to record performance data. However, due to the nature of the ITE context of the research, the differences are useful to know as they align with what is reported for Ofsted purposes, and may therefore be purposeful in justifying this approach in the future. On this basis it was worth looking in more depth at the proportional gain by these groups during the intervention.   This is discussed below.

The graph (figure 17 below) shows the average proportional gain by group in percent. It shows the overall whole sample proportional gain (fifteen percent). It also shows the proportional gain by research tool used. This is to reflect the changes made by some student teacher to the Thinking Fish image as discussed above.   All groups made proportional gains except those student teachers indentified with SEND.   The group of student teachers who made the most proportional gain in the time of the intervention were those student teachers who finished the course, a few months later, with a less than good grade.
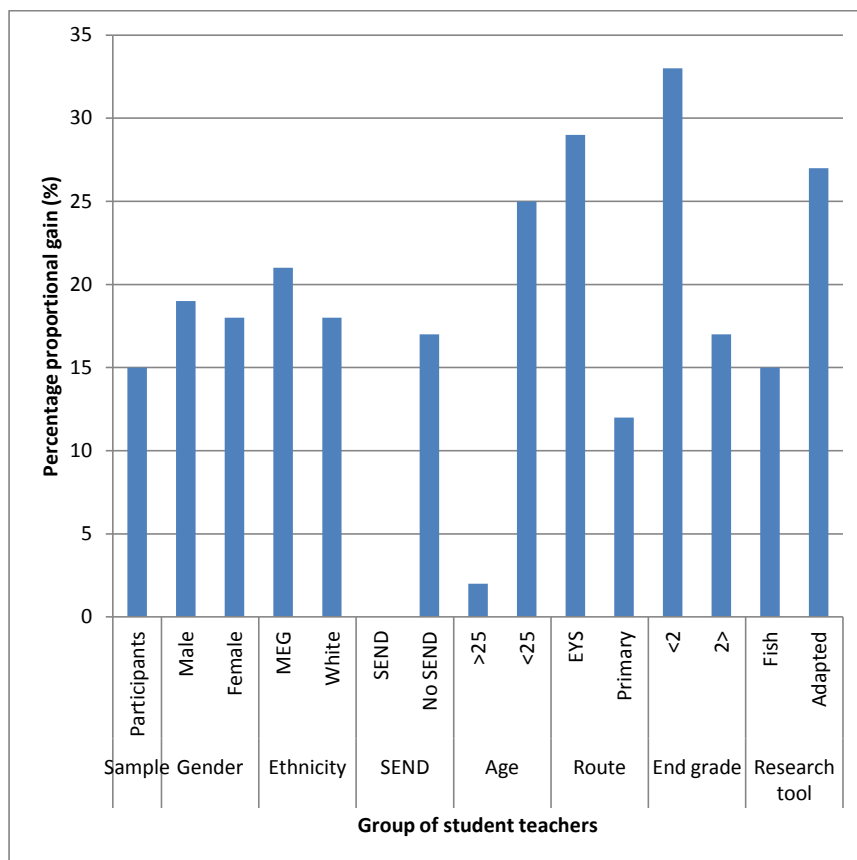
Figure 17 Average proportional gains in percent (%)

The graph (figure 17 above) demonstrates that this intervention appeared to benefit some groups more than others. For example, in this chart it can be seen that student teachers who are male, from a MEG and are under twenty five years of age are possibly advantaged by adopting the process. Equally it appeared those student teachers who adapted their research tool and completed the course with a grade three (satisfactory) or less, made more proportional gains than their counterparts. The student teachers who identified with SEND and were over twenty five years achieved lower proportional gains than the sample overall average of fifteen percent. The average proportional gain data above corroborated the average point score analysis, discussed above, in all areas.

5.8.3 Proportional gain by areas observed

The graph (figure 18 below) shows the mean proportional gain made by the student teachers in the individual areas observed by the mentors. The student teachers in the sample made proportional gains in all of the individual areas observed as well as overall. Most gains during the intervention were seen in the areas of resources, including other adults and individual needs. These closely align with social constructivist understandings of learning as they represent the scaffolding by and MKO on the interpersonal plane in the ZPD. Least proportional gain during the intervention was made in the area of flexibility and adaptability.
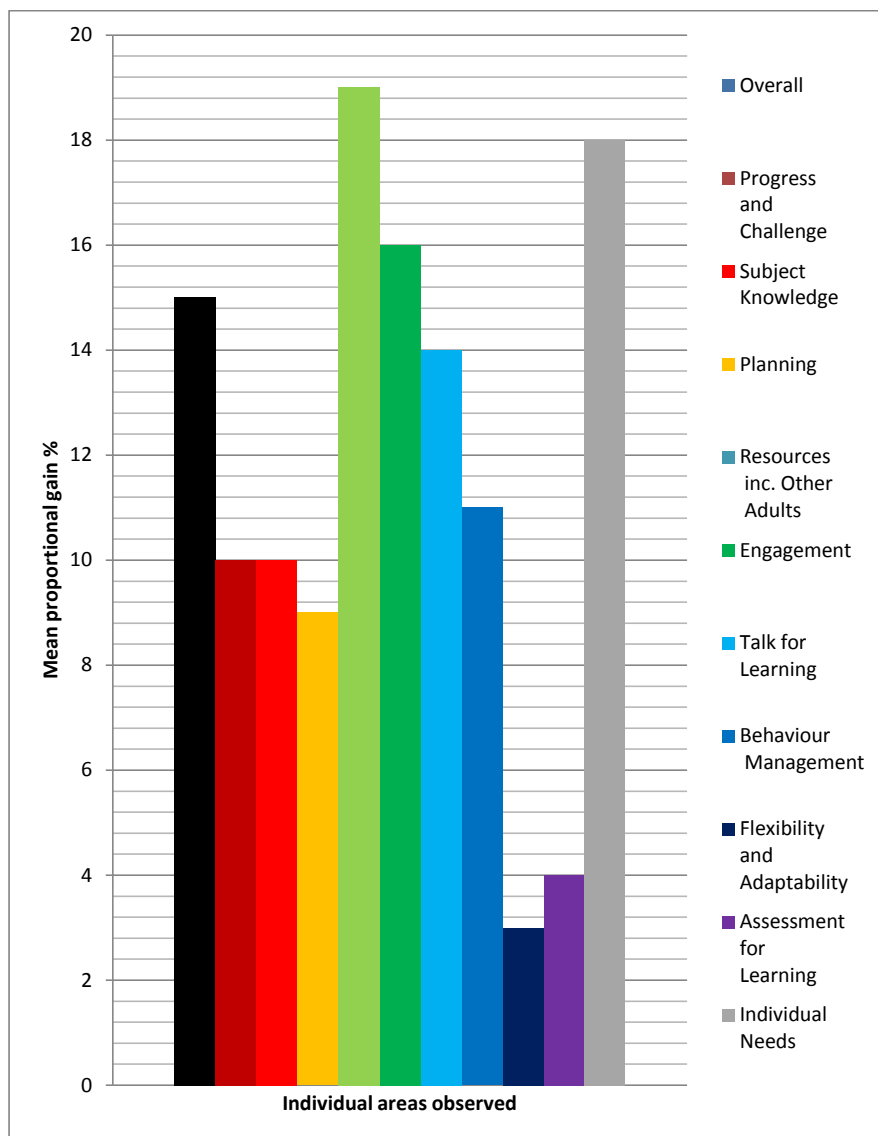
Figure 18 Mean proportional gain by individual areas on observation tool

As with the average point score analysis, student teachers demonstrated the best proportional gains in responding to individual needs in addition to resources, including other adults. Both of these areas are closely associated with social constructivism as they relate directly to the notions of scaffolding learning in the ZPD with the MKO to move the learning toward autonomy. This may be due to the fact that this intervention enabled student teachers to gain a better understanding of children's learning, and therefore they are better able to

respond to their individual needs. Moreover from a social constructivist viewpoint, student teachers also made relatively good proportional gain in the area of talk for learning. This relates directly to the principle of dialogue with an MKO on the interpersonal plane to move learning through the ZPD. These results may indicate that the use of an MKO in supporting children has enabled the children make progress through their ZPD. Student teachers made least proportional gain in the areas of flexibility and adaptability which again aligned with the findings from the average points score analysis.

5.8.4 Summary of thoughts

It was worth at this point summarising some 'noticings' from this set of data. Of the thirty two student teachers in the sample, twenty student teachers featured as having proportional gains in some of the individual areas observed. The remaining twelve student teachers made no proportional gains in any of the individual areas observed. There are two student teachers who consistently achieved proportional progress above that of the cohort in nine out of the ten individual areas observed (see discussion below). On this basis, it could be concluded that this approach is accessible to all student teachers, but that some do better than others, which would be expected in any cohort of people undertaking the same task. Also, perhaps those student teachers with smaller proportional gains achieved more than they would have done with another intervention, in terms of their growing understanding of learning.

From these data it was apparent that progress grades at this stage (first placement) of the course do not determine outcomes for student teachers at the end of the course/training period, which emphasises the point that grading the student teachers does not necessarily support their development of understanding about children's learning. Moreover, gender, ethnicity, age, route/course appear not to be associated with success or failure in particular individual areas. It may indicate that this intervention has a particular impact in certain individual areas (see above) more than others because the student teachers understand the children better from the focus group discussions (social constructivism in action – children as the student teachers' more knowledge others) and therefore the student teachers are better able to scaffold the children's individual needs (social constructivist principles in action – student teachers as the children's MKOs).

5.9 A closer look at two student teachers

As only two student teachers achieved a proportional gain in nine out of a possible ten, for both the individual areas and overall grades, it is useful to take a closer look at their profiles to identify possible patterns.

The characteristics of these student teachers were; white, female, one over and one under twenty five years old, without identified special needs, one on the primary route and one undertaking the early years route. Both were in primary schools, teaching core subjects in schools located in the west of the local area and attained outstanding at the end of the course. This was interesting in the light of the earlier discussion about the student teachers who may or may not be advantaged by this approach, as they did not fit the description completely. However they were perhaps closer to the Ofsted (2009) descriptors of being in less vulnerable groups, that is not MEG, SEND nor male.

The mentor of ECEY71 commented that by the last day of the intervention she had listened to and acted on advice given. The mentor of CJ2571 stated that she could see progress from the day before. This suggested that these student teachers were accepting the guidance of their MKOs and acting accordingly to adjust their practice thus demonstrating explicitly their progress as a teacher through their ZPDs. ECEY71 found the direct feedback from the mentor useful in providing pointers to enable children's progress but also the indirect feedback from the mentor through their modelling of practice. Equally CJ2571 found the encouragement and support to explore options and possibilities by the mentor to be integral to her success.

Additionally the children expressed an attitude that was interpreted by ECEY71 as positive because they were being listened to. During the intervention this group of children were able to identify more learning points and describe how they enjoyed a variety of learning methods. ECEY71 noted that she could see progression in the feedback that the children were giving her including how they found working with the teacher, how beneficial it was having resources to support their learning and ideas of how they could learn things in the future. ECEY71's own reflections noted that she could see that listening to the children was necessary to be a successful teacher who moves learning forward and that the children's understanding about how they learn and what they need therefore moves forward with practice. CJ2571 echoed this notion by recognising that the intervention was worthwhile. Again we saw here the student teachers' readiness to listen to their

MKOs and act on their feedback, although this time the role of MKO is fulfilled by the children. Further ECEY71 saw her own development as a teacher and was clear about how to change her practice to support the children's learning noting that, *"can't assure that all children understand and so may need to change plans to enable their progress".*

This statement would indicate an ability to be flexible and adaptable in practice as it suggests moving away from the predetermined planning. This would be a characteristic of reflection in action (Schön, 1991). This is in addition to the mentor's comment regarding ECEY71 acting on advice given, which would suggest reflection on action. Interestingly the 'missing individual area' for CJ2571 is being flexible and adaptable, the characteristic of reflection in action.

Looking at ECEY71's proportional gains across the individual areas, there was one in which she appeared to not have made progress, this being talk for learning. This is perhaps concerning in the light of the fact that this intervention is cast under social constructivist pedagogy, however when looking closely she has been a 'victim' of the ceiling effect discussed earlier, as she started this individual area graded as outstanding and completed at the same level. In fact she is the only student in the sample to have achieved an outstanding in this individual area at the start or end of this intervention. CJ2571's proportional gain in talk for learning was her best improvement, equal only to her achievement in behaviour management. This could indicate the importance of developing this practice as part of the pedagogy. Perhaps if a student teacher attains an outstanding in this individual area then it enables excellence to be attained in all other aspects of the student teacher's practice. This could mean that in undertaking this intervention which was intended to deepen the connection between social constructivism as theory and social constructivism in practice, there was an increased understanding of children's learning and therefore teaching practice improved. Again this negates the notion that grades helped to develop the performance, but rather that the understanding of the pedagogy played an increasingly important role.

In summary it would seem that embedding talk for learning in social constructivist pedagogy are the possible keys to success when working in this way.

5.10 Summary

To support the claim that this intervention supported student teachers to develop their understanding of learning and therefore social constructivist pedagogy in relation to what they understood about learning, it was important to triangulate the data from both quantitative and qualitative sources in order to demonstrate improvement. The themes inducted from the qualitative data were used here as a scaffold to the discussion of the data.

Managing the learning environment was a theme identified by the qualitative data as being important to this deliberately social constructivist intervention. However the average points scores also showed that for the student teachers from minority ethnic groups, the early years route and the under twenty five year olds, managing the learning environment improved during this intervention and therefore it was confirmed as an essential element to this approach.

Likewise the theme of talk for learning was inducted from the qualitative data as being an essential part of this approach. This was borne out further by the average point scores of the females, white and early years student teachers, as well as students teachers in all age groups. However, the data showed that this was not the case for the student teachers from minority ethnic groups. In fact the opposite was the case. In using this intervention their grades for talk for learning worsened. As already discussed this may be the due to the fact that this group are closely associated with EAL, and this may have impacted on their ability to truly engage with the intervention as they were learning nuances with language in employing the intervention, that they may not have been familiar with. That said, this group's proportional gain exceeded that of the overall sample and so this does not imply that the intervention was not unsuitable for them, but more that they required further scaffolding from the MKO, with the aspect of talk for learning in order to further develop their attainment. However, as already noted the sample is too small to generalise.

Scaffolding learning and the role of the MKO were taken together as they are part and parcel of the same aspect of social constructivism that is, the means to support the learners' learning through their ZPD. This intervention may have supported some groups to understand children's learning more effectively. This was evidenced particularly in both the average points score and proportional gains for student teachers from the following groups, males, minority ethnic groups, those who attained a grade requiring improvement at the end of the

course and primary trained student teachers with regard to the individual area of responding to children's individual needs. Indeed all student teachers made progress in line with or above the proportional gain for responding to individual needs. This may indicate the effectiveness of this intervention of developing student teachers' understanding of children's learning.

The outcome of this intervention was identified through the induction of the themes and the research questions initial intention that is, to better understand learning. Throughout the review of the mentors' grades it became apparent that student teachers are better able to respond to children's individual needs this implied that they understood their learning more clearly. This is further supported with the findings from the proportional gain data in that twenty student teachers have made proportional gains in their pedagogy during this intervention based on a social constructivist understanding of the learning process.

That said, one area that has arisen from the data is subject of grading as a whole. In the discussion around average points score and proportional gain questions about the reliability of grading in measuring student teachers' developing understanding of learning was questioned. Specific examples included the possible over-grading of mature student teachers' initial overall grades and the low overall end grades for the student teachers identifying as having SEND, despite better grades in the individual areas. There was juxtaposition between grading the sum of the parts and marking the whole, and/or vice versa. Here lay the difficulty of trying to quantify the unquantifiable. It would seem from the interpretation of the data around student teachers ECEY71 and CJ2571 that the underpinning skills of using talk for learning embedded in social constructivist pedagogy developed student teachers' understanding of learning and this was evidenced in the grade, rather than the grade being the evidence of understanding of learning in itself. To this end, reviewing the skills of student teachers and feeding back on how to develop these skills, may in reality have more of an impact on developing outstanding teachers, than merely applying a grade to an observed piece of practice.

Chapter 6 – Discussion and implications

6.1 Introduction

This research investigated how children's views about their learning might inform the development of student teachers' practice, and how mentors could support the development of student teachers' practice that engaged with children's views about their learning. The context for this study was a PGCE ITE course during the student teachers' first placement. I was trying to see whether student teachers engaged with understanding children's learning, could scaffold further learning in the children's ZPD using bespoke pedagogical tools. ITE is the most obvious time to develop this practice as then teachers, right from the beginning of their career, may understand children's learning much better (Flutter, 2007). To understand the learning process in this research I adopted a largely social constructivist perspective that acknowledged the active agency of both the children and student teachers in their own learning as it took account of the views of them both (Jones & Straker, 2006). Data collected was both descriptive (what happened?), exploratory (why it happened?) and, to a limited extent quantitative (to measure the progress of the student teachers' practice).

Prior to this research, I had been a PGCE course tutor over a number of years. In this capacity I had seen student teachers teaching without apparently having a clear understanding of why they were planning certain activities. In other words they were teaching without making the connection to the learning needs of the children. Further, having been a classroom teacher, I had found that basing my pedagogy on social constructivist principles had enabled me to engage with children talking about their learning so I developed my practice based on what I had heard. I therefore wished to investigate how student teachers could be supported to develop a similar approach. ITE is focussed, as directed by the Government, on addressing the Teachers' Standards (DfE., 2012) with less emphasis on student teachers developing an understanding of children's learning and associated pedagogy for their practice (as discussed in the literature earlier).

The findings from this project provided evidence in support of understanding children's learning better, so a student teacher is able to demonstrate progress in terms of the Ofsted grading. Moreover, the rhetoric around children's voice is rooted in the notions of giving children a say in decisions which affect them (DCSF & UNICEF, 2009). The findings in this study support children's voice as valuable to children as learners. As the project evolved, during these student

teachers' ITE course, children's voice may have begun to be embedded into these teachers' early practice. The scaffolds (bespoke pedagogical tools) to enabled discussion on the interpersonal plane and reflection on the intrapersonal plane by the participants were usefully used as research tools but importantly enabled the participants to develop their understanding of children's learning.

The purpose of the study was to investigate whether enabling children to talk about learning could/would inform student teachers' understanding of the learning process and thus enable student teachers to scaffold further learning more effectively. This chapter discusses key findings in relation to each group of the participants' perspectives. It opens with a discussion about reciprocal learning as this concept is important and needs to be clarified at the outset. It continues with a discussion of the findings from the perspectives of each of the participants (children, student teachers, mentors), as well as exploring possible implications for ITE and schools more widely. The triangulated evidence helps to support assertions made, thus adding trustworthiness to the interpretation of the study.

6.2 Reciprocal learning

Reciprocal learning relationships were established in the research and it is therefore important to be clear about what is meant by this. Earlier figure 3 attempted to demonstrate how this dynamic concept might work in practice through a two-dimensional diagram. It showed that whilst the MKOs scaffolded the learning of the student teacher through their ZPD, on an interpersonal plane by discussion, feedback, questioning, modelling and so on, so the student teacher reflected on the intrapersonal plane and elaborated and deepened their learning. At the same time the mentor was learning about/from, the student teacher about his/her understanding of children's learning, and so the learning was reciprocal. In addition, the student teacher used bespoke pedagogical tools (as the MKO) as a scaffold for discussion on the interpersonal plane to engage with the children's learning and scaffold the children through their ZPD. At the same time the student teacher was learning about/from the children (in the role of MKOs) as they guided the student teachers' understanding of children's learning through their ZPD, and thus the learning was reciprocal.

Figure 3 is redeveloped below as figure 19, with an added dimension of reciprocal learning between children and their peers. During the research reciprocal learning between children occurred as they shared information during the focus group sessions. The scaffolds used supported the language required to articulate their

understandings on the interpersonal plane. In addition they developed their own understanding of topic they were learning about. In addition, questions have been raised through the interpretation of the data collection about the whether the mentor and student teacher was indeed reciprocal, or whether in fact the relationship was one way (represented by the white arrow in figure 19 below).

Mentor   Student Teacher   Child

Or?   ZPD   ZPD   ZPD

Student Teacher   Child   Child
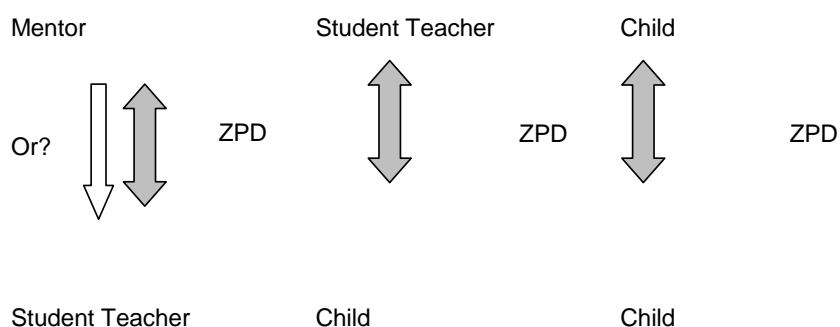
Figure 19 Mentor - student teacher - child dynamics (developed from figure 3)

Figure 19 (above) shows the MKO as being the mentor, student teacher or child depending on the roles they adopted at different stages of the research process. In this research, student teachers learned about learning through listening to views from children whilst at the same time children learned more about particular topic areas through the scaffolding by the student teacher in the lessons. Particular consideration was paid to the children themselves in terms of their competence (understanding/communication), vulnerability (physical, cognitive and emotional) and power (status, institution, role of myself) (Punch, 2009). These aspects were covered through the ethical parameters of the study within the methodology. In addition, children learned about learning through listening to the views of other children, articulated using the scaffolds put in place by the student teacher– interthinking (Littleton & Mercer, 2013); child to teacher and vice versa. There was an assumption also, derived from the reading and expressed in figure 3 that any learning by the student teacher and mentor would also be reciprocal, although the interpretation of the data indicated that this may be less so (represented by the white arrow above).

Eliciting the views, comments and understandings on a personal level from the children and student teachers required that there was an acknowledged duty of care (Burton, Brundrett & Jones, 2008). As I explored the participants'

perspectives, I developed new understanding. It was important to recognise the children's agency in the changes that occurred through the action research activities of the student teacher. In the research I made every effort to ensure that the participants, child or student teacher did not feel intimidated and did not feel that should give the 'right answer' (Teaching and Learning Research Programme, 2004, Macbeath, Frost & Pedder, 2009). The shared meanings of the participants evolved as the study unfolded. It was essential to be sensitive to those findings as they were directly relevant to the setting and the participants (Punch, 2009, Open University, 2001). In working in this way I attempted to understand the student teachers' worlds; exploring their learning and their views around it.

6.4 The children

This was a study of how children's talk improved children's learning and student teachers' understanding of their learning. In order for this type of talking about learning to be successful, children need the language to be able to articulate their thoughts about their learning (Mercer & Sams, 2006, Kozulin *et al.*, 2003). During the focus groups, this was provided by the scaffolds in the form of the sorting card activity (pilot study) and the prompts on the Thinking Fish (pilot study and main study) with the MKO (student teacher) mediating the children's understanding through their ZPD. In doing so evidence of children's thinking about their learning was captured (Smith, 2010). It is clear that rules need to be established within these focus groups rules to ensure inclusivity so that the views from all children were heard (Mercer & Sams, 2006, Flutter, 2007). Therefore student teachers need to understand this.

In this research an analytic framework (table 8) developed from the work of Tharp & Gallimore (1998) was used to analyse the responses from the scaffolded prompts on the bespoke pedagogical tools (sorting activity (in the pilot only) and Thinking Fish (in both the pilot and main studies). The sorting activity in the pilot study appeared to indicate that the children were able to articulate their understanding of their own learning (table 12). The analysis of the data appeared to show that the children were able to change their views on how they were learning depending on the tasks undertaken each day. However, by the last day of the intervention the children were stating that thinking a lot was the most important aspect of their learning. This appeared to demonstrate a developed understanding, by the children, of the need to operate on the intrapersonal plane as part of the act of learning is to think inside one's own head (Kozulin *et al.*,

2003). Further the fact that the children were enabled to articulate the importance of this concept meant that the children engaged with metacognition – learning about how they learn (McGregor, 2007).

I began to see a possible iterative process developing here between the talk for learning and the reflections that the children had undertaken; that is to say that the children's learning moved back and forth between the inter- and intra-personal planes within their ZPDs, rather than it being a sequential step from the interpersonal to the intrapersonal to autonomy. It was the challenge of learning something new that was more important in their learning, as they said it was, *"more interesting...because we were learning new things"*. The children were asking for challenge which was unexpected for children at this age. However this may have only been the case because the means had been provided for them, in the form of the bespoke pedagogical scaffolds, to think about their learning on the intrapersonal plane and then to articulate their understanding on the interpersonal plane. This enabled them to talk to each other and elaborate their thinking thus deepening their thinking about their learning and creating the realisation that challenge is important in their learning. This may have shown that this way of working, enabling children to think and talk about their learning may have a good effect on children understanding their own learning. Another implication may well be that student teachers have understood the importance to children's learning of giving them the tools with which to think about and talk about learning.

The findings across both case studies demonstrated the children's ability to articulate their learning about their own learning needs, when appropriate scaffolding was provided to support their thinking on the intrapersonal plane, meta-thinking (McGregor, 2007). Moreover important issues are highlighted from a social constructivist view of learning. First the children articulated on the interpersonal plane to their MKO, which implied that they had reflected on the intrapersonal plane about what they thought about their learning. The role of the MKO is critical in the process of children talking about their learning (Flutter, 2007). The interpersonal exchanges between the children and the student teacher were how they understood the children's learning (Rudduck & Flutter, 2004, Flutter & Rudduck, 2004) and then were able to mediate further learning through the children's ZPD (Kozulin *et al.*, 2003). Through these discussions the children were thinking aloud (Mercer & Hodgkinson, 2008). The collaborative activity between student teacher and child promoted interthinking (Littleton & Mercer, 2013), as demonstrated by the comments of the children about helping

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the student teacher understand their learning. All this highlights the important notion of thinking aloud in promoting interthinking (Littleton & Mercer, 2013, Mercer & Hodgkinson, 2008). There are potential issues here, as Fisher & Larkin (2008) found in their study, that children can be encouraged to not talk in lessons (discussed further below).

The analysis of the children's feedback appeared to indicate that children can articulate thoughts about their learning as long as it is scaffolded appropriately to provide the appropriate tools for inter and intrapersonal thinking. The implications here are that student teachers need to understand their roles as MKOs, to guide children's learning through their ZPDs so that both they, and the children, can better understand how children learn. However this involves a shift in thinking about how to enable the children as MKOs to provide feedback to the student teacher. A simplistic view could be that this moves away from current ITE practice where the student teacher's MKO is currently the mentor and broadens the scope of the MKO to include the children as expert witnesses to their learning (Flutter, 2007).

6.4.1 Issues related to talking in the classroom

The ongoing tension between student teachers understanding learning and student teachers becoming teachers was evident when student teachers responded to the children's feedback on the interpersonal plane about including talk for learning, between peers, as a practice to aid their learning – interthinking (Littleton & Mercer, 2013). In this instance the student teachers were adopting a strategy for learning which involved collaboration between children in the form of talk. Talk creates noise. However, rather than accepting this as part of the learning, mentors fed back to student teachers about poor behaviour management because the classroom was noisy.

The problem here is that the process of learning is difficult to observe, whereas noise levels in a classroom are easier to notice. There could be several things happening here:

- the mentor may not be observing the real learning taking place, not being able to see beyond the raised noise levels,
- the mentor not be able to see the learning that is taking place because there is nothing recorded on paper,
- the mentor could perceive a noisy classroom as an uncontrolled classroom,

- the mentor might be wanting the children to work in an alternative way, a preferred pedagogy that they would adopt themselves,
- the classroom could indeed be uncontrolled.

The tension here is between the feedback to the student teacher about developing competencies, that is addressing the Teachers' Standards (behaviour management), and the lack of feedback to the student teacher from the mentor on the interpersonal plane about the children's learning through the strategy of talk. Additionally, there may be a potential need for mentors to develop their own understanding of how talk in classrooms enables learning, and how this might be managed, modelled to student teachers and so on. In order to do this, mentors need to revisit their own understanding of social constructivist perspectives of learning and how this is implemented through classroom practice. In doing so the benefits of scaffolding children's thinking on the inter- and intrapersonal planes can be examined in order to better understand how the process of children's learning may be more supported in the classroom. In turn this refocus of mentors' own classroom practice could highlight areas which might enable them to further develop the understanding of student teachers' about the process of children's learning.

6.4.2 The place of children's voice

The rhetoric around children's voice from a UK Government perspective suggests that children are consulted about the important decisions which affect them (DCSF & UNICEF, 2009), although this appears to be mainly in the area of becoming democratic citizens. This is evidenced, for example, from the feedback from the child in this research talking about her school council involvement. Ofsted (2013) presented good practice examples of young people as learners talking about learning in FE and other non-mainstream school settings. However, this does not reflect in examples of good practice for children or school settings. That said, the data demonstrated the importance of student teachers listening to children's views about their learning both from the children's, and the student teachers, point of view. Both groups learned about learning in the process and this made a difference to performance in the classroom.

These findings indicate clearly that talk for learning is an important aspect to understanding learning, for both the teacher and the learner. However, engagement with this strategy may not be compatible with the current

Government agenda. This is because the focus for schools and ITE is outcome, or results, driven. There is lack of focus on processes of understanding learning. This is evident in both the Teachers' Standards and the National Curriculum where the drive is to meet targets and gain subject knowledge. The implications of this would be that there would need to be a change to centrally directed policy for ITE, and schools, in order for children's voice to have a meaningful place in learning in classrooms.

In order for an approach utilising children's voice, such as the one used in this study, to be embedded in classroom practice, the learning culture needs to be appropriate (Halsey *et al.*, 2006). This begins with having clear objectives (Macbeath, Frost & Pedder, 2009). In this study this was in evident with the rules for the focus group, as well as the clear questions that were asked of the children. The shared understanding of the expectations of the talk about learning (Rudduck & Flutter, 2004, Flutter & Rudduck, 2004) was provided by the Thinking Fish scaffold. Through the process undertaken in this project the student teachers reported changes in, the children's esteem (Fielding & Morgan, 2007) and engagement (Teaching and Learning Research Programme, 2004) which resulted in changes to the curriculum (Rudduck & Flutter, 2004) and reported improved relationships with between the student teachers and the children (Macbeath, Frost & Pedder, 2009). This may evidence how this study may have enabled an appropriate environment (Coulby & Coulby, 1995) for children's voice in the classroom.

6.5 The student teacher

The student teachers' role in this research was firstly to plan and teach a sequence of lessons over a week, and then to reflect on the intrapersonal plane about their understanding of children's learning, as well as reflecting upon feedback provided by mentors and children on the interpersonal plane. They recorded this using the scaffolded prompts provided. As with the children, scaffolding the thinking of student teachers is a necessary component if learning is to be progressed (Wood, Bruner & Ross, 1976). In order for reflection to be successful, student teachers needed the language to be able to articulate their thoughts about their learning (Kozulin *et al.*, 2003). This was provided by the scaffold, in the form of the reflective prompts, and in doing so evidence of student teachers' understanding of children's next steps in learning was captured. The

reflections by a student teacher were intended to support them to develop their practice (Bolton, 2010, McGregor, 2007).

The data from both the pilot and main study appeared to show that there were changes in the student teachers' understanding of teaching and learning between the start of the intervention and the end. The most frequent themes identified were: talk for learning, the role of the MKO, scaffolding learning and understanding learners' needs, all of which are strongly associated with social constructivist thinking (Kozulin *et al.*, 2003). These demonstrated how the student teachers in the main study were beginning to understand how to scaffold children's learning from a social constructivist perspective.

Talk for learning

Student teachers appeared to indicate how useful they had found the process of listening to children's talk about their learning because it helped them to understand the children's next steps in learning in the topic more clearly, for example one student teacher said, *"reflection is helped by listening to the feedback"* which is also supported by (Flutter, 2007). This may indicate that the children's feedback using the scaffolded prompts during the focus group discussions supported the student teachers' pedagogical understanding by the children providing feedback on the interpersonal plane, as the MKOs, which enabled the student teacher to reflect on their understanding of children's learning on the intrapersonal plane, and make progress in their ZPD. Further the scaffolded prompts for reflection by the student teacher on the intrapersonal plane may have contributed to the student teacher being able to articulate their understanding of children's learning (McGregor, 2007). In addition the student teachers recognised the value of the talk for learning process to the children. For example one said, *"it seemed that the knowledge and understanding from the lesson was only now completely sinking in through discussing it"* (Alexander *et al.*, 2010, Alexander, 2010) which connects to the views of Alexander (2010, Alexander *et al.*, 2010). The implications of this are that:

- student teachers understood the process of talk for learning,
- talking to peers and an MKO on the interpersonal plane enabled intrapersonal reflection and metacognitive processes in the children thus further enabling progress through the ZPD (Kozulin *et al.*, 2003).
- children also recognised the importance of the interpersonal interactions as the student teacher highlighted how the children identified talk for learning as

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a strategy for how they learn. For example one said, "*children reflected on how they learn – talk partners..."* which is supported by Mercer & Hodgkinson (2008).

- student teachers understand that in order for the children to articulate that they need talk in their learning they first have to have reflected on their intrapersonal plane.

Whilst the social constructivist principles are not explicitly indicated here, they are implied.

Understanding of children's learning

Student teachers reflected on the intrapersonal plane and articulated using the scaffolded prompts for reflection that the process of talking with the children was *"useful in understanding children as learners"* as they have a *"clearer understanding of their strengths"* (Flutter, 2007)*,* implying that student teachers could see the value of children talking about their learning and what it means for their teaching practice (Mercer & Hodgkinson, 2008).

Responding as the MKO and scaffolding learning

From their intrapersonal reflections on how, as a result of listening to the children on the interpersonal plane student teachers stated that they were better able to *"address misconceptions through monitoring"* and *"assess children's understanding to inform planning",* which is supported by (Flutter, 2007)*.* This implies the student teachers' understanding of their role as an MKO in planning for learning and scaffolding of learning for individuals, or as one stated, they could now *"explore flexible approaches to adapt to the needs"* of all children (Kozulin *et al.*, 2003).

One further interesting comment that the student teachers made, was about not expecting children to have useful ideas about their learning and how they learn *("thought the children would be reluctant or unhelpful...")*. This appeared to indicate that the prompts were effective in eliciting information about how student teachers understood children's learning. I reflected on three possible reasons for this:

- whether student teachers saw children as learners,
- whether there was an issue here for ITE (either university-based element or the school-based element) not educating student teachers to see children as learners,
- whether this was as a result of their inexperience as teachers.

This could be because of the lack of experience of the student teachers who therefore did not expect this from the children because they did not understand children's understanding of their own learning. This could mean that time during ITE should be dedicated to helping student teachers to understand children in this way (Rudduck & Fielding, 2006) so that student teachers see the merit of this practice in developing their pedagogy (McIntyre, Pedder & Rudduck, 2005). Further the evidencing of the Teachers' Standards does not encourage student teachers to understand learning in this way. This means that the current model of teacher education, would need to be developed to enable beginning teachers to learn how children learn and how to support the development of it (Winter, 2000, Furlong *et al.*, 2008, Dewey, 1964, Swim, 2007).

It was clear from the pilot study that the student teacher's practice changed during the interventions in this study (Hopkins, 2008, Macbeath, Frost & Pedder, 2009, Flutter, 2007). The student teacher became more informed from the feedback and her own reflections so her actions became more focused (Hackett, 2001). The data in the main study showed that the student teachers reflected upon social constructivist principles, including adapting their pedagogy to the learners' needs, to enhance the curriculum for the children (Macbeath, Frost & Pedder, 2009, Rudduck & Flutter, 2004). This was the student teachers acting as the MKO to mediate the children's learning through their ZPDs. These changes came about as a result of the student teachers receiving feedback on the interpersonal plane from their mentors and the children's focus groups. It could be said that the transformation of the student teachers' practice was as a direct result of these processes (La Boskey, 1993). Interestingly in many of the student teachers' reflections the mentors' impact on their understanding of children's learning is not mentioned. This could perhaps be because the mentors were not challenging student teachers to think about this (Bolton, 2010) because their feedback focussed more closely on developing evidence towards meeting the Teachers' Standards (Winter, 2000). In this instance then it could be said that the alternative voice of the children's reflections about their learning was more useful to the student teachers in their reflections to transform their pedagogy.

An insightful reflection by one student teacher was that they were noticing what the children did not say, as well as what they did. This reflection by that student teacher indicated a level of understanding about children's learning. Whilst in many ways this could be seen as productive as the student teacher was

considering gaps in the children's learning, it could also be limiting as the student teacher might be making assumptions about the children's feedback about their learning and therefore not listening to what was really being said. A further point on which the student teachers reflected was that in providing the feedback the children were engaged in thinking about their own learning and how they learn best. This meta-thinking (Kozulin *et al.*, 2003) about learning in the intrapersonal plane, demonstrated that the children were learning how to learn, and were scaffolded to articulate this on the interpersonal plane. Thinking at this level is powerful because the children are developing a greater understanding of their learning (Mercer, 2008, Mercer & Littleton, 2007) and therefore moving towards autonomy.

There were several points on which I reflected:

- scaffolded feedback about children's learning from both the mentor, where given, and the children enabled the student teachers to reflect on their pedagogy and change their practice as a consequence.
  reciprocal learning took place as the student teachers taught the children learnt, as the children and mentors fed back so the student teacher learnt.
- encouraging children to provide feedback on their learning to the student teachers, enables them to reflect and thus engage with meta-cognition.

These align with a social constructivist view of learning with MKOs mediating the ZPDs of the learners on the interpersonal plane and the subsequent reflections on the intrapersonal plane leading to appropriation and progress towards autonomy.

6.5.1 The development of student teachers' understanding of children's learning

The development of student teachers' understanding of children's learning was not directly measured in the data elicitation and analysis process in this research project. However, intrapersonal reflections noted by the student teachers appeared to indicate that for some, this approach to understanding children's learning was important to them. These reflections appeared to indicate that the student teachers were prepared to embrace this approach which assumes that both children and teachers are interested in talking about learning (Noyes, 2005). It also appeared to indicate that the student teachers were making meaning from the intervention (Boud, Cressey & Docherty, 2006) and that they were prepared to see their practice from the viewpoints of others (McIntyre, 1993). This open-

mindedness to reflect (Dewey, 1964) means that the student teachers were prepared to continue to engage in meta-cognitive practice and learn about learning further (Woolfolk, Hughes & Walkup, 2008). From this it could be concluded that the student teachers' understanding of children's learning was enhanced from undertaking this intervention.

6.5.2 Shifts in power relationships

Earlier in this chapter the reciprocal learning relationship between the participants in this research was discussed. Figure 19, was an attempt to represent this in a two-dimensional diagram. It was assumed that this reciprocal learning relationship also involved the power in the learning relationship moving between participants as each participant took the role of MKO. The issue of power was considered in the review of the literature as well as in the methodology and in the reflections on the methodology. In figure 20 (below) an additional red arrow has been added to demonstrate the assumed power shifts between participants.

Mentor	Student Teacher	Child

Or?

ZPD   ZPD   ZPD

Student Teacher	Child	Child
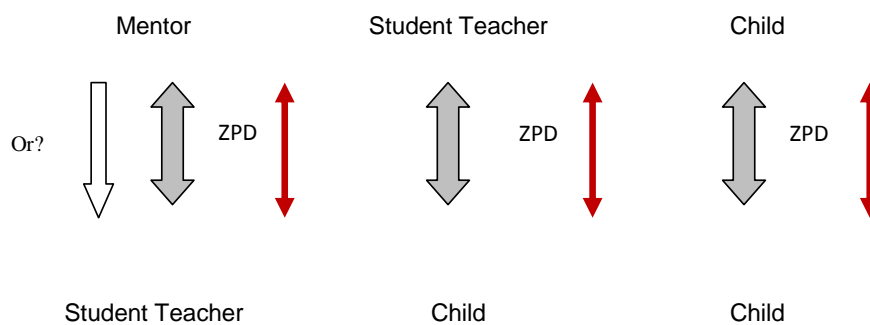
Figure 20 Mentor - student teacher - child dynamics, including power changes (red arrows), developed from figures 3 and 19

Figure 20 (above) shows the MKO as being the mentor, student teacher or child depending on the learning taking place. In this research, student teachers learned about learning through listening to views from children whilst at the same time children learned more about particular topic areas through the scaffolding by the student teacher in the lessons. One might make the argument that the power of who controls what is learned would shift between the participants, depending on who was the MKO. That is to say that the when the children feed back to the student teacher, they may have the power in the learning relationship because they have adopted the role of the MKO, mediating the learning of the student

teacher on the interpersonal plane. The assumption could be furthered in suggesting that over time, as reciprocal learning continues, the power is muted and learning relationships become increasingly equal.

However on reflection, there is a subtle difference in the definitions of empowerment and enablement, although the two words are frequently used synonymously. The difference comes in how the power is devolved. Enablement involves devolving adequate power to complete the task in hand, whereas empowerment involves delegating authority for a task. In this project therefore this can be explained that the children are given the power to provide feedback on their learning in a very focused and specific way through the focus groups' activities. The student teacher retains the power of organising the classroom, maintaining behaviour and setting up the focus group activity. The children therefore have been enabled to have a voice about their learning on the interpersonal plane, rather than empowered through children's voice to take authority of their learning. This is an important distinction to be recognised as the operation of a classroom requires an MKO (the student teacher) to observe and reflect, understand children's learning and scaffold next steps appropriately, if a social constructivist view of learning is to be adopted. This subtle difference is not articulated clearly in the literature. This could be because the projects which espouse empowerment need to show impact due to their funded nature (Noyes, 2005), and the word empower carries, perhaps, a more impactful emphasis.

Whilst the children in the focus groups did not directly state that they felt valued, the student teacher assumed this from the other feedback received about feeling 'useful' by helping, for example, *"able to help others, helped the student teacher understand how we learn, helped learning"*. This was an important aspect to demonstrate that the children's feedback on the interpersonal plane to the student teachers as their MKOs was acted upon (Flutter, 2007) and may have had different consequences if the children had not seen their feedback being acted upon (McIntyre, Pedder & Rudduck, 2005). As valued members of the classroom learning community, the children were enabled by the opportunities provided during this intervention (Watts & Youens, 2007, Flutter & Rudduck, 2004) to feedback about their learning.

As a result of the intervention, reciprocal learning was seen. The student teachers learnt from the children and the children learnt from the student teachers. I believe that this two-way, collaborative approach may have the potential to become increasingly voluntary and equal over time. In this project the

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articulation of thinking on the interpersonal plane was part of a process to connect ideas and understanding about learning (Smith, 2010). This was true for both the children and the student teachers and aligns with the principles of a social constructivist view of learning (Alexander, 2009, Mercer, 2008).

There are two aspects related to this on which I have reflected:

- children and student teachers need to have appropriate language to articulate their reflections and how this intervention has enabled intrapersonal reflections as a result of interpersonal dialogue. The scaffolds, in the form of the Thinking Fish and the semi-structured prompts in the reflective logs enabled this reflection to happen (Wood, Bruner & Ross, 1976) through providing the language required to articulate the thinking (Macbeath, Frost & Pedder, 2009, Alexander, 2009).

- MKOs (student teachers for the children and children for the student teachers) in providing feedback about learning on the interpersonal plane, enabled interthinking, (Littleton & Mercer, 2013) by scaffolding developing understanding about learning (Moon, 2000). At the same time, the same processes were scaffolding the intrapersonal reflections and the developing meta-thinking about learning (Smith, 2010). In doing so the interpersonal and intrapersonal dialogues were engaged together, rather than sequentially as the Tharp & Gallimore (1998) model represents. This could be better represented as 'helix' (Littleton & Mercer, 2013). This is to say rather than accepting a linear, two-dimensional progression between stages of development in the ZPD, there is continual movement to and fro as well as back and forth and up and down, and so on. Therefore what this intervention may have enabled was a transformation in understanding about learning by both the student teachers, and the children, from naive preconceptions to pedagogical thinking (La Boskey, 1993).

6.6 The mentor

The mentors' role in this research was to share their thinking about the student teachers' understanding of children's learning with the student teachers, having observed them teach, using the scaffold provided by the university to enable articulation on the interpersonal plane. It was intended that this dialogic approach would result in interthinking (Littleton & Mercer, 2013) between the mentors and the student teachers and would scaffold the student teacher in progressing their understanding of children's learning through their ZPD.

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Qualitative feedback acknowledged the strengths and areas for development for the student teacher. However, the feedback did not focus on how the student teacher could understand children's learning better. Therefore, the mentors appeared to not be scaffolding the student teachers' learning through their ZPD. This appeared to indicate an approach which was driven towards evidencing the Teachers' Standards. However there are clearly issues around the reliability and validity of the observation tool that was used as discussed below.

Both the average points score and the proportional gain data seemed to indicate that student teachers made most progress in the area of supporting individual needs. The thematic analysis compared to the model by Tharp & Gallimore (1998) of the qualitative data identified fourteen themes. Of the fourteen, only three themes directly related to social constructivist learning theory (MKO, talk for learning, scaffolding). These aspects are fundamental to learning and yet the mentors did not comment on them. However, these three themes were not among the most frequently commented upon areas of student teachers' practice by mentors. Instead these were differentiation and the learning environment. The differentiation aspect could be aligned with the idea of understanding children's learning needs, however feedback in this area centred around the need to 'improve differentiation' rather than how this might be enabled; for example what the next steps in children's learning could be, and what learning activities might be appropriate to address these needs. The learning environment aspect raised interesting tensions between the mentors advising the use of talk for learning but criticising the behaviour management in the classroom as a result of the increased noise level from the talk between peers. As discussed what was not captured was a critical conversation between the student teachers and the mentors about the feedback given. If this dialogic feedback had occurred this may have been useful to see how the mentor, as MKO, was if at all, scaffolding the student teachers understanding about children's learning through their ZPD. Alternatively, this could indicate that mentors have used a behaviourist view to support student teachers' learning, adopting the view that student teachers can be given the appropriate knowledge to teach, rather than facilitating their understanding about children's learning. This is a passive learning apprenticeship where the mentor controls the student teachers' learning.

The interesting point here is that the mentors appear not to be looking to see that these student teachers are using talk for learning. It raised a question about why the mentors were not listening to the children talking during their observations of

the student teacher in practice. If the children were talking about their learning and therefore engaging with their learning, this could be a fundamental measure of the learning taking place, rather than a behaviour management issue of too much noise. If the mentors' role is to support student teachers' developing understanding of children's learning, then perhaps the focus on evidencing Teachers' Standards during the observation means that there is not a focus on children's learning. Also this means that ITE needs to develop mentors to support student teachers developing understanding of children's learning, even though the Teachers' Standards do not focus on the learning process, and despite the fact that this would fall outside the requirements during an Ofsted inspection. This indicated one problem with the Teachers' Standards, namely that they assume that if they are in place in a teacher's practice, children will learn. However this negates the need for children's learning process to be engaged with and understood.

6.6.1 Critique of the observation by mentors

These findings appeared to indicate that the mentor's observation tool itself or the observation process may be driven towards evidencing the Teachers' Standards, rather than a way of recording developing pedagogy around understanding children's learning. However, the qualitative comments did note that the student teachers were reflective and took on board advice which the mentor had given them. For example two student teachers said that they had *"taken on board comments from previous lesson", "reflected and took on suggestions"*. This indicated that the student teachers were reflecting on the intrapersonal plane about the feedback received on the interpersonal plane and adjusting their practice as a teacher as a result (Bolton, 2010, Flutter, 2007). This emphasises the importance of the role of the MKO (mentor) in developing the student teachers' understanding (Kozulin *et al.*, 2003) about children's learning.

If one accepts that the observation process is a reliable, dependable measure of progress, it may be argued that the quantitative grades allocated by the mentors to the student teachers in both the individual areas observed and overall contributed valuable data to this research study. This is because such data seemed to imply that the student teachers have made quantifiable progress in their teaching practice during the time of this intervention. However these grades against the Teachers' Standards do not indicate a developing understanding by the student teacher of the process of children's learning. Further, these results

cannot be more widely generalised for three reasons; first, these case studies are too small, second, it cannot be determined whether it was the intervention itself that enabled the progress to be made by the student teachers, and finally it may be that, the observation tool is insufficiently valid and reliable to be a dependable measure of progress. However, it is worth considering the possible effect of the intervention on the grades attained. The average points score data appeared to indicate that greatest progress was made in the areas of individual needs and talk for learning. The proportional gain data appeared to indicate that most progress was made in the areas of individual needs and resources including other adults, with 38% of the whole sample attaining above the mean proportional gain for the areas of individual needs, talk for learning and engagement. All of these areas relate directly to social constructivist principles – individual learners (children) mediated by MKOs (student teachers) on the interpersonal plane (talk for learning) to progress through their ZPD demonstrating an understanding of children's learning. It could be construed that this intervention had most effect in these areas, and if this is the case, then it could be argued that the intervention had most impact on student teachers' understanding of children's learning through a social constructivist lens.

However, it is difficult to ascertain the degree to which the observation tool is valid and reliable. For example, it is debatable whether every mentor was interpreting the grade boundaries in the same way. Despite the best efforts of the course team to design a tool that provided scaffolded prompts for observing teaching, to train the mentors in using the tool to ensure consistency (Hill *et al.*, 2012), this was not necessarily what was seen in practice. Each observer (mentor) used the tool idiosyncratically (Kerry & Farrow, 1996) and this raised questions about inter-rater reliability (Hill, Charalambous & Kraft, 2012). This is because the statements provided were subject to interpretation, as are the Teachers' Standards themselves (Furlong *et al.*, 2008), and with a variety of mentors using the tool in this study independently, there is no way of ascertaining whether they were all using it in the same way. As a result there is the potential for mentors to assign grades inconsistently, for example in giving student teachers higher or lower grades than perhaps another mentor would.

Other factors may also have influenced observations. It could be that the environment in which the observation took place influenced the observers' grades (Hill, Charalambous & Kraft, 2012, Hill *et al.*, 2012). In the discussion of the findings in the main study it was posited that the mentor may have been

influenced by the increased noise in the environment when the student teacher implemented a talk for learning strategy. Rather than observing the progress in children's learning through the talk for learning, a mentor could have observed that behaviour management was less effective because the environment seemed noisier, or less controlled. In addition it was acknowledged that a mentor may grade the student teacher in comparison to how they are graded as teachers (Kalhoff, 2013). This could mean that some mentors may have placed a ceiling on the grades that were given to student teachers because 'they can't be as good as me', or over-graded the student teacher because 'they are doing well for a trainee'.

Moreover, the grades, by themselves do not give a clear indication of the student teachers' developing understanding about children's learning. This technicist approach towards ITE means that grades are used to determine success or failure (Foucault, 1991) and therefore may lead to the approach of supplying evidence to meet the Teachers' Standards; that is to demonstrate that a set of competencies is met, adopting an apprenticeship model to ITE (Furlong *et al.*, 2000). This model encourages the emulation of other teachers (Surman *et al.*, 2011) which is a narrow view of how to learn to be a teacher. Therefore the mentor may encourage in their feedback the student teacher to adopt practice in the same way that they do and this may create a viscous cycle of malpractice. In addition, it may mean that the student teacher only understands one way of practising in the classroom, rather than adopting underpinning pedagogy which support the process of how children learn. Further it has been acknowledged that teaching is complex (Moore, 2007), and in pushing the complexities into quantifiable grades, the quality is displaced (Maguire, 1991). This raised a further issue as the current requirements of ITE state that providers must be able to provide accurate grading of what level their trainees are at any given time (also reflected in the requirements for schools). This could be seen as a direct consequence of the inspection and compliance regime (Furlong *et al.*, 2000).

Mentoring is a multifaceted role, as discussed earlier. In this model of mentoring, the mentor is expected to assess the student teacher as well as guide them to improve their teaching practice and understanding of children's learning. If a mentor assesses and grades a student teacher (Kerry & Farrow, 1996) as well acting as their MKO mediating their progress through their ZPD, there may well have been a conflict of interests (Jones & Straker, 2006), although it would be hoped that this would not be the case from experienced teaching professionals.

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The assessor makes decisions about the student teachers' levels of attainment and allocates a grade accordingly. The MKO adopts a different approach which includes coaching and facilitating learning through the student teachers' ZPD. The difficulty therefore lies in the switch that the mentor must make if the two aspects of the role are to work in tandem rather than opposition.

If a social constructivist view of learning is assumed, a mentor is the MKO to the student teacher, mediating their understanding of children's learning through their ZPD until they become autonomous. One aspect of being an MKO as a mentor is modelling strategies that the student teacher can adopt in their practice. Another part of this MKO role is to develop student teachers' understanding of children's learning. It could therefore be expected that the mentor models social constructivist practice to the student teacher by providing feedback to them on the interpersonal plane. Also that they would discuss the principles of social constructivism and therefore how children learn, with the student teacher as part of the content of the feedback to the student teacher on the interpersonal plane. However, providing feedback from mentor to student teacher could be through a transmission of knowledge approach, adopting a behaviourist view to learning. This would indicate that the mentors provided less feedback on the interpersonal plane to the student teachers about how children learn, than other aspects such as teaching practices and strategies. This could be because these other aspects were more observable (Hill *et al.*, 2012) or reflected the mentors' own lens on the situation and/or their predisposition towards collecting evidence of the Teachers' Standards, and so on (as discussed above).

On reflection, another issue that may have influenced the content of mentors' feedback, might be their own lack of confidence or competence in understanding children's learning from a social constructivist perspective, and thus, with how to scaffold a student teachers' reflections. There was an assumption that mentors, because they are experienced professional teachers, would understand the principles of social constructivism as a view of learning, know how to and be able to guide student teachers to develop their understanding of learning from this perspective, as well as to understand the role of, and be able to act as, an MKO to the student teachers. Therefore there may be a need for ITE to support mentors to become fully conversant with the social constructivist principles of learning, in addition to continuing to incorporate it into their programmes for student teachers.

Qualitative feedback from the mentors as the MKO to the student teachers on the interpersonal plane was intended to increase their understanding of teaching and learning (Pryor & Torrance, 2000, Penlington, 2008). Mentors as MKOs, in mediating student teachers' ZPDs, were intended to enable the student teachers' thinking guiding them on their inter- and intra-personal planes towards autonomy (Eun, 2008). This collaborative cooperation between mentor and student teacher was also intended to enable interthinking (Littleton & Mercer, 2013) and interunderstanding (McGregor, 2007). It seems that these opportunities were missed. However, what was not captured in this data set is the possible oral feedback provided to the student teacher by the mentor which would supplement this written feedback. Thinking aloud (Mercer & Hodgkinson, 2008), a dialogic approach (Pitfield & Morrison, 2009), may enable student teachers to mediate their ZPD with the scaffold of the mentor as the MKO.

Reflection on the intrapersonal plane is required to interrogate and deepen understanding of one's own practice (Hackett, 2001, Moore, 2007) and can lead to transformation (La Boskey, 1993). From a social constructivist perspective this transformation would be the move through the ZPD on the intrapersonal plane to attain autonomy. The mentors' role as MKO is also pivotal to the student teachers' developing reflective capabilities. In the same way that mentors are important in developing the understanding of student teachers about children's learning on the interpersonal plane, they are equally as useful in scaffolding the student teachers' reflective capabilities on the inter- and intrapersonal planes. The data appeared to indicate that mentors acknowledged that student teachers were being reflective by stating that advice given was acted upon. This demonstrated that the MKOs had scaffolded the thinking of the student teachers, through the discussions on the interpersonal plane, and the reflections of the student teachers on the intrapersonal plane as the student teachers had reflected and change their practice accordingly. Again what was not captured in this data set was the possible oral feedback provided to the student teacher by the mentor which would supplement this written feedback and may have indicated this more clearly.

6.6.2 The measuring of student teachers' understanding of children's learning

If assessment is considered as a result of the inter-play between student teacher and mentor then it could be considered to be socially constructed and situated (Pryor & Torrance, 2000, Kalhoff, 2013). In taking account of what the student teacher brings, what the mentor brings, the incident and the future direction,

assessment can be seen as dynamic as opposed to static as with allocating a grade. In this approach towards assessment, Pryor and Torrance (2000) point out that not only is context important but also language. It is the dialogue between student teacher and mentor in ITE that enables increased access to a framework of understanding about learning and teaching. Penlington (2008) labels this dialogue as 'practical reasoning'. Additionally, a Vygotskian view of learning and teaching explains that it is the dialogue which a learner has on both the inter- and intrapersonal planes that enables continuing professional development through using the tool of language to scaffolding reflection.

This notion leads to a number of questions: what happens if grades are dispensed with entirely? what would be the measure? how could it be recorded? rewarded? where would be the rigour? One suggestion is that formative feedback replaces grades. Lying at the heart of this alternative type of assessment could be shared assessment. This involves fostering an environment of learning and developing meta-cognitive knowledge for future professional development (Lopez-Pastor *et al*., 2012). In this form of assessment, the mentor acts as a guide to the student on how to self assess/evaluate the student's own professional development as well as the knowledge that is required. Over time, with scaffolded support, the student teacher's own assessment of their performance may become increasingly more reliable (Lopez-Pastor *et al*., 2012) as the critical reflection on their practice is further developed. This sits comfortably with a social constructivist view of learning, in that the MKO is the mentor facilitating the student teacher through ZPD towards autonomy. This view of assessment not only embeds critical thinking into the curriculum but also provides the opportunity for the student teacher to broaden their experience of pedagogy, thus empowering them for the future (McClam & Sevier, 2010) and placing assessment in a position which supports student teachers to learn to be successful as opposed to achieving grades as an end result (Kohn, 1999). The argument rests with the notion of a student teacher's accountability versus their responsibility to the profession, self and learners. Kohn (1999: 95) settles this succinctly, *"telling teachers exactly what to do and holding them 'accountable' for results does not reflect a commitment to excellence"* but rather indicates a top down model of control.

The mentors, in this study, were all trained to use the observation form and yet the intended feedback by the mentors to scaffold the student teachers' understanding about children's learning was rarely included. This raised

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questions about inter-rater reliability (discussed earlier) between different mentors using the format in different contexts. Further there was the question about the validity of the grading process in terms of what the grades mean and whether the mentors worked to the same criteria. Moreover I raised questions earlier about what happens if observation grading or observations themselves were removed, how the ITE provider could then be sure of the student teachers' progress through their ZPD in understanding children's learning. The removing of the grading could change a mentor's role from assessor to MKO, which aligns more closely with the notion of mediating a student teacher through their ZPD. Evidence of progress could then be captured in other ways (discussed above), for example, the mentor scaffolding reflections with the student teacher to gradually become more autonomous (Lopez-Pastor *et al.*, 2012). Alternatively a tool, such as table 28 (discussed later) could be utilised to capture observable teaching and learning from a social constructivist perspective.

6.6.3 The importance of the MKO

In identifying that student teachers are learning to help children learn, I reflected on how this may be facilitated. According to the social constructivist view of learning to which I have subscribed, the role of an MKO is an important aspect in how student teachers progress through their ZPD to become autonomous (Eun, 2008, Mahn, 1999). From a constructivist view of ITE the dialogue on the interpersonal plane is central to the student teachers' learning (Bleach, 1999). Perhaps the obvious choice for the MKO therefore was a more knowledgeable teacher, in this case, the student teachers' mentors. It was evident from the data that the mentors provided feedback to the student teacher in the form of lesson observations. However what appeared to be lacking was a critical discourse between mentors and student teachers (Gibbs & Costley, 2006) which may have further enabled the student teachers' thinking on the interpersonal plane and reflections on the intrapersonal plane. As discussed, this may have been an issue with the methodology or the focus of the observations generated by the tool used. The consequence however was that mentors did not appear to scaffold the student teachers' learning through their ZPD (Cochran-Smith & Paris, 1995) as effectively as they may have been able to do. This echoed the work of McIntyre & Hagger (1992 cited in Williams *et al.*, 1997: 412-413) that mentoring support falls into three categories:

- zero – very general professional expertise,
- minimal – practical support,
- developed – recognises the complexity of the learning process and gets involved, for example engaging in collaborative thinking.

The mentors in this project appeared to be operating at the 'minimal' level, offering practical support in the feedback offered to the student teachers. Clearly the remit for mentoring student teachers needs to be driven towards the 'developed stage' if student teachers are to understand children's learning. This requires mentors to be able to understand not only how children learn, but also how student teachers learn, perhaps through social constructivist perspectives.

An alternative MKO (Zwozdiak-Myers, 2012) was incorporated into the research in the form of the children as expert witnesses (Flutter, 2007) to their learning. In using children's feedback the student teachers began to understand how children learn (Flutter, 2007, Rudduck & Flutter, 2004, Flutter & Rudduck, 2004). This led to the student teachers making changes to their practice which improved learning (Macbeath, Frost & Pedder, 2009, Shallcross *et al.*, 2007); thus learning became truly child centred (Bragg, 2007). There were potential concerns raised about the possible shift in power that this would cause as the children were asked about their learning (McIntyre, Pedder & Rudduck, 2005, Whitty & Wisby, 2007, Shallcross *et al.*, 2007). Although these proved to be unfounded, on reflection it was useful to be mindful of this in the methodology and the consideration of the findings to ensure trustworthiness of interpretation (see also discussion in 6.5.2).

6.7 Reflections and implications drawn from the discussion

6.7.1 The position of ITE or ITT

A tension arose for me during the timeframe of this research around the difference between *Initial Teacher Education - IT E or Initial Teacher Training - IT T.* This difference was highlighted in the literature earlier and was the reason why I, very specifically, have referred to the PGCE students in this project as student teachers rather than trainee teachers. The difference is subtle. In my opinion, the terms education and student teacher refer to those who are learning to understand learning with children in classrooms, whereas training and trainee implies a competency-based model for a PGCE course and refers to those who are becoming teachers. As the ontology and epistemology of the research are

routed in constructivist principles, as is the lens through which I view teaching and learning in a classroom, the latter definition of teacher training is very frustrating to me in terms of how beginning teachers might learn to understand children's learning. The evidence for this was supported in the research data.

Student teachers are intended to be learning, about learning however much of the focus of their practice is linked to demonstrating competencies in the form of the Teachers' Standards. This was evidenced in the research data, in particular from the mentors' observations. Whilst the observation tool does not explicitly mention these competencies, it was developed over time by the course team and embedded the Teachers' Standards (DfE., 2012) and requirements for ITT (Ofsted, 2013) as interpreted by the course team. In addition the design of the observation proforma provided quantitative grading in line with expectations set by Ofsted (2013); and qualitative comments, intended to provide feedback to improve the student teachers' understanding of teaching and learning. The grades themselves are an indicator that a level of competency must be met. The other research tools however, elicited qualitative data which did not call for grades nor were they criterion based. The tools such as the Thinking Fish provided scaffolded prompts for reflections and discussion about the understanding of learning. This style was more open-ended and may have provided for a broader range of responses. Additionally the other scaffolds were designed specifically to enable the articulation of thinking on the interpersonal plane whereas the observation was completed by the mentor whilst watching the student teacher in practice, thus lacking a collaborative perspective. However, the feedback forms were also intended to scaffold feedback from the mentors to the student teachers on the interpersonal plane. The data evidenced that the student teachers were finding the feedback useful from the children as it helped them to understand the children's learning more clearly, whereas this was not evidenced from the mentors' feedback to the student teacher. This indicated to me that the approach taken with bespoke pedagogical tools, other than the observation tool, may be more effective in enabling a student teacher's understanding about children's learning.

This approach to student teachers' understanding about children's learning could be a practical agenda for change in ITE which engages both student teachers and children (Fielding & Morgan, 2007). It is evident that mentor education and development would be required (Alexander *et al.*, 2010, McIntyre, 1993, McIntyre, Pedder & Rudduck, 2005, Macbeath, Frost & Pedder, 2009, Flutter, 2007). The

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children's conceptions about learning add an additional layer of insight (McCallum, Hargreaves & Gipps, 2000) which further support the developing understanding of learning by both the student teacher and the children and so it could be useful to embed this in ITE (Flutter, 2007, Watts & Youens, 2007, Bragg, 2007). The problem here is that the current curriculum in ITE is guided by the Teacher's Standards (DfE, 2012), the statutory guidance for ITE providers (NCTL, 2014) and the Ofsted (2014) framework for inspections of ITE (as discussed in the literature review). Whilst the approach taken in this project could be seen to dovetail with some of these directives (see table 28), there would need to be change in the way the ITE was constructed to make provision for scaffolding student teachers to understand children's learning, and time for critical scaffolded reflection on practice by student teachers, mentors and the children themselves.

One problem here is that children's learning does not have a large part in either the curriculum for ITE in the form of the Teacher's Standards, or in the National Curriculum for schools themselves. As such currently other priorities would take precedence as they would be perceived as more important. This is because it is these other aspects which Ofsted inspect closely and use to measure progress and performance as such they become, understandably, key foci. Therefore if the process is to be implemented more widely the view that understanding children's learning is important for the children would need to be adopted. A further problem is that student teachers were judged on their performance against the grades, demarcated on the observation proformas, as specified by Ofsted (2013). Indeed it was not just the student teachers who are judged in this way; the ITE provider (for example, through employability rates, number of student teachers graded good and outstanding and so on) and the placement school (through children's attainment and so on) are all subject to this same approach. Yet, the evidence in this project suggests that perhaps this is not the most effective way to enable student teachers' understanding of children's learning and improve their pedagogic practice. This is because in attaining the Teachers' Standards, understanding of the process of learning is not necessarily developed. In my roles as a researcher and as a teacher educator, I have found the switch between thinking about learning and the practicalities of teacher education and grading, very difficult at times.

6.7.2 Qualifying to help children learn

On reflection it became clear to me that ITE should be about *"qualifying to help people learn"* (Rogoff, Goodman-Turkanis & Bartlett, 2001:177, Parr, 2005/6) rather than qualifying to teach. The data appeared to indicate that student teachers were provided with the opportunity in this research to explore and develop their understanding of how children learn which moved them away from the evidencing of Standards for teaching (Hopkins, 1997). In doing so the value of understanding children's learning became apparent to them and they were able to make changes to their practice as a result, thus further facilitating learning. ITE therefore in this instance has scaffolded student teachers' misconceptions about learning and facilitated the change required for their development (Wyse *et al.*, 2013). Moreover, in engaging in this intervention the student teachers considered the pedagogy required for the learning of the children and made critical choices (Harnett & Carr, 1995, Surman *et al.*, 2011, Swim, 2007) about what was appropriate. These choices engaged the student teachers in critical thinking about their understanding of children's learning which were made as a result of the student teachers' reflections on the intrapersonal plane (Nixon *et al.*, 2006, Lunenberg & Korhagen, 2007, Loughran & Berry, 2005). As a consequence the student teachers' made changes to their teaching practice as a result.

The problem here is that the current model of ITE, in the form of the Teachers' Standards (DfE., 2012) does not make sufficient reference to student teachers understanding the process of children's learning and student teachers reflecting on their practice. Further, practices around scaffolding language, to enable articulation and capturing understanding about children's learning from the student teachers' and the children's perspectives would need to be embedded in ITE (Mercer & Sams, 2006, Flutter, 2007). It is important to include these in ITE as this models good practice from the start of a teacher's career. Opportunities for scaffolded reflection about learning would need to focus on learning particularly in the case of children's voice, to ensure that practice is not tokenistic (Fielding & Morgan, 2007).

Table 28 (below) demonstrates how the standards might be met when adopting the approach to teaching and learning that is taken in this research. It shows the characteristics of social constructivist pedagogy and how this may be mapped to the Teachers' Standards. Therefore, it is possible, that with time and open-mindedness, this approach could be effectual in enabling student teachers to

meet the Teachers' Standards and better understand the process of children's learning as well.

Table 28 Aspects of Teachers' Standards (DfE. 2012) mapped to key indicators of a social constructivist view of learning incorporating aspects from McGregor (2007: 55)

Indicators of understanding of children's process of learning from a social constructivist perspective	Teachers' Standards (DfE, 2012)
Establishes a mutually supportive learning environment	1
Plans opportunities as the MKO for children to talk about what they are learning	2
Plans opportunities as the MKO for children to address their next steps in learning	2, 5, 6
Challenges children's thinking as the MKO to enable progress through the ZPD	1
Scaffolds children's learning to enable progress through the ZPD	4
Mediates children's thinking through collaboration on the interpersonal plane with more knowledgeable others (peers/adults)	8
Mediation is responsive to the needs of each child	5
Encourages peers to challenge each other as MKOs to one another to mediate each others' ZPD	4
Provides opportunities for children to talk on the interpersonal plane about how they are learning	2
Listens to on the interpersonal plane, analyses on the intrapersonal plane and responds to children on the interpersonal plane as the MKO to enable further progress through the ZPD	6
Scaffolds children to reflect on their learning (autonomously on the intrapersonal plane, with peers and adults as MKOs on the interpersonal plane)	2

If a teacher has an embedded pedagogy in their practice he/she will respond to the children's needs in learning. In this model each standard is taken holistically in order for the mapping to the pedagogy to be effective. One of the Teachers' Standards is not included here and that is number three which is about the subject knowledge of the teacher. This means that rather than the teacher having a specified bank of knowledge to teach, they would develop their understanding

sufficiently in order to be able to teach the children from their position in their ZPD. A teacher's subject knowledge could be measured separately from the observation through an auditing system should this practice be adopted. Further part two of the Teachers' Standards which is about professional conduct is not explicitly included here, but is implied through the nature of the pedagogical practice that is specified. That is to say that a teacher who adopts this pedagogy should be considered a professional in the field of teaching and learning.

The implication of this could be that an alternative approach to observation and measuring against the Teachers' Standards could be adopted in ITE. The focus of ITE would become understanding the process of children's learning. Evidence of good practice could still be collated against each of the Teachers' Standards if the Government required it. However, what the teaching profession could then be assured of was practitioners entering the profession with a solid understanding of how children learn as a basis for decision making about learning opportunities in the classroom.

6.7.3 Teacher educators

Through the process of this research, one aspect on which I have reflected is my own understanding of teaching and learning, the pedagogy that I adopt and how I learn. In the next chapter I have attempted to represent the process of the learning in this project visually, as I see it. As a teacher I am always learning from the practice I see in others' classrooms, reading and so on but the research process here has enabled me to think critically and deeply about my student teachers' learning. The act of interrogating the understanding of student teachers about learning, and listening to their understandings of children's learning, has caused me to reflect on the usefulness of undertaking this research from a teacher educator perspective. In the process my social constructivist pedagogy has been reaffirmed to me.

The problem here is that an undertaking of this nature takes time, as well as being emotionally and mentally consuming. These are all aspects that teacher educators offer in bounds to their practice already, and consequently have little more to give. That said, with support and scaled-down opportunities, into scaffolded manageable chunks, interthinking together about practice might be as useful to others as it has been to me.

6.8 Developments in schools

With the formalisation and redirection of the academies programme (DfE., 2010) and the inclusion of free schools and so on in 2010 by the Government, there was new freedom with staffing. One such freedom was the ability of governing bodies to employ unqualified teachers, should they so choose. Whilst this shift may appear to be enabling in terms of schools obtaining much needed subject expertise for example, it does mean that some teachers would not have met the Teachers' Standards, and much less have an understanding of appropriate underpinning pedagogy to support children's learning. According to the data, the student teachers in this project have found aspects of their practice challenging and they were being educated.

With this in mind there are two potential problems here: first, the unqualified teachers may not understand how children learn and, second, that they may not have developed the skills to manage children's learning in practice. On this basis, it is important that: there is a supply of qualified teachers who understand children's learning in schools; that practices associated with developing children's learning and their understanding of learning (such as this) are embedded in ITE; and that these practices (such as the one in this project) are embedded in schools as models of good practice for those who have yet to understand children's learning.

Further, schools operate in a number of different contexts for a range of socio-economic and demographic reasons. As such each child in each classroom is different. Their socio-cultural background offers them perspectives about their learning which may also therefore be unique. The feedback from the mentors shows that student teachers found differentiation challenging as they prioritised this most frequently in their feedback to student teachers. The criteria for ITE (NCTL, 2014) stipulate that student teachers should experience a minimum of two differing settings during their education. Presumably the rationale for this is to sensitise student teachers for the variety of school contexts in which it is possible for them to work once qualified. Therefore for student teachers to learn to teach children from a range of backgrounds, they require effective strategies of getting to know what children understand about their learning when they are on placements in schools. One way of addressing this would be for student teachers to develop a culturally responsive pedagogy of which the Thinking Fish could be a part.

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6.8.1 Culturally responsive pedagogy

Cultural diversity in classrooms in the UK currently is increasing. Of the 4.3 million state-funded primary school children in the UK, nearly a third (twenty eight point five percent) are of minority ethnic origin (DfE., 2013). The UK Government also acknowledges gaps in achievement for different groups of children (DfE., 2011). One way of addressing and improving the learning of these children may be to implement interventions, and utilise resources, which recognise cultural heritage: culturally responsive teaching (Gay, 2010).

Culture defines one's social values, views, beliefs and so on, which provide order and meaning to life and determine how one thinks and behaves. It is made up from race, gender, class, location of residence, English as a first language or not, native or immigrant backgrounds (Gay, 2010). It therefore makes sense that culture is considered in the teaching and learning process. Further, if one accepts that learning is socially constructed the people within the learning environment will influence how the learning occurs. However, teachers, children and schools all have their own cultural heritage and this means that there may be a lack of synchronicity between them (Gay, 2010). When teachers understand what may interfere and/or enhance children's performance, they are much more likely to know how to intervene appropriately to scaffold learning.

One way of exploring possible cultural frames which may influence learning is to discuss learning with the children. From a social constructivist perspective, language is the tool which mediates thought (Vygotsky, 1986). However, what one talks about and how one talks about it is also influenced by culture. This could be because the child does not speak English or it could be that the child's culture means addressing a teacher in a particular way. Consequently if a child is unable to communicate in school their abilities may remain hidden (Gay, 2010). As such shared communicative frames are required which define the language to be used and how to use it (Gay, 2010). These frames scaffold the children's ability to talk about their learning thus enabling teachers to fully access, facilitate and assess children's learning (Gay, 2010). One such scaffold that could be helpful is the Thinking Fish used in this research.

To an extent an approach such as this may mean confronting traditional conventions for classroom practice. Teachers would need to hold the belief that all children can do something well and adopt a curriculum and pedagogy which responds to the needs of the children (taking account of cultural heritage) (Gay,

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2010). This means that learning should be seen as a process rather than an outcome and thus achievements are contextualised appropriately for each child. These changes would need to be incremental and begin in ITE and continue with CPD (Gay, 2010) for teachers to learn about cultural characteristics, pedagogical approaches (such as the Thinking Fish) and embedding them deliberately in all subjects, at all ages in order to meet the needs of all children's learning.

6.9 Summary

This chapter considered that:

- the children, when scaffolded by an MKO, orated their learning needs;

- by enabling children to be listened to and their views incorporated into the planning of their learning, they had some ownership of the learning process;

- the student teachers' practice was developed through increased understanding of how children learn and opportunities to explore their pedagogy. The student teachers were scaffolded by their MKOs. As a result, the student teachers developed as more reflective practitioners as well as in their role as MKOs in children's learning;

- mentors require development in terms of what student teachers need to understand about working with children in this way. This would mean that they could offer student teachers experiences in schools that would enable them to plan learning experiences. It would also mean that they could better scaffold reflection with student teachers, as their MKOs, to enable them to understand the children with whom they are working;

- there is a need for student teachers to understand children's learning in order to meet the Teachers' Standards and how collecting evidence to meet prescribed levels of competency in certain areas relates to this;

- there is need to consider how student teachers' practice is moderated against the Teachers' Standards;

- there needs to be an openmindness of professionals working with children in schools, from student teachers to Ofsted, to hear children talking about their learning and to accept them as expert witnesses to classroom practice;

- this may require a possible change in thinking about the way that student teachers learn to teach from a UK Government perspective which enables student teachers to better understand children's learning from a social constructivist perspective;

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- the issue of taking children's perspectives seriously provides a rationale for arguing that ITE should include a focus on culturally responsive pedagogy;

Chapter 7 – Reflections and conclusions

This chapter first articulates the learning in this project, as I see it, and goes on to consider the strengths and limitations of the research approach, methods adopted, and discuss potential improvements and research developments for the future. Finally the contribution that this research project has made to the body of knowledge in this field is presented.

7.1 Articulating the learning in this project

In discussing empowering discourse, Fairclough (2001) explained that the learner reflects on an experience, the teacher then systemises the experience by showing them how to express their reflections so further reflection happens which leads to changes in understanding. This is discourse which, as Fairclough (2001:200) states, is 'empowering'. I read this work, early on in my research, but it has been interesting for me to come back to it as I reach the end of this project for two reasons: to see how this process aligns with my thinking about children's learning and student teachers' learning in the classroom, and second, how, on reflection, this aligns with how, and what, I have learnt in undertaking this research project. In reflecting on this I have developed.

A visual representation of my reflections on my thinking about learning which has occurred during the project can be seen in figure 21 (below). It shows learners at the start reflecting on the intrapersonal plane, then talking with MKOs who scaffolds the feedback through the dialogue and visual representations on the interpersonal plane so that further reflection can take place on the intrapersonal plane to enable understanding to change (progress through the ZPD) and ultimately to change how the learners think and act in the future.
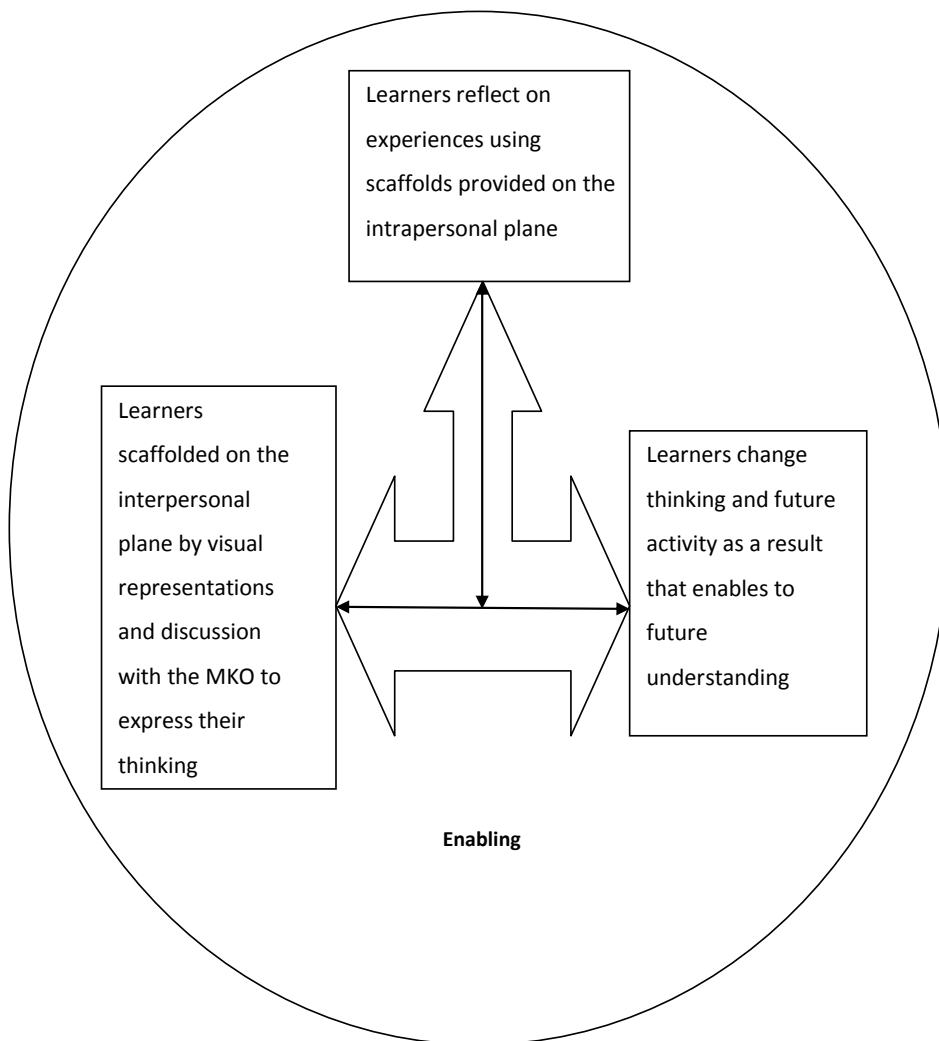
Figure 21 Visual representation of learning in this project

The learners in the figure could be the student teacher, the children or the researcher, me. The double-headed arrows represent the fluidity of movement in the learner's thinking between then interpersonal plane, the intrapersonal plane and their changes to thinking, understanding and/or activity. On both the interpersonal and intrapersonal plane scaffolds were provided in the form of visual representations (for example, the Thinking Fish), prompts or an MKO (a peer or more experienced adult) (Kozulin *et al.*, 2003). This way of thinking about learning moves away from the model by Tharp & Gallimore (1998) with which I started and closer to the notion of the 'helix' representing interthinking as described by

Littleton & Mercer (2013). The enabling aspect represents the fact that the process itself enables understanding of learning and also in undertaking the process the learners are enabled to think about learning. From my perspective as a researcher, the social constructivist principles which I had come to understand from both theory and practice, became embedded through the project. My ontological and epistemological position is largely underpinned by principles of constructivism, both in research and teaching practice terms. Further the figure represents the way that I have operated in this project – the use of visual representations, the availability in the form of MKO (supervisor and peers) and that I have been enabled to think about my understanding of learning.

These reflections are important to set out as my conclusions are based in the thinking about learning that I have done through this process. This chapter brings together the evidence collated from the data and the literature. It answers the research questions and draws out the implications for the future, particularly for ITE. As these case studies are of a very small sample it is not possible to make generalisations from the findings, but the findings may be useful to others in a similar position. Further this chapter considers improvements to the way the study was conducted and possible developments in the research as a way forward.

7.2 Strengths and limitations of the methodology

7.2.1 Reflections on the approach

The research outcomes in these two case studies were an attempt to provide warranted assertions about pupils' experiences of learning in the classroom and ways in which an understanding of this can help student teachers to develop their understanding of children's learning. This strong approach, led me to examine phenomena of different kinds, both qualitative and quantitative to fit together insights that reflect my understanding of the complex world of the classroom (Burke Johnson & Onwuegbuzie, 2004). This style of research called for a range of bespoke pedagogical tools to be used (Burton, Brundrett & Jones, 2008) to understand learning from a social constructivist perspective. Student teachers planned, taught and reflected upon lessons taught and the mentors and children provided feedback using these tools. These tools provided scaffolds for the participants, a further strength of this approach.

Predominantly qualitative data were utilised although some quantitative were collected. The qualitative methodology supported interpretation of what this might mean in this study. Working in these naturalistic settings allowed me to capture

data from the inside (Punch, 2009) as I have an interest in understanding the perspectives of the children and students teachers involved in the project (Open University, 2001). As discussed in the methodology, quantitative data is predominantly associated with a realist approach and as such could be considered as being in opposition to the predominantly interpretivist approach adopted. On reflection this was probably due to my past experiences of research which linked more closely with a positivist approach and may have influenced my initial thinking about this research. However case studies can contain both types of data (Kumar, 2011) and was useful in increasing the trustworthiness of the data analysis (Lichtman, 2006).

Additionally, in this study I chose to investigate the experiences of particular groups that are highlighted by Ofsted (2009) as being particularly vulnerable. It is clear from the findings that there is little difference between the groups in this dataset. In making a special point of highlighting the outcomes for these particular groups it may appear that I have rather mixed the approach into a quantitative piece of research and I realise that this part of the thesis might be interpreted as cause and effect; that is, the effect on the intervention on these particular students. This was not intentional. What I was intending to do was to see whether using this particular approach might in anyway help to address some of the issues facing the profession, for example retention, by enabling student teachers to understand children's learning more clearly and therefore adapt pedagogy accordingly. I have to conclude that this is one way in which studies of the experience of student teachers might be constrained by the external requirements placed upon their education.

Further, on reflection, I set out to interpret the world of the classroom through a social constructivist lens, but initially without fully appreciating the implications, I adopted realist methods and that in the process of the work I understood that this needed to be changed and as such my approach became reflexive. As my thinking and understanding about the research process changed, as well as my thinking and understanding about what was happening in classrooms, so my approach to eliciting and interpreting the data changed, and I adopted a more reflexive position. Whilst this was a strength as it enabled my interpretations, I found this very hard to grapple with as reflexivity is about constantly reflecting on (Etherington, 2004) thinking. Therefore there was not a firm process to follow, but rather the data guided me to think in different and new ways. One realisation that I had was that in adopting a constructivist approach I was developing

understandings as time went on and as such was immersed in the data and unable to be objective (Mills, Bonner & Francis, 2006). This led me to question issues of validity and rigour in the research. However, I deliberately chose a range of methods in order to maximise trustworthiness in the interpretation of the data (Neuman, 2013). The difficulties for me with the reflexive approach and the necessary lack of obvious structures were further compounded by the complexity of the research design. Although, on reflection I now understand that in not having fixed directions to pursue I was very open to my understanding be further developed from the feedback on the interpersonal plane and my reflections on the intrapersonal plane. One strategy that helped me was representing aspects of the approaches taken in visual form, for example figure 10 and table 1, which were useful to clarify aspects clearly. These scaffolded reflections, enabled me to make connections on the intrapersonal plane. Further it is interesting to note that this approach reflects my approach to the research design, that is, that children in the focus group were given a visual structure in the form of the Thinking Fish to scaffold their thinking and discussion about their understanding of learning.

One constant on which I reflected as the research unfolded were the issues of power in the classroom, that is, the assumed potential power changes between the participants (mentors and student teachers, student teachers and children) as discussed earlier. However, as the research developed it became clear to me that the participants were enabled through their role as MKO to articulate their understanding of learning, rather than empowered to control the learning themselves. The learning relationship was reciprocal between the student teachers and the children as the student teachers and children interchanged the role of the MKO during the interventions in the research, adding an additional layer of enablement. Further as already discussed, this reciprocal relationship was not evident between the mentor and student teacher where the discussions may have adopted a transmission approach. However, the dialogue between peers (children to children) echoed the reciprocal approach to learning that was evidenced between student teacher and children. The dialogue between the participants meant that the relationships of enablement were negotiated in every conversation that occurred (Riley, Schouten & Cahill, 2003) and thus potential barriers were managed (Das, 2010); a strength of this approach. This could be because both the student teacher and children considered themselves to be learning and therefore were open to the reciprocal relationship, whereas perhaps both the mentor and student teacher viewed the mentor as learned and therefore

adopted positions which meant that learning could only be one way (figure 20 tried to represent this visually).

7.2.2 Reflections on methods adopted

During the process of the research, I reflected upon a number of recurring themes which I had to resolve. They centred around the methods adopted for the research and included how student teachers' progress is measured, how the data was collected, how effective observation data is, the expectations of the participants and how to capture data in an effective, yet pragmatic way. My reflections are captured here.

7.2.2.1 Measuring progress and attributing it to these interventions

This research contained new methods which had not been adopted in the PGCE course before, namely the children's focus group feedback (sorting activity – pilot only, Thinking Fish – pilot and main study). As such there were little appropriate benchmarking data to compare student teachers' understanding about children's learning before and after the intervention. The benchmarking may have been useful in determining the progress made by the student teachers and attributing that progress to these interventions in particular. Therefore it may have been useful to obtain a grade for each student teacher before the interventions were introduced. However, this grade would have been at a very early stage in the student teachers' learning and development on the PGCE course and as such may have reflected very little about the understanding of the student teachers about children's learning because arguably they had only just joined the course. The timing of the introduction of the intervention into school was deliberate to coincide with the student teachers' learning about social constructivism on the academic side of the PGCE course. Therefore moving the intervention to a different time during the course may not have been appropriate either. Without adopting a positivist approach to the research including a control group, there would be no way of measuring progress and attributing that progress to this intervention. Even then the control group of individuals would be different student teachers in different settings with different mentors so the control group would have too many variables within it to be comparable. Once I had understood this, there was also a question for me about whether the progress that was demonstrated was what should be expected of a PGCE student at this stage of the course, over one week. Of course, the development of every student teacher is different as are their starting and ending points. I considered the important aspect to be that the student teachers made progress and on reflection, the

qualitative data (discussed above) shows the development in the student teachers' thinking about children's learning during the time of the intervention and how they considered changing pedagogical practices as a result.

7.2.2.2 Use of data collection tools by participants

These case studies have provided insight into the worlds of the participants, in particular in regards to developing the understanding of student teachers' understanding about children's learning. However, not every participant collected data in the same way. Examples of this include the mentors completing some but not all sections of the observation form (it is not a course requirement to do so) and student teachers changing the Thinking Fish to a different image (personalisation to the context for learning and the children in that context). I was concerned about the consistency of the data as a result. However, a constructivist approach implies individualism, and, on reflection, I think that these differences are important for the student teachers and children to be successful in their development. In order to be successful as an MKO, learning has to be tailored to the learner with whom you are working and their progress in their ZPD. What these alterations demonstrate are that both the mentors and the student teachers in role as MKOs were making considered decisions about how best to scaffold their learners (student teachers or children) in order for them to be successful in their learning.

7.2.2.3 Inter-rater consistency

The issues of consistency between mentor observers (raters) have been discussed at length, in various forms throughout the text preceding this section, demonstrating my continuous reflections on the matter. It was an issue which, throughout, I considered of potential concern to the trustworthiness of the interpretation of the data. However observations by mentors of student teachers have been embedded in the practice of ITE for many years. This means that consistency between observers (raters) is discussed and is an ongoing topic for professional development of mentors, year on year. The university has a process by which it invites all mentors to professional development sessions. There is still room for inconsistency between observers, however. I have considered that moderation between mentors and an improved proforma might further reduce the inconsistency. Moreover, an interesting reflection which I am still considering is how it could be replaced. One thought would be for mentors to work alongside student teachers as MKOs to support their developing capacity of self reflection

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with a view to ultimately therefore making accurate assessments of their own practice and thus not require observation in such a formal way.

Another thought would be to embed the practice of receiving children's feedback about their learning as this is meaningful to student teachers in understanding children's learning but also to the children, on a meta-cognitive level (intra personal plane), thinking about their own learning and articulating it on the interpersonal plane. The purpose of this assessment would be for student teachers to receive formative feedback from the children about their learning in order to better understand, and support, their learning needs. As a result, an implication for ITE would be to change philosophy from predominantly summative assessment practices to embedding formative assessment (Black *et al.*, 2002). This has two major benefits. The first so that the student teachers receive regular feedback and guidance about children's learning without a graded outcome. This would enable the student teacher to reflect (intrapersonal plane) on the feedback provided on the intrapersonal plane, and respond to this advice through changes to their practice. The second benefit is that the practices in ITE of providing formative feedback could act as a model of practice for the student teachers of the expectations associated with, and benefits of, formative feedback associated with working in the classroom.

7.2.2.4 The participants' response to involvement in this study

I elicited data from student teachers in the forms of children's focus group feedback, reflective logs and their mentor's observations. Whilst the student teachers engaged with the process of the research voluntarily and were provided opportunities to not be included in the research project, they did engage with this process because it was an embedded assessment on the PGCE course. They had to do it, but did not have to be part of the research. The mentors' observations of the student teachers had to be done as part of the course requirements, but they, too, could opt not to be included in the research data. This meant that two of the participants could have completed the documentation with the mind set of 'trying to give the right answer'. Equally the children could have had the same mindset in the feedback to the student teacher in the focus group activities. However, on reflection, having reviewed the data several times, I do not believe this to be the case. First, as discussed above, the power issues that this would imply did not appear as issues in the research. Second all participants were operating in the modus operandi of the classroom: children talk to student

teachers about learning, student teachers talk to mentors about learning, student teachers reflect on their learning and their understanding of children's learning.

7.2.2.5 Constraints and improvements to data collection

The way that the data was elicited in this research was restricted by several factors. These include what fitted best in the classroom and the PGCE course, the time frame, the availability of the participants and the fact that the research was conducted only by me. It was intended that this practice of talking to children about their understanding of learning is taken forward in to the student teachers' practice as a future teacher and so it needed to be manageable. Therefore these methods of data capture, I knew, fitted into the practice in the classroom. However an aspect on which I reflected was that case studies typically elicit richly descriptive data and in this research the data was less so. On reflection it may have been beneficial to return to the participants to check my interpretation of findings and also to capture the whole dialogue between participants, perhaps through audio recording, to review alongside what was considered here. However there was no opportunity to this, on this occasion, as the student teachers had left the course, the children had moved to the next year group, and so on.

The methodology requires development should this approach be adopted in the future in other contexts. The study would benefit from being conducted over a longer time frame in order to gather more rich data. It may be helpful to analyse differences between groups of student teachers, for example by gender or ethnicity, and then more detail about the participants would be required. An example of this might include an understanding of whether student teachers from a minority ethnic group also had English as an additional language. This level of detail would enable reflection on the impact of this intervention with groups of student teachers with certain characteristics in the overall population. It would also be useful to revisit the participants after data analysis in order to corroborate findings further and clarify interpretations made. One other consideration might be how to capture the entire conversation within the children's focus group and the mentors' meetings with the student teachers as these might unveil nuances of understanding which may be missed in the data elicitation process as it stands. It could also be interesting to explore the children's views about their learning during different phases of the lesson, although these chunks of time may be too small to reveal really usable information. It may also be useful to consider widening the membership of the focus groups in order to hear views from more than the same

six children, and across a wider range of lesson content. This would ensure that all children in the class have their voices heard.

To improve the approach to the research it would be helpful to minimise institutional factors such as time available to undertake the research, the demands of Ofsted on the ITE institution during the research period (there were two during the period of this research study), other colleagues understanding of what it means to be researching at this level and so on. Although this is perhaps idealistic, these are all factors which have impacted the approach and may therefore have impacted the findings also.

7.2.2.6 Strengths and constraints associated with the data analysis process

Thematic analysis of the data revealed, described and explained the findings. The qualitative data were tagged to identify phrases, relationships, patterns, themes, differences and sequences to identify categories and describe the characteristics of the data collected. Data were then clustered, counted, compared and contrasted in order to build a logical chain of evidence linked to theory. The advantages of this approach were that the data were efficient to handle and enabled qualitative as well as quantitative comparisons to be made (Open University, 2001). On reflection this reduction of the data made them manageable but, in the process, may have led to the omission of some of the richness from the original data sources (Weber, 1990). That said all data were compared to all other data and returned to in their complete state for reflection and reinterpretation to ensure trustworthiness of interpretation (Mukherji & Albon, 2015).

The variety of research methods utilised, enabled each type of data to inform the other. Due to the nature of the data collected from the Thinking Fish, sorting activity, observations and so on, as already described, it was important to acknowledge the place of language as a thinking tool in the data elicitation process. Vygotsky (1978) described the use of language as not only a means of sharing information and experiences, but also as a means of making meaning together. The data elicited using these methods allowed this to happen in the analysis stage of the research and acknowledged that language was both temporal and cumulative in nature (Open University, 2001).

In this case, thematic analysis was shaped around the processes and locations of learning associated with a socio-cultural approach (Vygotsky, 1986, Kozulin, 2003) and used the model from Tharp & Gallimore (1998) as a framework for analysing data (table 8). This fitted into the social-constructivist dimensions of the

research and examined what was said and how the shared understanding was developed (Open University, 2001).

As a researcher just beginning to adopt reflexive methodology, it did not occur to me until I was engaged in the data analysis that this may not the best approach. Through reflection I have identified that segmenting social constructivist theory (Vygotsky, 1978) into a step by step process does not allow for the learning of the student teachers and the children to move back and forth, or in a helix (Littleton & Mercer, 2013). In allocating the data to each stage I realised that this limited the flexibility for learners to move back and forth in their ZPD particularly between then inter- and intrapersonal phases. In fact the staged process appeared to indicate that there should be progression from one step to the next, however the data appeared to indicate that this was not always the case. Whilst it was useful to compare themes inducted from the data to the learning processes of the theory to demonstrate the connections between my data and social constructivist principles (Vygotsky, 1978), it was not so useful for clearly acknowledging the dynamism of the learning process in both the student teachers' and children's, understanding of learning. Having said this however, there may be a case for using a framework, such as this, as a visual representation of one segment of the helix (figure 23 below) as described by Littleton & Mercer (2013). Even so there has to be an acknowledgement of the dynamism of the learning process.

There remains difficulty with assuming stages to describe how children learn as these over simplify the complex processes involved in children's learning. Stages imply sequential linear steps, each being the precursor to the next which underestimate a child's ability to learn. A social constructivist view of learning accepts that children are all different and environmental, social and cultural aspects affect their learning and therefore the stage a child might be in. However, Tharp & Gallimore's (1998) visual representation of Vygotsky's theory in this study demonstrated different aspects to social constructivist theory. Therefore the stages can be seen as fluid rather than sequential, and as tools to aid the children's thinking rather than steps to be completed.

Consequently I have rethought the staged model presented by Tharp & Gallimore (1998) (figure 5) and represented my understanding of learning from the data in this project in a helix as suggested by Littleton & Mercer (2013) (figures 22 and 23 below) without using the term of 'stage' which does not reflect the dynamics of the learning process, and reflects an assumption of an hierarchical order of learning.

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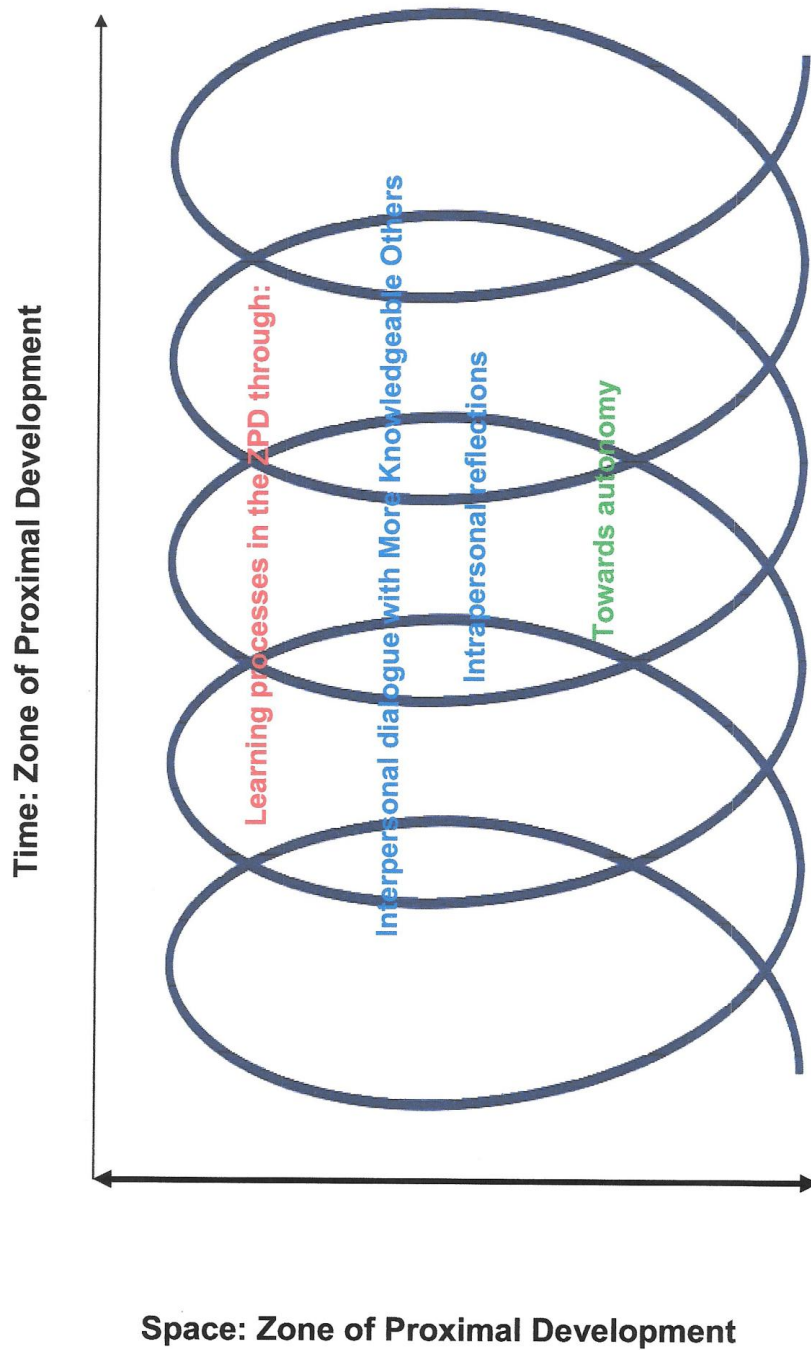
Figure 22 Visual representation of learning through the ZPD

Rather than showing the stages of Vygotsky's theory delineated into four distinct stages (figure 5) which might be interpreted as being intended to be taken sequentially, figure 22 shows how I have taken the notions of the four stages and represented the learning through a helix. As stated above, in this study learning was not linear and progressive. Both the student teachers' understanding of learning moved back and forth between the inter- and intra-personal phases. This iterative movement between the inter- and intrapersonal stages of dialogic engagement with learning is perhaps more clearly indicated here in adopting the notion of a helix as suggested by Littleton & Mercer (2013). This is because this might better show how talking together on the interpersonal plane scaffolds ideas to enable transformation through joint reflection on the intrapersonal plane, examples of which were seen in the focus group work, both child to child and child to student teacher. Figure 22 shows the interpersonal stage involving the MKO, the intrapersonal reflective stage and the move towards becoming autonomous each moving back and forth through space (ZPD) within the helix. These were the first three stages in Tharp & Gallimore's model. Stage four, deautomatisation, and the recursive loop, as represented by Tharp & Gallimore (1998) is not explicitly shown. This is because the nature of a helix allows for deautomatisation and a recursive loop to any other stage, at any stage or time during the learning in the ZPD.

Figure 23, is an extension of figure 22. It demonstrates where the model used in this study, as devised by Tharp & Gallimore (1998), and originally laid out in figure 5 might be positioned as a cross section of the helix notion of the ZPD as suggested by Littleton & Mercer (2013). Thus it represents the static model used to interpret the data in this project, as a small part of the dynamic process of interthinking. This is an attempt to visually represent how the social constructivist learning processes, described in this study, might be enacted.

Time: Zone of Proximal Development

Learning processes in the ZPD through:

Interpersonal dialogue with More Knowledgeable Others

Intrapersonal reflections

Towards autonomy

Cross- section: Potential position of
Tharp & Gallimore's (1998) model

Space: Zone of Proximal Development
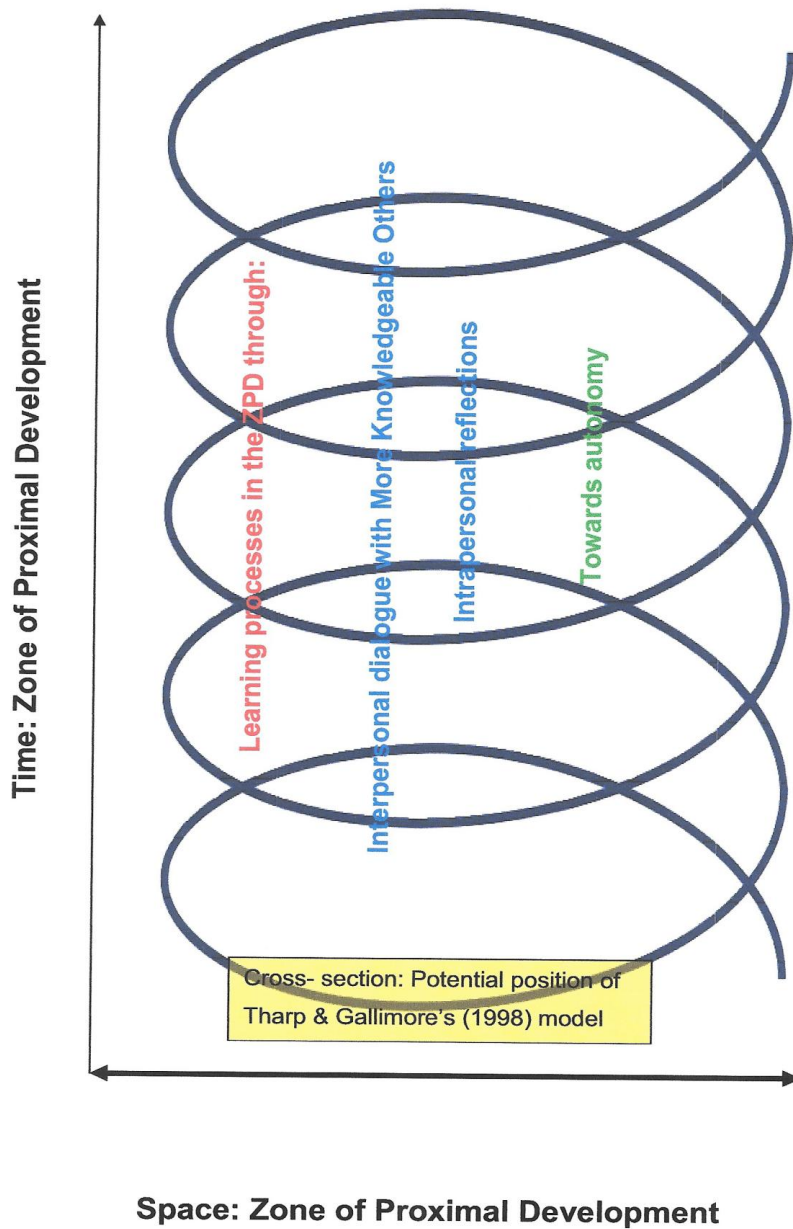
**Figure 23 Visual representation of potential position of the framework
used in this study, in the context of a dynamic model of learning
through the ZPD**

There were data from the group interviews, reflective logs and observations which could be triangulated thus adding trustworthiness to the findings. These were devised and used during the pilot study to interpret the data collected in order to

look for meaning.   It was useful to use a framework, to compare the data to well-known/accepted ideas, particularly as this research was about and was framed in the context of a socially constructed learning approach (Patton, 1990). In working in this way, the children and the student teachers took the role of the narrators; the social constructivist framework Tharp & Gallimore (1998) provided a frame for interpretation and my role was therefore to draw conclusions. This was one way of making sense of the process of learning from a social constructive perspective and of making sense of the process of learning from both the student teachers' and the children's perspectives. It was hoped that in engaging in this process the student teachers' understanding of learning from a social constructivist perspective would be enhanced.

7.3 Contribution to knowledge

The most significant contribution to knowledge in this research is the development of tools used to scaffold dialogic spaces for children's interthinking in classrooms, which contributes to their co-construction of ideas. This may be a useful approach for teachers and student teachers to adopt as the experience for the participants in this study was meaningful and replicable in future practice, using real classroom activity as research data.

Mediating the construction of dialogue with the Thinking Fish provided a way into both the process of interthinking for children, and also student teachers' understanding of such interthinking as expressed through their dialogue in the focus groups. The study has illustrated how ground rules for dialogue between children should include spaces for listening. Whilst children may talk to each other about what they are doing as common practice in classrooms, and teachers would expect them to do that, the Thinking Fish provided a scaffold specifically for talking about their learning, thus creating a mediated, dialogic space for interthinking focused on their own learning. Thus the Thinking Fish may be considered to be the vicarious presence of the teacher that enabled the familiar to be made strange.

These scaffolds designed as bespoke pedagogical tools to enable discussion on the interpersonal plane, and reflection on the intrapersonal plane, by the participants have been used creatively as research tools. The Thinking Fish demonstrates how Hopkins' (2008) model can be interpreted to work in practice with children in classrooms by student teachers. This approach enabled understanding about teaching and learning to be conveyed to the researcher, but

at the same time and more importantly enabled the participants to develop their understanding of children's learning.

In adopting scaffolding, in both direct and indirect forms (Warwick, Mercer & Kershner, 2013) the student teachers were employing pedagogical knowledge to design appropriate tasks for learning. However unlike the MKO, the cultural artefacts, represented in this project by the bespoke pedagogical tools, did not have agency of their own and therefore required mediation. This mediation was provided by the vicarious presence of the teacher (Warwick et al., 2010) in a variety of forms. In doing so the student teacher created a collaborative learning environment where interthinking was enabled (Littleton & Mercer, 2013). These notions are also reflected in the research design. The research tools used by the participants are mediated through the vicarious presence of the researcher and because their design enabled collaboration, interthinking was also enabled.

The context of the current research study, ITE, is particularly important given that this is the first time student teachers have a real opportunity to engage with their understanding of children's learning. The main issue, as I see it here, was that the context of ITE remains focussed on training rather than teacher education. The contribution of the current study in this regard was about arguing the place for children's voice once more, with evidence in support of the fact that in understanding children's learning better, a student teacher or a beginning teacher is better able to demonstrate progress in terms of the Ofsted grading and meeting the Teachers' Standards. This may be useful to other ITE providers in similar circumstances and may be useful to future policy makers in considering how best to achieve the best quality in teachers to enable the best learning in children.

As has been demonstrated, the current rhetoric around children's voice is rooted in the notions of giving children a say in decisions which affect them (DCSF & UNICEF, 2009). This is principally demonstrated in schools today through involving children in democratic decision-making systems such as school councils as evidenced from the data in the pilot study (Whitty & Wisby, 2007). However what this study has drawn out in support of children's voice is the value to children as learners and teachers as MKOs in children's learning. Listening to children's voices enabled understanding by student teachers about children's learning to be developed, as well as for the children to engage with meta-cognition, and thus understand their learning better as a result. This corroborates the work done

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previously with children and qualified teachers by (Littleton & Mercer, 2013, Rudduck & Flutter, 2004).

In other research, qualified teachers have been used for studies where children's voice is enabled and recommendations have been made that this practice is adopted in ITE. This project has enacted those recommendations. The project took place with PGCE student teachers, early on in their course, during their first school placement. Thus there is now the beginning of evidence that those recommendations are well founded, and that embedding children's voice in ITE does enable student teachers to understand children's learning. Further previous studies on children's voice have been predominantly secondary based (Teaching and Learning Research Programme, 2004 - 29 Secondary, 6 Primary) whereas this study incorporated practice from 27 primary age phase settings.

Finally, I have attempted to recreate an observation tool which may support the identification of classroom practice which is most closely associated with facilitating children's learning from a social constructivist viewpoint to better enable formative feedback to student teachers. As a result, I have contributed to the case-study University's theorising and practice with student teachers and mentors in regard to their understanding about learning from a social constructivist viewpoint.   In doing so, I have demonstrated how student teachers' facilitation of learning may be observed in practice without the need to apply grades, although there still remains the issue of inter-rater reliability when any observation tool is utilised.   Other ITE providers may find this way of working useful to develop student teachers' understanding of children's learning and pedagogy.

7.3.1 How can children's views on their learning be used to inform the development of student teachers' understanding of learning and their teaching practice?

In summary, the findings confirm that:

- the more knowledgeable other enabled the learner to express their thinking. Children required an MKO to scaffold their thinking about their learning. The MKO can be both the student teacher and their peers - interthinking, (Littleton & Mercer, 2013). The opportunity to talk about learning is provided through the focus group.

- scaffolds on the interpersonal plane can provide language, required by the children, to enable them to talk about their learning. The Thinking Fish is an example of this.

- student teachers also need scaffolds to enable them to think about how to scaffold children's learning. In the current study, these were MKOs, both children on the interpersonal plane and the prompts to reflect upon on the intrapersonal plane. The learning relationship therefore can be reciprocal.

- talk for learning on the interpersonal plane between the student teacher and the children, and reflection on the intrapersonal plane can lead to increased understanding about how children learn by both student teachers and the children themselves (meta-cognition).

- power in the classroom can remain with the student teachers in terms of control of behaviour, the curriculum and the focus group activities, when children are enabled to talk about their learning through the activities provided in the focus groups. This is important because the student teachers' role as leader of the classroom is not undermined in undertaking an intervention of this sort.

7.3.2 How can school-based mentors support the development of student teachers' understanding about learning?

In summary, findings from case studies cannot be easily generalised. However, the outcomes here suggest:

- children, as MKOs can enable the student teachers to reflect on the intrapersonal plane about their understanding of children's learning through providing feedback on the interpersonal plane in the focus group activities. However, the mentor should have discussions about how children learn in the feedback provided. The focus of the feedback from the mentor to the student teacher should be based less around managing the classroom environment, and more about scaffolding the student teachers' understanding about children's learning. Additionally the feedback from the mentor needs to support the student teacher in their developing role as an MKO. This is not evident in the data elicited, and yet it is implied as the mentors made suggestions to change practice which student teacher acted upon, and their role as a teacher developed as a result.

- scaffolds, in the form of observation tools, can provide the language required by the mentors to enable them to talk about children's learning with the

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student teachers. The focus of the observation tool in reality should be the student teachers' pedagogy.

- student teachers need scaffolds to enable them to think about how to scaffold children's learning. These were MKOs, both mentors on the interpersonal plane and the prompts to reflect upon on the intrapersonal plane. The learning relationship is therefore intended to be reciprocal. The mentors enable a collaborative learning discussion with the student teachers. These discussions may have taken place, but they were not captured as part of the research data. This may help to make learning reciprocal.

- student teachers and mentors need to understand how learning from a social constructivist viewpoint was enabled in the classroom so that they can plan effectively for opportunities to talk to children about their learning. The student teachers need a scaffold which enables the children to engage with talk for learning. Mentors also need to be scaffolded to enable them to enable the student teachers in this practice. The assumption cannot be made, that because mentors are qualified teachers and attend mentor training, this is part of their practice and would therefore form part of their interaction with the student teachers.

- feedback on the interpersonal plane between the student teacher and the mentor, and reflection on the intrapersonal plane leads to student teachers changing their practice.

- power in the classroom remains ostensibly with the mentors in terms of what the student teachers are allowed to do with the children. However the student teachers are enabled to talk about learning with the children through the activities provided in the focus groups. This is important because the student teacher is enabling the children to talk about their learning.

- ways to increase the reliability between observers needs to be considered so that difference is minimised. One way of doing this may be to moderate observations between mentors, another is to develop a revised observation protocol.

7.3.3 Conclusions for implementation in ITE
There are a number of implications for ITE in this study:

- the student teachers and mentors needed to understand how learning from a social constructivist viewpoint was enabled in the classroom so that they could plan effectively for opportunities to talk to children about their learning.

The student teachers were provided with a scaffold which enabled the children to engage with talk for learning. ITE is an obvious place to embed this practice so that beginning teachers take it with them in to schools (Flutter, 2007). These would need to be incorporated into both the curriculum for ITE and the curriculum for mentor development.

- in designing this project, the approach I took to investigating the role of children's voice in enhancing student teachers' understanding of learning and their pedagogy, was necessarily constrained as a result of the time limits of the PGCE course within which the participants were working. The decision not to take forward the notion of children as researchers (Kellett, 2008, Kellett, 2011) is an example of the way in which the time limit constrained what was feasible in this research. However, in the future this idea could be developed to embed children's voice more deeply in ITE. The children and teachers involved would require 'training' (Kellett, 2008) to develop the necessary skills to make the research representative of the experiences of the children, and this would take time to embed. One way of approaching this would be to structure the necessary skills for development across an undergraduate route for ITE, which are courses of three or four years. If this approach were adopted, both the student teachers and the children in the University partnership schools could acquire the requisite skills, over time, to develop meaningful research projects. Thus student teachers would learn more about learning and the children about research. In doing so a scaffolded or mediated approach to the student teachers understanding of children's voice could be embedded into the course, thus preparing them to recognise children as experts in their own lives, prepared to listen to children's views and design appropriately tailored, pedagogical experiences based on these experiences once they are employed in schools.

- if mentor observations are to continue, a revised format, should be considered which focuses more on the student teacher developing their understanding of children's learning from a social constructivist perspective, and enables mentor feedback which considers how the children's learning will need to be developed in the future. Table 29 (below) is a drafted example of what this might look like. It draws together aspects of teaching and learning (McGregor, 2007) which are most commonly associated with a social constructivist perspective of learning (Vygotsky, 1978), as an entirely qualitative evidence record of what may be observed in classrooms. It also collates the different perspectives (children, student teacher, mentor) on the

teaching and learning as part of the qualitative evidence base (Bleach, 1999). It is structured to provide formative feedback (Black *et al.*, 2002) to the student teachers about children's learning in their classroom. Whilst the Teachers' Standards are included, this is to demonstrate how social constructivist pedagogy might enable them to be met.

Table 29 Example model for observation, incorporating aspects from (Bleach, 1999: 59-60) and McGregor (2007:55)

Indicators of understanding of role as MKO	Evidence-based judgement and suggested developments	Teachers' Standards (2012)
Establishes a mutually supportive learning environment		1
Plans opportunities as the MKO for children to talk about what they are learning		2
Plans opportunities as the MKO for children to address their next steps in learning		2, 5, 6
Challenges children's thinking as the MKO to enable progress through the ZPD		1
Scaffolds children's learning to enable progress through the ZPD		4
Mediates children's thinking through collaboration on the interpersonal plane with more knowledgeable others (peers/adults)		8
Mediation is responsive to the needs of each child		5
Encourages peers to challenge each other as MKOs to one another to mediate each others' ZPD		4
Provides opportunities for children to talk on the interpersonal plane about how they are learning		2
Listens to on the interpersonal plane, analyses on the intrapersonal plane and responds to children on the interpersonal plane as the MKO to enable further progress through the ZPD		6
Scaffolds children to reflect on their learning (autonomously on the intrapersonal plane, with peers and adults as MKOs on the interpersonal plane)		2
Summary of children's reflections about their learning experience (TS2)		
Student teacher reflections (on teaching and learning and feedback from mentor and children) (TS4 and 8)		
Future development to practice, including actions by mentors in support of this	**Intended impact on children's learning** (TS 2 and 5)	

- This model of observation would not negate the issues with inter-rater reliability but would focus the feedback towards the children's learning, the next steps in a student teachers understanding and the role of the mentor within this. Questions might be raised about how the Teachers' Standards could be evidenced through this approach, and two Teachers' Standards (TS) are not explicitly addressed are: TS3 subject knowledge, and TS7 behaviour

management. However it could be argued, from the evidence elicited from the student teachers in this study, that behaviour for learning is achieved when the learning is appropriately matched to learners. This would leave subject knowledge to be evidenced, and although implied in this pedagogic practice, could perhaps be captured by other means, such as a discussion with subject tutors or a portfolio demonstrating research into topics before teaching.

- if observations are to be abandoned due to their lack of reliability, then other means of scaffolding the learning of student teachers around their understanding of children's learning would be necessary. This could be enabled by developing ways to scaffold reflections on the intrapersonal plane by student teachers as better evidence of their understanding of teaching and learning. The role of the mentor here would be as MKO in guiding and facilitating the student teacher to move their understanding through their ZPD towards autonomy.

- the above modified feedback proforma (table 29) includes student teachers' reflections on the intrapersonal plane on their own understanding of children's learning. This could, with scaffolded support on the interpersonal plane from the mentors become increasingly more accurate overtime thus reducing the need for a grade. It is focused on how children learn from a social constructivist perspective and how to change practice as a result (Lopez-Pastor *et al.*, 2012) thus moving the student teacher through their ZPD towards autonomy as a teaching professional.

- these changes would require a mentor to be removed from the role of assessing the student teacher and into the role of MKO, facilitating, coaching and guiding the student teacher through their ZPD. However, in order for this to happen mentors require scaffolding from MKOs to become 'developed' (McIntyre and Hagger, 1992, cited in Williams *et al.*, 1997) in order that they may understand the complexities of a student teacher's learning and engage collaboratively with them to enable their further development.

- another reason why this study is so important is that it may provide a rationale for a focus on culturally responsive pedagogy in ITE which may, in fact, bring about higher standards in children's learning.

7.4 How the research may be developed further

In the future, this study could be further developed in several ways. One way would be to set up a longitudinal study with volunteer beginning teachers from

programmes that have adopted a deliberate focus on supporting student teachers to understand children's learning through listening to their interthinking in dialogic spaces scaffolded and mediated by student teachers. It is very important to know whether and how teachers' practice is influenced long term by opportunities to understand children's learning from the beginning.

Another way would be to invite a smaller number of student teachers into a project that focused on the nature of the dialogue during interthinking between the participants in order to further understand the learning that is taking place during the co-construction of understanding between the children and the student teacher, rather than only the minutes collected from those discussions. With such enhanced understanding it should be possible to consider scaffolding that would enable children's understanding of concepts at a higher level.

A further direction may be to study NQTs who have embedded this practice in their pedagogical approach in their classroom, which would perhaps reveal the real influence of this kind of intervention on a teacher's practice. In addition, as already noted, there could well be a place for developing children as researcher in ITE programmes, particularly where these are longer than the term of a PGCE.

On a personal level it would be interesting for me as a researcher to use persevere with a reflexive approach to investigations research as formal research has been new and experiential for me. As a supervisor of students' research projects in ITE I intend to pursue this and encourage a similar reflexive approach to research as I feel this would be beneficial. In addition this could then be shared across a network of colleagues who are interested in reflexive approaches to develop the work further.

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Quick Announcement

➡ Interested in children's learning?

➡ Want to see if they have something interesting to say about your teaching?

➡ Want to try ways to improve your teaching?

Kate's doing some research, if you're fascinated,
pick up a flyer on the way out!

FLYER - Children's Voice and Development of Student Teachers' Practice

As a professional, I constantly reflect on ways in which may practice might be improved and this involves seeking information from school, students, teachers, colleagues and so on.

As PGCE Course Leader I am currently undertaking research which is intended to contribute to your reflective practice and the quality of your teaching and learning.

The idea is to find out how you can use children's voice in the classroom to inform the development of your practice.

You will:

- Conduct a focus group of children to elicit their views on the lessons you have taught
- Keep your lesson planning and evaluations/reflections
- Keep the observations that your mentor has done of your teaching

Kate Hudson
T: 01234 793067

Kate.hudson@beds.ac.uk

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University of Bedfordshire

Children's voice and the development of student teachers' practice

Information Sheet for the Mentors

Dear Colleague,

Kate Hudson, PGCE Course Leader at the University of Bedfordshire is currently organising a research project which is intended to contribute to the reflective practice of students on the PGCE course and the quality of their teaching and learning. As Course Leader, Kate constant reflects on ways in which the course might be improved and this inv loves seeking information from school, students, teachers, colleagues, and so on.

This research will investigate the extent to which children's voice in the classroom can inform the development of student teachers' practice and ways in which a university tutor/mentor can support the development of student teachers' practice that involves paying attention to this voice. This enquiry is conceptualised as a piece of action research designed as an iterative spiral of research, evaluation and development cycles in classrooms where student teachers are teaching young children. New learning accumulated in one cycle will be taken into the next. In the initial stages of this, one student on school experience will be investigating how she can improve the quality of her literacy teaching and pupils' literacy learning by collecting and analysing pupils' reflections of her lessons, and responding to the views appropriately.

The initial study will involve:

- The student teacher conducting a focus group of pupils to elicit their views on her lessons
- The student teacher interviewing the class teacher about literacy learning in the class
- The student teacher administering a questionnaire to the whole class on their perceptions of literacy learning at the beginning and end of the project
- The student teacher keeping a reflective journal of her literacy teaching activities
- Meetings between the student and Kate Hudson to discuss each cycle of her literacy teaching and consequent reflections on this
- Analysis of the mentor's observation of lessons taught by the PGCE student

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- Analysis of the PGCE student's lesson planning and evaluation, as well as her reflective journal

  Meetings between Kate Hudson and the student will be minuted and confidential. Neither

  the mentor, pupils, student teacher or the schools will be identified at any time.

  Your participation in the study would involve:

- Observation of the student teacher as a regular part of your mentor's role in supporting the student teacher in her school placement and recording of this observation on the standard school experience observation form
- Agreement that the material collected during the student teacher's classroom activities during this the literacy teaching aspect of her school experience can be used as part of Kate Hudson's main research project

  During and at the conclusion of the study all the data will be kept safely in a locked

  cupboard in a locked room. All electronic material will be password protected.

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Participant's Rights

You are under no obligation to agree either that your observation of the student teacher's classroom teaching can be analysed and used as part of Kate Hudson's research project, or that the material collected by the student teacher can also be so used. If you decide to participate, you have the right to:

- withdraw your permission from the study up to the end of data collection
- ask any questions about the study at any time during participation
- provide information on the understanding that your name will not be used unless you give permission to the researcher
- be given access to a summary of the project findings when it is concluded.

  Should you have any further queries, please contact Kate Hudson or her supervisor, Professor Janice Wearmouth. Their contact details are listed below.

Kate Hudson

Phone: 01234 793067

kate.hudson@beds.ac.uk

Janice Wearmouth

Phone: 01234 793153

Janice.wearmouth@beds.ac.uk

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University of Bedfordshire

Children's voice and the development of student teachers' practice

Consent Form (mentor's copy)

This consent form refers specifically to 'Children's voice and the development of student teachers' practice' which will conducted during the Spring Term, 2011, by Kate Hudson.

I have had the purpose of the research project discussed with me.

I agree to the material from my observations of the student and from the classroom activities of the students being used as part of Kate Hudson's research study

I understand that:

- I am under no obligation to agree to this
- All research data will be kept confidential to Kate Hudson and her supervisor(s) and will be destroyed at the end of the research project

  As a participant in the project I have the right to:

- withdraw my agreement from the project without prejudice up to the end of data collection by writing to, or e-mailing, Kate Hudson at the University of Bedfordshire
- ask any questions about the study at any time during participation
- be provided with information on the understanding that my name will not be used unless I give permission to the researcher
- be given access to a summary of the project findings when it is concluded.

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University of Bedfordshire

Children's voice and the development of student teachers' practice

Information Sheet for the PGCE Students

Dear Colleague,

Kate Hudson, PGCE Course Leader at the University of Bedfordshire is currently organising a research project which is intended to contribute to the reflective practice of students on the PGCE course and the quality of their teaching and learning. As Course Leader, Kate constant reflects on ways in which the course might be improved and this inv loves seeking information from school, students, teachers, colleagues, and so on.

This research will investigate the extent to which children's voice in the classroom can inform the development of student teachers' practice and ways in which a university tutor/mentor can support the development of student teachers' practice that involves paying attention to this voice. This enquiry is conceptualised as a piece of action research designed as an iterative spiral of research, evaluation and development cycles in classrooms where student teachers are teaching young children. New learning accumulated in one cycle will be taken into the next. In the initial stages of this, one student (you) on school experience will be investigating how you can improve the quality of your literacy teaching and pupils' literacy learning by collecting and analysing pupils' reflections of her lessons, and responding to the views appropriately.

The initial study will involve:

- You conducting a focus group of pupils to elicit their views on your lessons
- You interviewing the class teacher about literacy learning in the class
- You administering a questionnaire to the whole class on their perceptions of literacy learning at the beginning and end of the project
- You keeping a reflective journal of your literacy teaching activities
- Meetings between you and Kate Hudson to discuss each cycle of your literacy teaching and consequent reflections on this
- Analysis of the mentor's observation of lessons taught by you

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- Analysis of the PGCE student's lesson planning and evaluation, as well as your reflective journal

  Meetings between Kate Hudson and you will be minuted and confidential. Neither the

  mentor, pupils, student teacher or the schools will be identified at any time.

  Your participation in the study would involve:

- Completing all aspects of your research inquiry as part of your PGCE in your school placement
- Agreement that the material collected during your classroom activities during this the literacy teaching aspect of your school experience can be used as part of Kate Hudson's main research project

  During and at the conclusion of the study all the data will be kept safely in a locked

  cupboard in a locked room. All electronic material will be password protected.

Participant's Rights

You are under no obligation to agree either that your observation of the student teacher's

classroom teaching can be analysed and used as part of Kate Hudson's research project,

or that the material collected by the student teacher can also be so used. If you decide to

participate, you have the right to:

- withdraw your permission from the study up to the end of data collection
- ask any questions about the study at any time during participation
- provide information on the understanding that your name will not be used unless you give permission to the researcher
- be given access to a summary of the project findings when it is concluded.

  Should you have any further queries, please contact Kate Hudson or her supervisor,

  Professor Janice Wearmouth. Their contact details are listed below.

  Kate Hudson

  Phone: 01234 793067

  kate.hudson@beds.ac.uk

  Janice Wearmouth

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  Janice.wearmouth@beds.ac.uk

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University of Bedfordshire

Children's voice and the development of student teachers' practice

Consent Form (PGCE student's copy)

This consent form refers specifically to 'Children's voice and the development of student teachers' practice' which will conducted during the Spring Term, 2011, by Kate Hudson.

I have had the purpose of the research project discussed with me.

I agree to the material collected for my research project and from my school experience being used as part of Kate Hudson's research study

I understand that:

- I am under no obligation to agree to this
- All research data will be kept confidential to Kate Hudson and her supervisor(s) and will be destroyed at the end of the research project

  As a participant in the project I have the right to:

- withdraw my agreement from the project without prejudice up to the end of data collection by writing to, or e-mailing, Kate Hudson at the University of Bedfordshire
- ask any questions about the study at any time during participation
- be provided with information on the understanding that my name will not be used unless I give permission to the researcher
- be given access to a summary of the project findings when it is concluded.

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Characteristics of Student Teacher

Student Teacher Coded ID Tag	Gender x= male	Minority Ethnic Group x=other than white	Special EducationalNeed or Disability	Course of Study x=Early Years	Age X= over 25 years	Final grade	Notes
SBM72	x					G	
KBM2572	x				x	G	
CCM2573	x				x	S	No Fish
CHM71	x					O	
RTM72	x					G	Different Obs Form
ARMEG3		x				S	Different Obs Form
SKMEG72		x				G	
CWMEG72		x				G	No Fish/ladybird
MCMSEND72	x		x			G	
MBMMEGSEND4	x	x	x			U	

JD2572					x	G	
CB2571					x	O	
CJ2571					x	O	
JL2571					x	O	
PM2572					x	G	
VM2572					x	G	
SS2572					x	G	
SB2571					x	O	
KW2571					x	O	
PC72						G	
SC72						G	
EG71						O	No reflective questions
LH71						O	
KM72						G	
EM72						G	

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KS72						G	
AMEY72				X		G	Different Obs Form
ECEY71				x		O	
KBEY2572				x	x	G	
EWEY2571				x	x	O	
RBEY71				x		O	
ECEY72				x		G	
32 = 25%	7 = 22%	4 = 12%	2 = 6% vs 4%	6 = 19% vs 20%	13 = 41%	29 = 90%	

Original Cohort (n=128) Proportion Comparison

O=outstanding, G=good, S=satisfactory, U=unsatisfactory

Focus group collection styles

Fish = 16

Other = 14

Not completed = 2

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Main Study Sample Summaries – Characteristics of Teaching School in which student teachers worked

Student Teacher Coded ID Tag	Age group	Class size	Subject	School Type	Location	Notes
SBM72	1	11	M	L	B	
KBM2572	3	25	L	L	B	
CCM2573	4	30	L	J	P	
CHM71	2	28	M	P	P	
RTM72	4	13	P	J	P	
ARMEG3	123	12	P	P	M	
SKMEG72	2	24	L	L	B	
CWMEG72	4	28	M	P	L	
MCMSEND72	12	22	H	P	M	
MBMMEGSEND4	12	?	M	P	C	
JD2572	4	21	M	J	M	

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CB2571	3	23	L	L	B	
CJ2571	1	?	L	P	M	
JL2571	3	30	M	P	M	
PM2572	5	28	L	P	H	
VM2572	2	28	L	P	P	
SS2572	1	28	M	P	P	
SB2571	2	27	M	P	P	
KW2571	4	25	M	P	H	
PC72	1	27	M	L	B	
SC72	2	30	M	L	B	
EG71	1	?	L	P	M	
LH71	4	31	HU M	J	P	
KM72	3	31	L	P	M	
EM72	1	25	M	P	C	
KS72	2	25	L	P	B	
AMEY72	2	?	M	P	P	

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ECEY71	R	?	P	P	M	
KBEY2572	R	?	P	P	M	
EWEY2571	R	?	M	P	L	
RBEY71	R	?	M	L	B	
ECEY72	R	?	CR	P	C	

Year group	Count in sample	Subject	Count in sample	School type	Count in sample	Location	Count in sample
R = EYFS	4	Maths	14	Lower	7	Bedford	8
1	7	Literacy	11	Junior	4	Peterborough	8
2	9	Creative subjects	1	Primary	21	Milton Keynes	9
3	4	Humanities	1			Cambridgeshire	3
4	6	History	1			Luton	2
5	1	Phonics	4			Northamptonshire	2

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Lesson Planning and Assessment Proforma

This proforma is a suggested way to plan and evaluate a lesson. You can use the school's planning proforma, but you will need to adapt it in order to ensure that it covers the aspects in this proforma.

Subject/Area of Learning:		Date:
Length of lesson:	No. of children:	Year group:

Links to children's previous learning
Risk assessment (if relevant)

Introduction	How long will this last?
Objective:	
Description of activity (including any differentiation)	
Resources (including any use of interactive whiteboard, ICT)	
Key questions	
Specific vocabulary to use	

Main part of lesson	How long will this last?
Objectives/WALT: what I want the children to **learn**.	
Introduction: how I will introduce the main part of the lesson.	
Activities: what the children will do (including differentiation for groups of children or individual children)	
Resources (including ICT use)	
Key questions	
Specific vocabulary to use	
Any follow-up homework	

Plenary	How long will this last?
What will I get the children to focus on? (nb sometimes plenaries need to deal with misconceptions that have arisen during the lesson)	
How will I make sure that all children contribute to the plenary, not just a few?	

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Success criteria (WILF) and assessment
How will children know if they have been successful with their learning? These may need to be differentiated for different groups. Success criteria need to relate to objectives.   ***All children***   ***Most children***   ***Some children***
At what stage in the lesson will I share these with the children?
How will I get the children to use the success criteria to reflect on their learning?
What other ways will I use to assess children's learning during or after the lesson?

Other adults
How will other adults support children's learning during the introduction to the lesson?
How will other adults support children's learning during the main part of the lesson?
How will other adults support children's learning during the plenary?

Risk Assessment

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PROFESSIONAL ATTRIBUTES	Q12 Know a range of approaches to assessment, including the importance of formative assessment	Q23 Design opportunities for learners to develop their literacy, numeracy and ICT skills.
Q1 Have high expectations of children and young people including a commitment to ensuring that they can achieve their full educational potential and to establishing fair, respectful, trusting, supportive and constructive relationships with them	Q13 Know how to use local and national statistical information to evaluate the effectiveness of their teaching, to monitor the progress of those they teach and to raise levels of attainment	Q24 Plan homework or other out-of-class work to sustain learners and to extend and consolidate their learning
Q2 Demonstrate the positive values, attitudes and behaviour they expect from children and young people.	Q14 Have a secure knowledge and understanding of their subjects/curriculum areas and related pedagogy to enable them to teach effectively across the age and ability range for which they are trained.	Q25 Teach lessons and sequences of lessons across the age and ability range for which they are trained in which they:
Q3a Be aware of the professional duties of teachers and the statutory framework within which they work Q3b Be aware of the policies and practices of the workplace and share in collective responsibility for their implementation	Q15 Know and understand the relevant statutory and non-statutory curricula and frameworks, including those provided through the National Strategies, for their subjects/curriculum areas, and other relevant initiatives applicable to the age and ability range for which they are trained Q16 Skills Tests	(a) use a range of teaching strategies and resources, including e-learning, taking practical account of diversity and promoting equality and inclusion.
Q4 Communicate effectively with children, young people, colleagues, parents and carers	Q17 Know how to use skills in literacy, numeracy and ICT to support their teaching and wider professional activities.	(b) build prior knowledge, develop concepts and processes, enable learners to apply new knowledge, understanding and skills and meet learning objectives
Q5 Recognise and respect the contribution that colleagues and carers can make to the development and well-being of children and young people and to raising their levels of attainment.	Q18 Understand how children and young people develop and that the progress and well-being of learners are affected by a range of developmental, social, religious, ethnic, cultural and linguistic influences	Q26a Make effective use of a range of assessment, monitoring and recording strategies
Q6 Have a commitment to collaboration and cooperative working		Q26b Assess the learning needs of those they teach in order to set challenging learning objectives
Q7a Reflect on and improve their practice, and take responsibility for identifying and meeting their developing professional needs	Q19 Know how to make effective personalised provision for those they teach, including those for whom English is an additional language or who have special educational needs or disabilities, and how to take practical account of diversity and promote equality and inclusion in their teaching.	Q27 Provide timely, accurate and constructive feedback on learners' attainment, progress and areas for development
Q7b Identify priorities for their early professional development in the context of induction		Q28 Support and guide learners to reflect on their learning, identify the progress they have made and identify their emerging learning needs
Q8 Have a creative and constructively critical approach towards innovation, being prepared to adapt their practice where benefits	Q20 Know and understand the roles of colleagues with specific responsibilities, including those with responsibility for learners with special educational needs	Q29 Evaluate the impact of their teaching on the progress of all learners, and modify their planning and classroom practice where

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and improvements are identified. Q9 Act upon advice and feedback and be open to coaching and mentoring. **PROFESSIONAL KNOWLEDGE & UNDERSTANDING** Q10 Have a knowledge and understanding of a range of teaching, learning and behaviour management strategies and know how to use and adapt them, including how to personalise learning and provide opportunities for all learners to achieve their potential Q11 Know the assessment requirements and arrangements for the subjects / curriculum areas they are trained to teach, including those relating to public examinations and qualifications.	and disabilities and other individual learning needs. Q21a Be aware of the current legal requirements, national policies and guidance on the safeguarding and promotion of the well-being of children and young people. Q21b Know how to identify and support children and young people whose progress, development or well-being is affected by changes or difficulties in their personal circumstances, and when to refer them to colleagues for specialist support. **PROFESSIONAL SKILLS** Q22 Plan for progression across the age and ability range for which they are trained, designing effective learning sequences within lessons and across series of lessons and demonstrating secure subject/curriculum knowledge	necessary Q30 Establish a purposeful and safe learning environment conducive to learning and identify opportunities for learners to learn in out-of-school contexts Q31 Establish a clear framework for classroom discipline to manage learners' behaviour constructively and promote their self-control and independence Q32 Work as a team member and identify opportunities for working with colleagues, sharing the development of effective practice with them. Q33 Ensure that colleagues working with them are appropriately involved in supporting learning and understand the roles they are expected to fulfil.

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Preamble to Teachers' Standards (2012)

Teachers make the education of their pupils their first concern, and are accountable for achieving the highest possible standards in work and conduct. Teachers act with honesty and integrity; have strong subject knowledge, keep their knowledge and skills as teachers up-to-date and are self-critical; forge positive professional relationships; and work with parents in the best interests of their pupils.

Part one: Teaching

A teacher must:

1 Set high expectations which inspire, motivate and challenge pupils

- establish a safe and stimulating environment for pupils, rooted in mutual respect
- set goals that stretch and challenge pupils of all backgrounds, abilities and dispositions
- demonstrate consistently the positive attitudes, values and behaviour which are expected of pupils.

2 Promote good progress and outcomes by pupils

- be accountable for pupils' attainment, progress and outcomes
- be aware of pupils' capabilities and their prior knowledge, and plan teaching to build on these
- guide pupils to reflect on the progress they have made and their emerging needs
- demonstrate knowledge and understanding of how pupils learn and how this impacts on teaching
- encourage pupils to take a responsible and conscientious attitude to their own work and study.

3 Demonstrate good subject and curriculum knowledge

- have a secure knowledge of the relevant subject(s) and curriculum areas, foster and maintain pupils'
  interest in the subject, and address misunderstandings

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- demonstrate a critical understanding of developments in the subject and curriculum areas, and promote the value of scholarship
- demonstrate an understanding of and take responsibility for promoting high standards of literacy,
  articulacy and the correct use of standard English, whatever the teacher's specialist subject
- if teaching early reading, demonstrate a clear understanding of systematic synthetic phonics
- if teaching early mathematics, demonstrate a clear understanding of appropriate teaching strategies.

4 Plan and teach well structured lessons

- impart knowledge and develop understanding through effective use of lesson time
- promote a love of learning and children's intellectual curiosity
- set homework and plan other out-of-class activities to consolidate and extend the knowledge and
  understanding pupils have acquired
- reflect systematically on the effectiveness of lessons and approaches to teaching
- contribute to the design and provision of an engaging curriculum within the relevant subject area(s).

5 Adapt teaching to respond to the strengths and needs of all pupils

- know when and how to differentiate appropriately, using approaches which enable pupils to be taught
  effectively
- have a secure understanding of how a range of factors can inhibit pupils' ability to learn, and how best to overcome these
- demonstrate an awareness of the physical, social and intellectual development of children, and know
  how to adapt teaching to support pupils' education at different stages of development
- have a clear understanding of the needs of all pupils, including those with special educational needs;
  those of high ability; those with English as an additional language; those with disabilities; and be able to use and evaluate distinctive teaching approaches to engage and support them.
  6 Make accurate and productive use of assessment

- know and understand how to assess the relevant subject and curriculum areas, including statutory
  assessment requirements
- make use of formative and summative assessment to secure pupils' progress
- use relevant data to monitor progress, set targets, and plan subsequent lessons

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- give pupils regular feedback, both orally and through accurate marking, and encourage pupils to respond to the feedback.

7 Manage behaviour effectively to ensure a good and safe learning environment

- have clear rules and routines for behaviour in classrooms, and take responsibility for promoting good
  and courteous behaviour both in classrooms and around the school, in accordance with the school's
  behaviour policy
- have high expectations of behaviour, and establish a framework for discipline with a range of strategies, using praise, sanctions and rewards consistently and fairly
- manage classes effectively, using approaches which are appropriate to pupils' needs in order to involve and motivate them
- maintain good relationships with pupils, exercise appropriate authority, and act decisively when
  necessary.

8 Fulfil wider professional responsibilities

- make a positive contribution to the wider life and ethos of the school
- develop effective professional relationships with colleagues, knowing how and when to draw on advice and specialist support
- deploy support staff effectively
- take responsibility for improving teaching through appropriate professional development, responding to advice and feedback from colleagues
- communicate effectively with parents with regard to pupils' achievements and well-being.

Part two: Personal and professional conduct

A teacher is expected to demonstrate consistently high standards of personal and professional conduct. The

following statements define the behaviour and attitudes which set the required standard for conduct throughout a teacher's career.

Teachers uphold public trust in the profession and maintain high standards of ethics and behaviour, within and outside school, by:

- treating pupils with dignity, building relationships rooted in mutual respect, and at all times observing

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- proper boundaries appropriate to a teacher's professional position
- having regard for the need to safeguard pupils' well-being, in accordance with statutory provisions
- showing tolerance of and respect for the rights of others
- not undermining fundamental British values, including democracy, the rule of law, individual liberty and mutual respect, and tolerance of those with different faiths and beliefs
- ensuring that personal beliefs are not expressed in ways which exploit pupils' vulnerability or might lead them to break the law.

Teachers must have proper and professional regard for the ethos, policies and practices of the school in which they teach, and maintain high standards in their own attendance and punctuality.

Teachers must have an understanding of, and always act within, the statutory frameworks which set out their professional duties and responsibilities.

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UNIVERSITY OF BEDFORDSHIRE

Research Bid: Ethical Issues (Annex to RA1 form)

Proposer: Kate Hudson

Research Institute: IRED

Proposal short title: Innovations in Partnership: a collaborative approach

SECTION A   To be completed by the candidate

Answer the following question by ringing/deleting **yes** or **no** as appropriate:

1. Does the study involve vulnerable participants or those unable to give informed consent (e.g. children, people with learning disabilities, your own students)?
   Yes. Children in schools.
2. Will the study require permission of a gatekeeper for access to participants (e.g. schools, self-help groups, residential homes)?
   Yes. The PGCE student will require permission from the school.
3. Will it be necessary for participants to be involved without consent (e.g. covert observation in non-public places)?
   No
4. Will the study involve sensitive topics (e.g. sexual activity, substance abuse)?
   No
5. Will blood or tissue samples be taken from participants?
   No
6. Will the research involve intrusive interventions (e.g. drugs, hypnosis, physical exercise)?   **No**
7. Will financial or other inducements be offered to participants (except reasonable expenses)?   **No**
8. Will the research investigate any aspect of illegal activity?
      No

9. Will participants be stressed beyond what is normal for them?
      No

10. Will the study involve participants from the NHS (e.g. patients or staff)?
      No
   If you have answered yes to any of the above questions or if you consider that

   there are other significant ethical issues then details should be included in your

   summary above. If you have answered yes to Question 1 then a clear justification

   for the importance ofr the research must be provided.

   *Please note if the answer to Question 10 is yes then the proposal should be

   submitted through **NHS research ethics approval procedures** to the

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appropriate **COREC**. The University Research Ethics Committee should be informed of the outcome

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Informed consent

- Full permission will be sought for the study in writing from the Associate Dean of the Faculty of Education, Sports and Tourism.
- Consent will be obtained from the students, involved with project as well the mentors of the schools as gatekeepers for their children. There is a standard "Partnership Agreement" in place and signed by Head Teachers of all partnership schools. The Head Teachers sign on behalf of the children and teachers agreeing that data collected in their schools can be used for University purposes. Therefore there is no further need to seek individual consent from children or teacher as the Gatekeeper has already consented to this. This agreement is reviewed, updated and signed annually by university, student and head teachers.
- Participants will be informed of the intentions of the project as it is both funded by the University of Bedfordshire and for academic purposes (EdDs) for the researchers.
- Participants will be informed of the intention of the project.
- Participants will be informed of their right to withdraw from the interview at any time if they feel uncomfortable.

Issues of confidentiality and anonymity

- The names of all participants and all participating institutions will be confidential to the researchers only.
- Pseudonyms only will be used in all documentation.
- There will be no mention of the name or locality of any school.

Nature of research and dissemination of outcomes

- Prospective participants (students, mentors and children in school) will be invited to take part in the project, and students and mentors will be given an information sheet and an agreement form to sign.
- Any research report(s) that are generated will be made accessible to all participants on request at the end of the study. Participants will be informed about how they may access this material.

Storage of data

- All data will be kept in a locked container and/or held on computer file accessible only to the researchers.
- At the end of the project all data will be destroyed 1 year after completion of the full research project. The only exception to this will be if Ofsted require evidence of students work within the PGCE course.

Risk of stress

Every effort will be made to ensure that no stress is placed on participants. Participants will be informed that they may withdraw from the research at any time if they so wish, without prejudice and without being required to give any reason for this. Disclosure by a child during the process will be dealt with in

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accordance with the school's procedures, although this is not anticipated as the focus of the discussion will centre on the learning in a particular lesson.

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For mentors and students

Approved by the organisation hosting the research :	
Mentor	Student TB
Date	Date
Students and researchers have read and understood the guidelines on ethical issues related to empirical research. They are aware of the need for anonymity, confidentiality of data, and the need for a professional approach during the investigation. Their research proposal has been approved.	
Researcher Kate Hudson	Research supervisor Janice Wearmouth
Date	Date

For University

Approved by the organisation hosting the research :
Associate Dean of the Faculty of Education, Sports and Tourism Paul Davies

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Date

Checklist of documents which should be included:

- Project proposal
- Documentation seeking informed consent
- Information sheet for participants
- Research Tools

Signature of proposers: Date:

This form together with a copy of the proposal should now be submitted to your Research Institute Director.

SECTION B   Consideration by Research Institute Ethics Committee

Comments of Research Institute Ethics Committee:

If the Research Institute Ethics Committee have issues or concerns then this should be returned to the proposer for these to be addressed.

The   (name of Research Institute)

Research Institute Ethics Committee have considered this proposal and are satisfied that the ethical issues have been satisfactorily addressed

Director of Research Institute: Date:

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This form together with the recommendation and a copy of the research proposal should then be submitted to the University Research Ethics Committee

SECTION C   Consideration by University Research Ethics Committee

The University Research Ethics Committee has approved

this application for ethical approval

Chair University Research Ethics Committee: Date:

PLEASE NOTE THAT NO EXPENDITURE FROM A RESEARCH GRANT WILL BE
AUTHORIZED UNTIL THE UNIVERSITY RESEARCH ETHICS COMMITTEE HAS
CONSIDERED AND APPROVED THE ETHICAL ISSUES.

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UNIVERSITY OF BEDFORDSHIRE

Research Ethics Scrutiny Panel

1   The Applicant

    2.1   Registration No: n/a

    2.2   Name: Kate Hudson

    2.3   Faculty / Institute: Education, Sport and Tourism/ Institute for Research in Education
    2.4   Research Topic: Innovations in Partnership: a collaborative approach
    2.5   External funding: No   (delete as applicable)
2   Ethical Issue(s) raised via RA1b/ RS1b (Research Ethics Scrutiny annex)

Vunerable participants	√	Gatekeeper permissions	√
Participants without consent		Sensitive topics	
Blood/tissue samples required		Intrusive intervention (e.g drugs, hypnosis, physical exercise)	
Financial or other inducements		Investigation of illegal activity	
Excess stress to participant		NHS participants	

3   Panel member reports

Please append your report to this document. Once completed return to the Chair of RI Ethics Panel

4   Final Recommendation (delete as applicable)

    I)   I approve the onward transmission of the research proposal after scrutiny of all ethical
             implications
5   Panel member

    Name (print):   Dr. P. Wright   Signature:

    Position: Academic Director   Date: 11/4/11

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Panel member's report

Overall this seems to be a reasonable research project with only limited ethical considerations. However, I make the following comments.

I have some concerns that the rationale includes the benefits from this research of getting a better OfSTED report and improving potential recruitment in the future. This research should benefit future student teachers and possibly <u>as a consequence</u> the Primary department but is it ethical that the benefits to the Primary Department should be considered a primary reason for carrying out the research in the first place?

In terms of the ethical approval and considerations I am happy that the school and student teachers have been covered. However, there is no specific mention of any need for permission by parents / carers of the pupils involved, children at a young age will not understand the research, are all schools able to give permission on behalf of the pupils' parents / carers to be the subject of research. If this is part of our partnership agreement with schools then this is not an issue?

The consent forms do not specifically note that the participants agree that their data may be used in OfSTED inspections in the future; should they?

Other notes.

Figure 4 is referred to but the first figure that appears is figure 5, where are figures 1, 2, 3 and 4?

Use of I and me in the text should be considered. Occasional typos are present.

"It will take time to complete however I am ~~is~~ used to interviewing student teachers and children and taking notes (Burton, Brundrett & Jones, 2008)." Researcher should not reference somebody else for her competencies!

Quantitative data section is weak and the researcher should seek advice on this.

In general the final sections could be improved and made more rigorous.

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UNIVERSITY OF BEDFORDSHIRE

Research Ethics Scrutiny Panel

1   The Applicant

2.1	Registration No:	n/a
2.2	Name:	Kate Hudson
2.6	Faculty / Institute:	Education, Sport and Tourism/ Institute for Research in Education
2.7	Research Topic:	Innovations in Partnership: a collaborative approach
2.8	External funding:	No (delete as applicable)

2   Ethical Issue(s) raised via RA1b/ RS1b (Research Ethics Scrutiny annex)

Vunerable participants	√	Gatekeeper permissions	√
Participants without consent		Sensitive topics	
Blood/tissue samples required		Intrusive intervention (e.g drugs, hypnosis, physical exercise)	
Financial or other inducements		Investigation of illegal activity	
Excess stress to participant		NHS participants	

3   Panel member reports

Please append your report to this document. Once completed return to the Chair of RI Ethics Panel

4   Final Recommendation (delete as applicable)

II)   I approve the onward transmission of the research proposal after scrutiny of all ethical implications

5   Panel member

Name (print):   Rosie Peppin Vaughn   Signature:

Position: Lecturer   Date: 20/04/2011

For Office Use Only			
Name of receiving RA:	Michelle Miskelly	Date Received by RA:	20/04/11
Notes:			

Panel member's report

I have read through the documents. I think I approve the project, but I do have a query about whether or not informed consent should also be sought from the children in the focus group (or their parents). However as you pointed out this is not my area, so I am not certain whether this would normally be required in such a research project.

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University of Bedfordshire ITT Partnership is built on values of trust and mutual respect which is the basis of our community of professional learning.

An effective working partnership depends on shared responsibilities and tasks and a mutual understanding.

The main aim of these shared responsibilities is to make available appropriate information, resources, staff and experiences to foster Student teachers'

attainment of the Standards for Qualified Teacher Status.

THE SCHOOL'S RESPONSIBILITIES WILL INCLUDE:	THE UNIVERSITY'S RESPONSIBILITIES WILL INCLUDE:	STUDENT TEACHERS' RESPONSIBILITIES WILL INCLUDE:
PROVISION FOR ITE		
▪ Commitment from the Head Teacher, staff and Governors to the school's involvement in Initial Teacher Education (ITE) ▪ Communicate a willingness to participate in the planning, management and delivery of ITE courses should they wish to do so. ▪ Providing a programme in school which facilitates progression towards meeting the standards for Qualified Teacher Status ▪ Show a commitment to the selection process by being involved from the interviewing stage. ▪ Sharing accountability for the quality of ITE within the partnership and supporting the partnership quality assurance procedures ▪ Commitment to self evaluation of school provision for ITE ▪ Allow students to gather evidence from their professional activities within the school, which students will keep confidential and report anonymously within assignments prepared for University assessment. Such evidence must be within the normal expectations for professional use by teachers working within school settings.	▪ Ensuring that courses meet the requirements of academic validation and accreditation and comply with latest DfE regulations ▪ Co-ordinating all aspects of course administration including advertising, admissions, school placements, documentation, maintenance of student records, partnership committees, assessment boards, issuing course awards. ▪ Providing a structured and varied programme which facilitates progression towards meeting the standards for Qualified Teacher Status ▪ Sharing accountability for the quality of ITE through quality assurance procedures including provision of external examiners, advisors and moderators (as appropriate)	▪ Respecting the ethos of the school and carrying out UoB's aims into the community. ▪ Ensuring awareness of reasonable expectation from all parties associated with ITE via handbooks and attendance at appropriate University sessions ▪ Carrying out reasonable duties assigned to them in school to the best of their ability ▪ Demonstrating the highest possible levels of professionalism throughout the course ▪ Understanding the need for reflection concerning their own initial professional development ▪ Maintaining appropriately detailed records to facilitate monitoring of this development ▪ Ensuring communication with all personnel associated with ITE and partnership
FUNDING WILL INCLUDE		
▪ Using ITE funds to support Placement Based mentors in fulfilling their role. This includes	▪ Apportioning available resources and making payments to school for each student teacher	▪ Using school resources in line with guidance for teachers and taking due regard for budget limitations

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weekly meetings with student teachers and attendance at University based meetings and training events: Mentor development days ▪ enabling trainees to photocopy and have materials for use in class teaching in line with school provision for teachers.	▪ Providing support and annual development opportunities to ensure partnership schools can fulfil their responsibilities	▪ Taking responsibility for the care of placement resources and their return at the end of the placement

STAFFING WILL INCLUDE

▪ The appointment of a suitably qualified and experienced teacher to manage ITE within the school ▪ Ensuring that the training provided for the student teachers placed in the schools is supported or supervised by a suitably qualified teacher who has been trained as an school mentor	▪ Assigning a University tutor to each student teacher who has overview of both academic and professional progress ▪ Assigning a University tutor (PQAT) to each school to monitor, moderate and support ITE ▪ Providing professional development for school mentors and recognition of their contribution to ITE	

SCHOOL BASED LEARNING WILL:	**The University will:**	**The student will:**
▪ Provide the student teacher with a variety of experiences and opportunities appropriate to their stage of professional development ▪ Deliver the agreed part of any professional studies programme including providing documentation where necessary ▪ Provide support and training in teaching ▪ Assess each student teacher's progress towards The Professional Standards both formatively and summatively ▪ Complete the required number of observations and give written and verbal feedback ▪ Alert both the student teacher and University at the earliest opportunity of any cause for concern with regards to progress or professional conduct ▪ Complete written reports as stated in the appropriate handbook. ▪ Ensure all requested evaluations are returned by given date. ▪ Be mindful that students from groups targeted for ITE such as males in primary, ethnic minorities and mature students may require additional support in the early stages of training.	▪ Liaise with school mentor with respect to subject-specific and broader professional issues of course planning and student teacher development ▪ Ensure that the agreed number of visits are made to monitor progress ▪ Moderate and assist with school-based assessment. ▪ Provide support in the case of Cause for Concern and At Risk. ▪ Review student teachers' progress through the appropriate documentation.	▪ Liaise between Partnership Quality Assurance Tutor and placement Based Tutor and PB mentor in arranging meetings ▪ Arrange time with their Placement Based mentor to authorise Standards. ▪ Ensure that all documentation is up to date and presented in an organised and easy to follow fashion. ▪ Make available all school based learning related Documentation for their PQAT and Placement Based mentor at any time. ▪ Follow advice given to them by school staff

COMPLIANCE WITH LEGAL DUTIES: **THE SCHOOL WILL**	**THE UNIVERSITY WILL:**	**THE STUDENT WILL:**
▪ Ensure student teachers have an awareness of and comply with school policies in relation to Equal Opportunities and Child Protection, which relate	▪ Ensure student teacher have knowledge of and apply policies in relation to equal opportunities, inclusion policies and child protection	▪ Abide by legal requirements and school and University policies for Equal Opportunities ▪ Ensure that they have applied for and gained an

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		enhanced CRB clearance certificate and make the date and number of the certificate available to the school if requested and carry this on their person at all times when in a school setting.
to latest legal requirements. Where these are not applicable University policies would be invoked ▪ Ensure that student teachers are treated in accordance with Equal Opportunities Policies based on the most recent legal requirements. Where these are not applicable University policies would be invoked. ▪ Not withstanding Head Teachers right to use their discretion, that they accept DCSF guidelines and GTCe on CRB and ISA and student teachers and their professionalism.	▪ Ensure that student teachers are made aware of University Equal Opportunities Policies and Procedures ▪ Ensure that the University provides a structure for reporting any non-compliance during school placements. ▪ Ensure that student teacher have applied for and gained enhanced disclosure through CRB	
STUDENT TEACHER PROTECTION **THE SCHOOL WILL:**	**THE UNIVERSITY WILL**	**THE STUDENT WILL:**
▪ Fulfil its legal duties with regard to Health and Safety policies and have procedures in place which are made available to student teachers ▪ Forward to the University a copy of any accident or incident report in relation to a student teacher ▪ Ensure that the student teachers will be treated with due care, consideration and respect as befits a beginning professional	▪ Provide guidance for student teacher with regard to Child Protection / safeguarding and appropriate teacher behaviour through regular updates from GTCe and Union advice. ▪ Provide for the student teacher a code of responsibility regarding professional behaviour. ▪ Invoke its disciplinary or Cause for Concern procedures should a student teacher behave inappropriately during school experience.	▪ Abide by the school policy on Child Protection Act in accordance with guidance provided by the University in respect of professionalism and avoidance of situations making them vulnerable to allegations ▪ Abide by the school policy on Health and Safety.

University Signature: (Course Leader / Director of Partnerships)   Head Teacher's Signature:

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Focus Group Work

WELCOME

And thank you for your help!

Kate Hudson 0711837 Feb 14

Why are we here?

so that we can…

- share ideas, thoughts and feelings about the 'X' lesson we've just had

- discuss the work and the activities

- collect together the expertise of you and me to help make learning even better

Kate Hudson 0711837 Feb 14

Rules for this group

- Our group is talking and thinking aloud

- **Everyone** should be asked
  - what do you think?
  - why do you think that?

- Everyone's ideas should be carefully thought about

- We will look at and listen to the person talking

- We will share everything we know

- After discussion, we will try to agree on what to do or say

Kate Hudson 0711837 Feb 14

A quick reminder…

- The focus group is voluntary
- You can leave the focus group at any time
- Things you talk about in the focus group will not change the way your work is marked
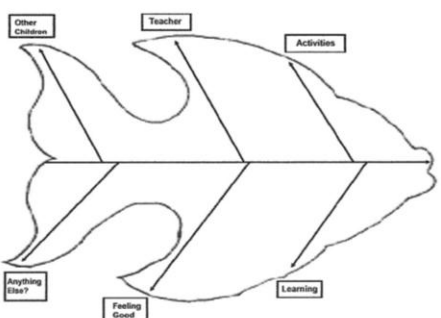
Everyone happy?

Kate Hudson 0711837 Feb 14

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All together…

- So

… **What made lesson 'X' good??**

Other Children — Teacher — Activities

Anything Else? — Feeling Good — Learning

Thinking Fish!

All together…

- So we now know what made that 'X' lesson good, but the question is….

… **How could it be made even better?**

धन्यवाद   Gracias   Merci

Dank   Thank You!   Ευχαριστώ

Your ideas and thoughts have been really, really helpful!

Grazie   Thanks

Appendices

Theoretical Process for Thematic Analysis derived from (Weber, 1990, Robson, 2011, Patton, 1990)

- Collect data
- Code data
- Highlight key phrases
- Identify patterns, sequences, themes, differences
- Add 'memos'
- Test in pilot and adapt
- Summarise data – counts/frequencies/mean/ range/variance/graphical display
- Interpret data –
  Deviations/missing data/negatives or opposites/ outliers/repetition/rival explanations/surprises
- Question data – own, others, hypothetical
- Factoring – underlying reasons?
- Triangulation of data – constant comparison (data to data and data to theory)
- Theory connections

Sorting activity

	What made that lesson good?
1	We got to work with each other
2	We all behaved well and were ready to go
3	We got to do lots of interesting activities
4	The teacher stood at the front and told us things
5	We had to think a lot but we got there in the end
6	We learnt something new
What others	

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What made that lesson good?

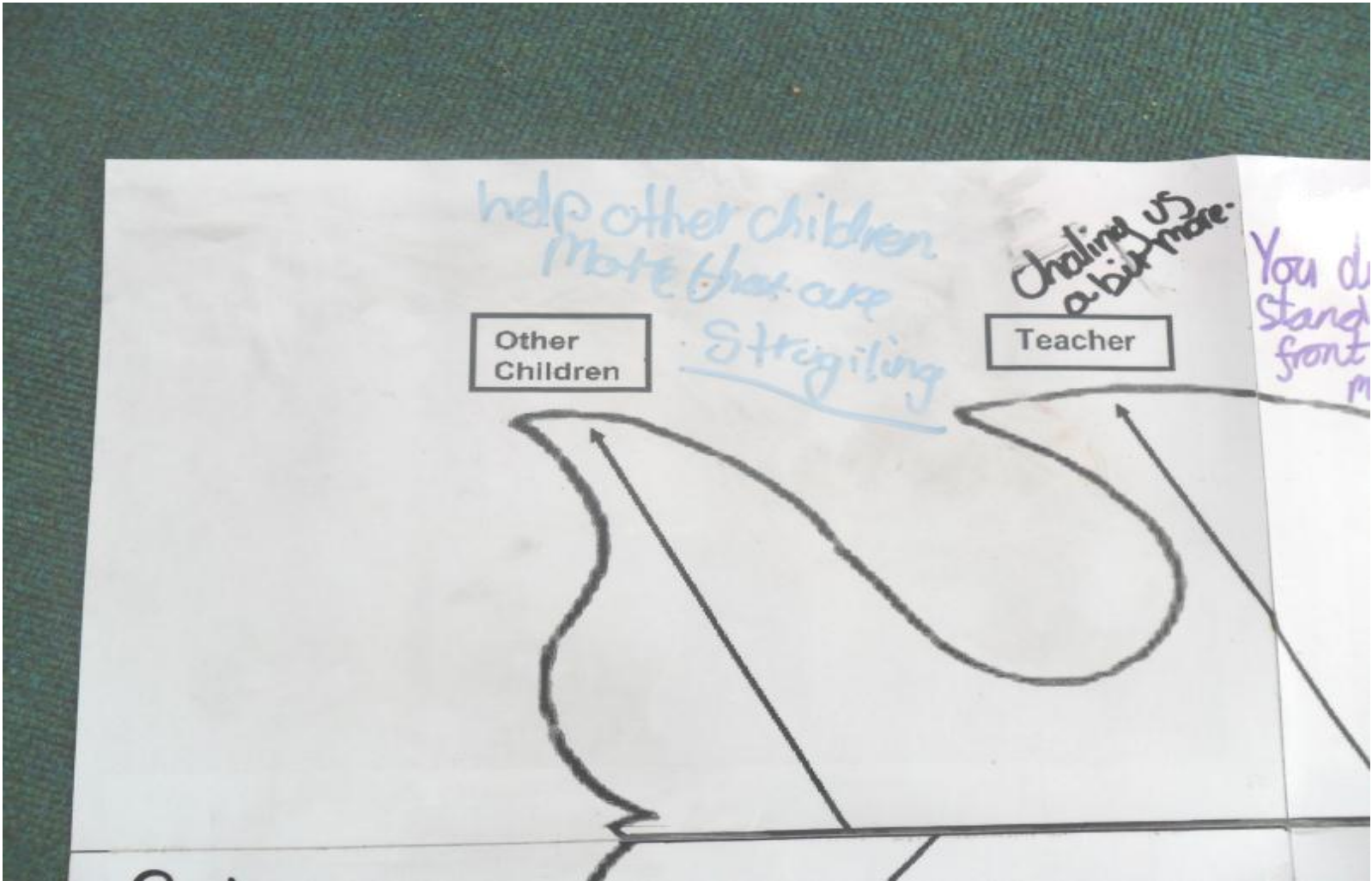|	
1	We got to work with each other
2	We got to do lots of interesting activities
3	We had to think a lot but we got there in the end
4	We all behaved well and were ready to go
5	We learnt something new
6	The teacher stood at the front and told us things
What others can you think of?	

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What made that lesson good?

1	We got to work with each other
2	We had to think a lot but we got there in the end
3	We all behaved well and were ready to go
4	We learnt something new
5	We got to do lots of interesting activities
6	The teacher stood at the front and told us things
What others can you	

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Thinking Fish

help other children
More than are
Struggling

Other Children

chasing us
a bit more

Teacher

You didn't
stand at the
front too
much.

Fair trade?
Or not?

harder Activites

Activities

make
sings.

Some People
would like
more easy
Activities,
and some
People
would like
harder Activities.

Put some
children on
iPads and ipods
to see good
and bad
things on
fare trade.

Anything Else?

a bit too easy
Make it a lot
harder.

Feeling Good

Brilleant

Fantasick

It was
funny

It was harder than last time

harder litrusy
Cessons.

Learning

Learnt a lot

It was a bit
easy

Thinking Fish!

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help other children
More that are
Strggiling

Other
Children

Teacher

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a bit more.

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chaling us
a bit more.

Teacher

You didn't
stand at the
front too
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Or not?

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Fair trade?
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Put some children on iPads and ipods to see good and bad things on faretrade.

Anything Else?

a bit too easy.

Make it a lot harder.

Feeling Good

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Feeling
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It was harder than last time

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Learning

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It was a bit easy

Thinking Fish!

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Reflective questions

Reflective Questions for Student Journal

- **What were your initial thoughts about the lesson, before your received feedback from the children?**

Lesson 1:

I felt the lesson went well and the children all seemed egar to discus their knowledge, both in groups and with the class, however, I felt that the initial part of the lesson lasted too long and although the children were still discussing issues in the end it was only a few and I think the rest may have been getting bored.

I liked having the children on the carpet to start with it felt a better place to have a discussion, maybe more informal?

The children all seemed engaged in the tasks and liked doing all the activities. However, i don't feel the children were particularly challenged but it did recap their knowledge and hopefully set a foundation for the rest of the week.

Lesson 2:

I felt good about the lesson as a whole and was really impressed with the knowledge the children had or gained about Fairtrade.

I was a little surprised when we talk about challenging ourselves in our work when some of the children said that they like their work to be really easy.

Again I like having the children down on the carpet but was a bit worried that they were there too long, although there was quite a bit of information and discussion about Fairtrade - I think I counted this by getting the children to read out the powerpoint information rather than having it read to them, I think this engaged them and made me feel less that I was just talking at them. I was conscious after yesterdays focus group not to spend too much time at the front without getting all the children involved.

I was really pleased that the children sorted themselves out into fairly equal sized groups.

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However, I was/am really confused as to the eight responses in to the "This task is too easy" envelop, I had designed to inadequate how challenged the children feel. Espeacially as only two groups indicated that they were going to challenge themselves to achieve the harder objectives?

Lesson 3:

I was really proud of the way the children worked, they all seemed to push themselves and took a lot of care getting the advertising format right and as effective as possible, before moving on to their finished product.

I liked not being at the front too much and letting the focus group share their experiences. I purposefully handed out the other children's book so the group felt they had the floor. I think the information coming straight from the children helped the others to understand (or maybe it was just to get on board with the idea), I'm not sure which.

There was a definite pace to the lesson and even though I felt it got a bit too nosey at times they all seemed on task. (The class don't seem to be able to talk to each other they always seem to shout? but this happens with them with others so I don't think it's just me). However, they quickly lowered their voices (for a time) when asked.

I enjoyed being able to work on a more personal level with some of the children who needed support and this felt possible because most of the children really knew what they were doing and they were all engaged so I felt able to loosen my control with them.

Lesson 4:

I was a bit frustrated at the start of the lesson not being as I had planned it, so consequently it felt messy, however, once the children sat in a circle on the carpet and the diamond 9 strips had been handed out the lesson started to get better and I relaxed.

I really like having the children who need more help on the carpet. I have tried this before but the other children who are supposed to work independly always then put their hand up and need help too. This time I made it clear to the ones who said they understood and were ready to work independently that I didn't want their hand up, but if they had a problem they could join me on the carpet where I would help them. I then told them that for this system to work I had to place my trust in the ones working on their own to keep themselves on task. It worked! I was able to give support to those who really needed it and the others worked really well independently, whereas sometimes I feel the ones that could get on with their work are too tempted to keep asking for reassurances, when really they could do the task. I think this way would really encourage independent working.

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Lesson 5:

I thought this lesson went really well. I introduced their personal assessment criteria in individual envelopes pre-positioned in their literacy books. This not only created interest but once explained incorporated the focus groups ideas and made the assessment intentions really focused and personal to them. There seemed to be a general buzz about this.

Initially the children seemed a little confused about the LO: Write to persuade a supermarket why they should or shouldn't support Fairtrade. I think this is mainly because they are so used to writing stories that they get a bit confused with the different aspects of writing (I'm assuming this as so many of them asked do we write this as a story). However, once this was explained and the link between their personal focuses were linked with the structure of the task they seemed ok with it. I also allowed them 1 minute of thinking time to be really sure which side of the argument they were on and to visually structure their work in their heads (this seemed to work well).

About half way in to their independent writing a couple of children said they were finished (this is something that usually happens). They were then asked to think about their work in terms of their own assessment focuses and did they feel they had fully meet them. This approach then seemed to refocus them, giving them the opportunity to really examine their work. (When I have seen this done previously, as in the children being asked to read through their work, I don't think they really knew what they were looking for, as they never seemed to change anything and just gave it a cursory read through. The personal focuses really seemed to help with this and I could see them editing or adding to their work.

- **What did you learn from the feedback from the children in the focus group?**

    Lesson 1:

    The children found the lesson a little too easy, even the LA children but they came up with a great idea to add challenge to future lessons. We discussed that what one person finds easy somebody else might not and they showed a lot of maturity and said that they think children should be able to decide for themselves how challenging something should be as they are the only ones who would know how easy/difficult something is for them. They suggested having 3 options put on the board or paper saying that everybody's work must have (All children will be able to objective...) and the second one should add a few more challenges and the third even more, the children then want to decide which one to aim for themselves.

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The children liked the idea of being able to rate how they felt about what they had learnt at the end of the lesson (The likert scale I introduced to assess differentiation). However, I pointed out that a lot of children had put the papers in the one that said I found this easy, the focus group said they thought that it was good to find it easy, but I explained I wanted to know when the children felt challenge and they came up with a new discrition for that point on the scale. (It was too easy, I didn't feel very challenged).

The children said they liked to feel they have choices in how they do something. I asked them what they think should happen if they all wanted to do the same thing, and they thought it was still best to have options but to include a 1st and 2nd choice if everyone wanted to do the same things to try and make if fare.

They also said that they prefer to chose the groups they work with rather than teachers choosing for them, however they all said that the also enjoyed working independently it just depended on the task.

Lesson 2:

We discussed the problem with the feed back being that the lesson was still to easy for some even though not many had aimed at more than the first objective (and they had all come from the focus group). They suggested that I should explain this to the class at the beginning and say that if some feel the lesson is too easy they must then challenge themselves by aiming for the higher objectives and give them some time to carry on their planning to incorporate this.

The children also suggested their should be rewards for people that have reached the higher objectives (Interesting - extrinsic rewards?) However, the discussion continued and then they decided that is wasn't fair if someone had tried really hard but had only reached the first objective didn't get a reward. The rewards they suggested ranged from sweets to being allowed out for 10mins during the Friday afternoon sessions. Mr FT said this might be possible as he was planning to introduce a golden/reward time on a Friday.

Lesson 3:

I learnt that the children liked being able to share their information with the class. And liked not having me at the front too much.

The differentiation indicator on the learning ladder activity was still a 3 for one group had moved up to two in another but in the third group (which were girls and mainly HA) it has moved down to 5th.

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The children liked the idea of having a debate tomorrow and said that they would like to be at the front again to give a couple of example for and against to show the rest of the class that there is arguments to be had on both sides.

Interestingly when I asked them how the group should be split (as in should they be able to choose for or against) the HA children said it might be better to put them in groups in table order (effectively meaning being grouped by ability) They said that the children who found literacy difficult might find it more difficult to debate against fairtrade? However, then one child pointed out that Connor had a good argument and he wasn't as good as some at literacy. (Interesting that they think debated might be based on ability and the fact that they all seemed to remember Connors argument.

Lesson 4:

The children in the group said they felt more challenged and liked being able to work on their own a bit more.

They also said they enjoyed being the more expert other in the starting activity. This worked really well for one LA girl in particular as she sometimes is quite timid but she liked being able to help the others in her group.

They said that although I had to stand up a bit more at the front today, they said that was good because they needed the information.

They got quite annoyed that one person during the debate had their hand up but when asked to contribute they only wanted to go to the toilet, they have suggested having a toilet card so the lessons are not disrupted. I think this shows that they were very engaged in the lesson.

They like having the choice with the difficulty level and said that they wanted to know more about what level they are all at and said it should be somewhere in their books what they need to do to get to the next level, so they feel they have something to aim for.

They also said for their free writing they would still like the choice of challenge and that the assessment criteria for different levels should be displayed so that they know what they are aiming for.

They also wanted it indicated when it was 10 mins before the end of the lesson so they had the opportunity to read through their work if they wanted.

Lesson 5:

The focus group this time was more about summing up the week as a whole. All of the children said they had enjoyed being part of the group and liked having their ideas listened to and acted upon. Enya, who is on the school council, said she had really enjoyed the focus group as she found the school council was more about what resources they needed to make the lessons better where as she felt the focus group was about how they learnt.

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All of the children thought that the focus group was worth while and believed it had made the lessons better, and said this was because they all had a chance to say what would work best for them.

The children did say they liked having the individual targets and liked the fact they were secret to them.

- **How will it inform your future practice?**

Lesson 1:

Tomorrow I am going to give all the children their success criteria incorporating the 3 different levels, this will be displayed on the whiteboard and also used as a bases of their planning sheet for their own adverts tomorrow.

I am going to change the description of the likert scale and explain this to the class as a whole.

The children are going to be allowed to chose what sort of adverts they wish to make i.e TV, Radio or poster. If the children all chose the same thing then I will explain that this is not possible due to resources and will introduce the idea of 1st and 2nd choice.

Lesson 2:

Tomorrow I am going to start the lesson as the group suggested reminding that the challenges are in the objectives and it is for them to act upon them.

If I get Dan's approval I might be able to think of some kind of reward (Although if I'm honest this goes against many of my beliefs about intrinsic and extrinsic rewards). This bit makes me a bit nervous but also interested in how it works out.

Lesson 3:

Tomorrow I will have the group out to the front to show some points to both arguments and I am going to spend as little time at the front as possible, while still inputting the conventions of debate as this is not something they have done very much of.

Lesson 4:

In my own class I will definitely make sure the children understand what they have to do to get to the next step. I think now that this is something the children should be able to understand and contribute to.

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I would make sure I had my own focus group to keep realigning my ideas with those of the children and after today I would make sure there are enough opportunities that all of the children at some point get to be the expert other. I think this will do wonders for some children's self-esteem.

Lesson 5:

I will definitely make sure that I use personal targets as well as class LO. I will make sure that the LO can be accessed on different levels and make sure their are opportunities for the children to choose their challenge level.

I think by incorporating personal targets with different areas of challenge, based on where the children are in their learning at that point, it stops (to an extent) putting a ceiling on the children's ability.

I will definitely use a focus group in my teaching, varying the children and subject we look at. At this point I'm thinking the children's involvement in the medium term plans would be very helpful with maybe weekly meetings making sure everything is on track. This research has really made me realise the importance of personalisation of learning and actually how easy this is when you have a focus group.

- **How did this help the children learn?**

  Lesson 1:

    The children really thought about wanting to be challenged in their work and decided that they wanted this rather than things being too easy. It also helped the children understand that there can be difficulties when allowing children to chose their activities due to resources and that sometimes compromises have to be made.

Lesson 2:

The children in the focus group all challenged themselves during the lesson even those who struggle with literacy. I think because we had been able to discuss everything together on the same level first they then felt or seemed to feel part of the desission making process. These process seems to have made them really active in their learning and especially for one boy, who I think was really beginning to struggle in literacy, he really participate well during the lesson, whereas before he had started to become a little withdrawn.

Lesson 3:

This seemed to help the children understand the problems with differentiation as one child had put their vote in the it's too difficult envelop but some of the HA in the group said they were finding it still a bit easy. They

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seemed to still stand by the idea of giving the children the options of their levels but think I should make some even harder. I think todays group really made them think about ability, theirs and others.

Lesson 4:

I realised today how important it is to keep introducing new ways of doing the same things, as Cerys really participated in the debate, which was great to see as she is normally quiet but has great ideas. And if I'm honest I don't think I would have thought a debate would bring her out of her shell but it did. It shows me just how much children surprise you and I think the focus group would stop me prejudging what children will or won't do.

It also gave the LA children in the focus group a chance to really feel like the expert, as a result they then participated in the focus group a lot more than normal.

Lesson 5:

The children seemed much more focused having their individual learning focuses. Their work was much more structured than I have seen before.

The focus group helped to make sure that the teaching was more accessible, by having many more ways of delivering the same things and I think this has shown in their final pieces of writing.

I think before the focus group any learning objectives and assessment focuses were always met by some as, this doesn't apply to me as I wont get there or I'm already passed that. So by keeping them personalised linked to assessment of their work so far it keeps the challenges relevant to them and I think in the long run this would promote a much more intrinsically motivated way of working. Already through the week the group has gone from rewards to how can we be personally challenged not just challenge as part of the class.

- **How do you feel about working in this way?**

    Lesson 1:

    I really enjoyed today! The children came up with some great ideas and I think they dealt with the need for lessons not to be too easy or too challenging very maturely, to be honest more than I thought they would. Children from all different abilities said they like some challenge but realise that if they find something easy or difficult it is not the same for everyone. I liked the idea of them choosing their own challenge level based on the criteria for the lesson and I think this has the ability to challenge all children regardless of ability, it will be exciting to see.

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I think so far, the children have impressed me most with their understanding, knowledge and sensitivity. Much more than I would have given them credibility for before the group.

And they all had the differentiation statement in the pyramid at the bottom, so the lesson was obviously too easy for them all which did surprise me a bit, but after talking to them feel that this was probably the case. However, I feel better for knowing this and now feel more well equipped to rectify it.

Lesson 2:

I am really enjoying working like this. It especially helped today when I'd introduced the self-challenge and it hadn't gone how I thought having the opportunity to discuss honestly with the children why they thought it had happened.

I think this way of working make the children more active in their learning and I can see many ways I would incorporate this into my own teaching. I think giving the children ownership of their learning and how things are delivered is an important tool to engage them. But the most powerful feelings I am getting from the group is they like being listened too and being treated as equals who have important opinions I think this could have fare reaching possibilities in the classroom, i.e increasing self-esteem, being able to make informed desissions, feeling that they are worth being listened to. Today has blown me away with how positive the group are, and I could really see how much more some of the children wanted to push themselves in the lesson. I can already see their confidence going, as is mine.

Lession 3:

Working like this has made me realise that how big the challenge of differentiation is and I think without monitoring it with a focus group in my own practice it might be something that could potentially become a problem. The more I doing this I can see how and on going focus group (possibly changing the children to prevent resentment) could really keep the children at the center of my teaching, which of course is where they should be, but I think the focus group would act as a real reminder of that in a target and planning focus profession.

Lesson 4:

It has got better and better as the week has gone on and has mirrored so much that I have learnt in theory like social constructivism and ZPD.

I feel like I have got a much better relationship with the children in the focus group but also with the children in the rest of the class and today was the first time I didn't feel pulled in all directions with questions when the children were working independently. They knew they could come to the carpet if they needed help rather than

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me running round the classroom. This shows how much working with a focus group not only effect that group but also the rest of the children in the class.

Lesson 5:

My feelings on working this way after the research week are that, using a focus group made life easier because:

- I found planning easier because I knew what the children wanted.
- I felt I had the children's understanding on planning and teaching making them onboard with the focuses
- It kept me really interested in the planning of lessons because they were coming out with such great ideas.
- It enabled the focus group to act as experts helping me to disseminate the knowledge and understanding.
- I also felt I didn't have to guess/hope/assume the learning was at the right level - they told me- giving me instant feed back enabling me to become more focused on future planning
- I felt we were all working as a team to insure that the children were able to learn, rather than me teaching and the children learning. (them and us mentality).

Additionally, for lesson 2, 3, 4 and 5 –

How did this compare to previous lessons? How do you know?

Lesson 2:

This lesson felt as if it had more pass and the children really seemed to enter into the discussion a a high level. Evidence: The discussions on the carpet, Dan's observations, feedback from the focus group and how I felt when I was teaching it. I felt more confident after the discussion with the children to wrap up the starter when the majority of the children had got what they needed to out of it.

Lesson 3:

The children seemed a lot more on board with trying to push themselves, and that could be seen in their work but also felt in the excitement in the room! I loved it!

Lesson 4:

Initially not as well but that was due to me being unprepared. However, once it got going it was so much better, I didn't have to cajole the children into challenging themselves they all attempted as many stars as they could. I was also able to leave them working while I supported others.

The higher level thinking that they did was really apparent in their debate, so it felt that the challenge levels had been right.

Lesson 5:

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This lesson was more of an assessment lesson so only followed on from the previous lesson in terms of subject, e.g. persuasive writing. However, based on previous assessment (free writing) lessons it seemed to work much better because of the personal targets each children was given at the start. I really do think, especially when the children were asked to check through their work, this made as difference as they actually knew what it was they were looking for. I know this because usually when they are asked to check through their work they just read it and not many changes are made and nothing much is added. This time I could see the changes that had been made to their work and things that that been added to the end. Although this sometimes made their conclusions a little stop-start, it shows improvement in their editing and I think in time this would really help them.

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Lesson Planning

PF 3 Suggested Lesson Planning and Evaluation Profoma

Lesson Planning and Evaluation Proforma

This proforma is a suggested way to plan and evaluate a lesson. You can use the school's planning proforma, but you will need to adapt it in order to ensure that it covers the aspects in this proforma.

Subject/Area of Learning: **Literacy: Persuasive writing**		Date:
Length of lesson: **1hr 25 mins**	No. of children: **27**	Year group: **Year 5**

> **Comment [T1]:** This was cut to 50mins as assembly overran

Links to children's previous learning
Building on work in Y4 and in previous literacy lessons on the features of persuasive writing (i.e. effects and differences between TV, Poster and Radio adverts.

Risk assessment (if relevant) **Children to be reminded of the schools safety procedures on the use of ICT. TA to carry mac book out of the classroom.**

Introduction	How long will this last? **20 mins finish at 09.50 am**

Objective:

To identify the purpose of self-challenge in literacy

Description of activity (including any differentiation)

Starter

The focus group to present the idea of the children choosing their own level of challenge.

Give the children the chance to act upon their feedback from yesterday's plans and to see if they can increase their self challenge level AFL The children will be given 10mins to work independently and then 5 mins to discuss their new ideas their group

> **Comment [T2]:** This worked really well, the whole of the focus group seemed to enjoy the chance to share the reasons why they wanted to have levels of challenge the they could choose. This seemed to inspire the rest of the class as the all seemed to increase their personal challenge.

Resources (including any use of interactive whiteboard, ICT)
Focus group, Ipods, Ipads,

> **Comment [T3]:** 10 mins was set on the whiteboard which helped me stick to it. And gave the children a visual reminder (although they didn't seem to look at it, I did give them a warning when they got halfway and they all seemed shocked.)

Key questions

How are you going to challenge yourselves?

Specific vocabulary to use

Alliteration, rhetorical questions, word play.

Main part of lesson	How long will this last? **25 mins 11.45 am**

Objectives/WALT: what I want the children to *learn*.

To be able use the features of persuasive adverts to create their own advert of a Fairtrade chocolate bar (Writing AF2,3&7)

Introduction: how I will introduce the main part of the lesson.

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Show the class the starred objectives, explaining that after discussions with some of the class it was decided that you should be able to choose your level of challenge. (1 star is level 3 criteria, 2 star includes previous and level 4 criteria and the third one includes previous and incorporates aspects of level 5 criteria) **Criteria = AF2, 3 &7. En3 Writing: 1a**

Activities: what the children will do (including differentiation for groups of children or individual children)

Children to make their Radio, Photo or Poster adverts once they have finished planning their work.

Activity:

Radio adverts: **Children to prepare their scripts using the information from their writing frame. They will then be recorded on the Mac Book (TA to take the children out somewhere quite to record their adverts)**

Photo Adverts: **Children to create their advertising sequenced photographs on a story board, based on their writing frames. They will then look around for their props and take the photos. These will then be downloaded onto the laptops so they can import them onto a PowerPoint to produce a sequenced photo advertisement.**

Poster: **Children to plan the out lay of their poster in the planning frame and then produce their finished work supported by colour, texts and the concepts developed in their writing frame.**

Resources (including ICT use)

Writing frames, posters for memory aids, Cameras, Laptops, Macbook.

Key questions

Who is your audience? How can you get emotion across in the different types of adverts? What about Fairtrade.

Specific vocabulary to use
Fairtrade, concept, alliteration, word play, emotion.

Any follow-up homework

Children who didn't get chance to finish their work will be allowed to complete it during their morning work.

Plenary	How long will this last? 15mins 10.45 am

What will I get the children to focus on? (nb sometimes plenaries need to deal with misconceptions that have arisen during the lesson)

Children to share their adverts with the other groups in the class.

Their peers will then assess them using 2 stars and a wish AFL

Children to all think of one thing they thing they have done really well and one thing that, if they had the chance to do the activity again, they would improve.

How will I make sure that all children contribute to the plenary, not just a few?

The children will be able to contribute in their groups but they will also have the opportunity to participate individually by writing down the one thing they liked and one thing they would improve.

Success criteria (WILF) and assessment

How will children know if they have been successful with their learning? These may need to be differentiated for different groups. Success criteria need to relate to objectives.

All children

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- ♦ Will be able use the features of persuasive adverts to plan their own advert of a Fairtrade chocolate bar using exciting adjectives and snappy slogans. ⭐ Level 3
- ♦

Most children
- ♦ Will be able use the features of persuasive adverts to plan their own advert of a Fairtrade chocolate bar using exciting adjectives, snappy slogans, emotive language and rhetorical questions. ⭐ ⭐ Level 4
- ♦

Some children
- ♦ Will be able use the features of persuasive adverts to plan their own advert of a Fairtrade chocolate bar using exciting adjectives, snappy slogans, emotive language, rhetorical questions, alliteration, word play and a description of the benefits of their product that tell their audience about their Fairtrade chocolate bar. ⭐ ⭐ ⭐ Level 4/5

Comment [T9]: All children completed this part (It looks on initial inspection that only a couple of children stopped at this objective.

Comment [T10]: Most of the children reached this level.

Comment [T11]: It looks like about a third at least attempted this level but only a few completed it. (word play seemed to be the most difficult).

At what stage in the lesson will I share these with the children? **As part of the starter, as this is the focus.**	
How will I get the children to use the success criteria to reflect on their learning? **The success criteria will be used a the starting point of the lesson with the focus group delivering them and they are embedded in the advertising frames**	
What other ways will I use to assess children's learning during or after the lesson? **How well the children have got on after the 10mins of independent work.**	

Other adults

How will other adults support children's learning during the introduction to the lesson? **TA will not be in the lesson at this point.**
How will other adults support children's learning during the main part of the lesson? **TA will take the children out of the classroom who are doing the radio advert so they can record it on the mac book without being disturbed.**
How will other adults support children's learning during the plenary? **To observe how the children react and to interject with the 2 stars and a wish.**

Risk Assessment

Children to be reminded of the schools safety procedures on the use of ICT. TA to carry mac book out of the classroom.

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Evaluation of the lesson
How well did the children learn? What evidence of this do I have? **The children's attitudes really seemed to change after the focus group stood up and explained the reasons why they have got the opportunity to choose their own level of challenge.** **Evidence = All children seemed to be eager to get on with their work and all of the children increase their input on their advertising frame even if they were unable to move on to the second objective.**
In what way(s) do I need to adjust my planning for the next lesson in this block of work? **I need to find the time to do the plenary as the children need to have the opportunity to present and celebrate their work.**
Key points to remember **Children can be fantastic motivators of other children.**

Evaluation of the my teaching
Which QTS Standards did I focus on during this session?
How well did I address them? What evidence do I have of this?
How well did I teach? What evidence of this do I have? **I like not being at the front of the class as much and I think the children preferred this too.** **Evidence= The feedback from the focus group and the motivation shown from all the children in reacting to what the focus group had said.** **I felt that I had more chance to help individual children today as many of the class could work independently in their groups.** **Evidence= I got to spend quite a bit of time with individual children and this helped them move forward in their learning which can be seem in the extra challenge level they managed to reach.** **The children were really excited and although a bit nosey at times were all on task.** **Evidence= observations, and the amount of work they achieved even though we lost half an hour through the assembly.**
In what way(s) do I need to adjust my teaching for the next lesson in this block of work? **I need to make sure the children know they will still have the opportunity to present their work.**

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Minutes from tutor/student teacher meeting

Minutes from Discussion with student		
School: Southfields Primary	**Date: 9 March 2011**	
Minutes:		**Actions:**

Really good despite shortened lesson – high energy from the children – all engaged and on task – What does this tell you? Helping each other too.
 	
Improvement in focus group responses all round –
5, 3, 2 (yesterday 6,3,3)
PLUS
Improved observations from mentor (Satis on Mon, Good on Tues, Outstanding today!)
 	
Only changes are listening to the children – children leading learning (succinct explaining to rest of the class re focus group work)
Celebration v reward debate – not sure that this worked, but children explaining told them more and that they are the experts in their learning so reward aspect dissipated – celebration assembly still going ahead.
Children feel like you've acted?
 	
Whole class feedback today – 1 in too hard (first time), 0 again a bit hard, needed help; more help – 1 (6 yesterday), I felt challenged but I got there 20 (7 yesterday), too easy 5 (8 yesterday)
 	
Children want to 'show' work
 	
Tomorrow is the debate – children request
 – children need to learn more about fair trade – content
   -   Split into literacy tables therefore support for less able and more able can take more challenging role against fair trade
   -   But Connor (LA) give good ideas
   -   Choice? No teacher choose – want guidance/leadership
   -   Show class examples from both sides of argument – want **modelling (take me through me ZPD)**
   -   Learning ladders (diamond 9 kind of) from focus group (a child from the focus group will lead each group) – to decide priorities for earning money e.g. better to earn something that nothing? Cheap prices for customers? Or fair price for all? **Time to talk and think**
   -   Option to choose for/against – but guide the option – need to appreciate the opposite viewpoint
   -   **Want independent work – with a (differentiated) writing frame (select the level of challenge) AND then back as for/against**
   -   ICT on hand (practicality – hardcopies available)
20 mins to 30 mins (45 today) with focus group but would spend this time replanning next day as a teacher anyway
 	
Perfect lesson structure – theory matches practice
Mentor could have told you this – Would you have responded in the same way? No – clearer idea of appropriate level of challenge especially for the G&T
Ofsted session – G&T kept coming up as targets, along with pace, planning, writing, knowing their next steps/own targets (i.e. level of challenge)
 	
Use in teaching - would need to change focus groups and subjects to minimise resentment and collect wider views
More in touch with the children – children own the learning therefore at the centre, rather than being at the focus of the planning/target setting – yet exceeding LOs
Without this differentiation becomes and problem because you don't know the children
 	
Relationship with the children changed – more colleagues planning together, less teacher/child etc
Respect, listening to children
		TB – to action

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| Changed the way see children and the way I work with them

Discussion with tutor – feels safer to go down more risky roads and deeper therefore less work as more through discussion than reading – ZPD!
Not more work – different way of working | |

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Lesson Observation

	Outstanding *	Good	Satisfactory	Unsatisfactory	Evidence

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Talk to learning	The lesson includes debate between children and between children and the teacher which consistently encourages higher order thinking and where ideas are evaluated and improved by all. High quality dialogue and questioning guides learning, with attention to individuals and groups	Talk, whether in whole class, group or 1-1 between teacher and children often encourages higher order thinking. Children engage in purposeful group talk without teacher present	Children have opportunities for purposeful talk and discussion	Children have little or no opportunity to engage in purposeful talk about their learning	After previous lessons issues with challenge, focus group spoke to the class about the thinking behind it. Impact of focus group became clear.
Behaviour management	Outstanding rapport with the children means that behaviour management is mostly implicit, not explicit. Children with challenging behaviour are handled with skill and sensitivity so that they can learn effectively	Behaviour management strategies are very effective at ensuring a positive learning ethos. Behaviour of more challenging children only rarely disrupts the learning of others	Sets clear expectations for learning and behaviour, establishing a purposeful and safe learning environment conducive to learning. Behaviour of some children may sometimes disrupt the learning of others	Sets unclear or inappropriate expectations for learning and behaviour. Behaviour of some children often disrupts the learning of others	
Flexibility and adaptability	Demonstrates flexibility and adaptability by changing pace, approach and teaching method in a lesson in response to what learners say and do	Shows flexibility/adaptability that takes account of the progress made by learners and matched their teaching to it, including by matching pace to learning and the use of a variety of teaching methods	Adapts teaching (eg questioning) in the light of pupil response during the lesson	Does not adapt teaching in the light of pupil response	Method of learning changed after previous focus group. Teaching definitely modified due to learners input.

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Assessment for learning and feedback	Teaches children to be able to explain how the teaching helped them to make progress Monitors children's progress to evaluate quickly how well they are learning so that they can change the approach during the lesson if necessary Provides detailed feedback and targets to individual learners that are focused well to ensure further progress AfL techniques are securely embedded in the trainee's practice	Monitors and assesses children's achievement and provides feedback to them that is based on the specific needs of children or groups of children and that leads to further progress. Uses a range of different assessment methods matched well to the expected learning outcomes and shows an understanding of why a particular method was chosen AfL techniques are becoming embedded in the trainee's practice and have a clear impact on children's engagement and learning	Responds to individual and groups of children's questions and needs to enable children to progress and meet the learning expectations Monitors children's progress and assesses their achievement in relation to the intended learning, and provides feedback to children which aids their progress AfL techniques are being used	Opportunities to assess children's learning are missed, and feedback does not help move children's learning forward	
Individual needs	Strategies to overcome barriers to learning are highly effective so that all children make good progress	Planning and teaching includes effective strategies to overcome barriers to learning (such as low levels of literacy/ numeracy)	Recognises potential barriers to learning and has some ideas for responding to them Planning takes account of diversity and promotes equality and inclusion	The needs of some individuals or groups are not met in the lesson	The focus group enabled TB to tailor the lesson to ensure all children could learn
Social and cultural diversity	Fully exploits possibilities to promote children's understanding and appreciation of social and cultural diversity	Makes links and explores possibilities to develop children's understanding and appreciation of social and cultural diversity	Is beginning to develop children's wider understanding and appreciation of social and cultural diversity	Fails to exploit possibilities for developing children's wider understanding and appreciation of social and cultural diversity	

Summary of strengths

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Areas for development

Overall grade	Outstanding		Good		Satisfactory		Unsatisfactory	

Mentor:.. Student:... PQAT:.....................................

Date:...............................

* The descriptors of outstanding, good, satisfactory and unsatisfactory are based on Ofsted's grade criteria for *trainee teachers*.

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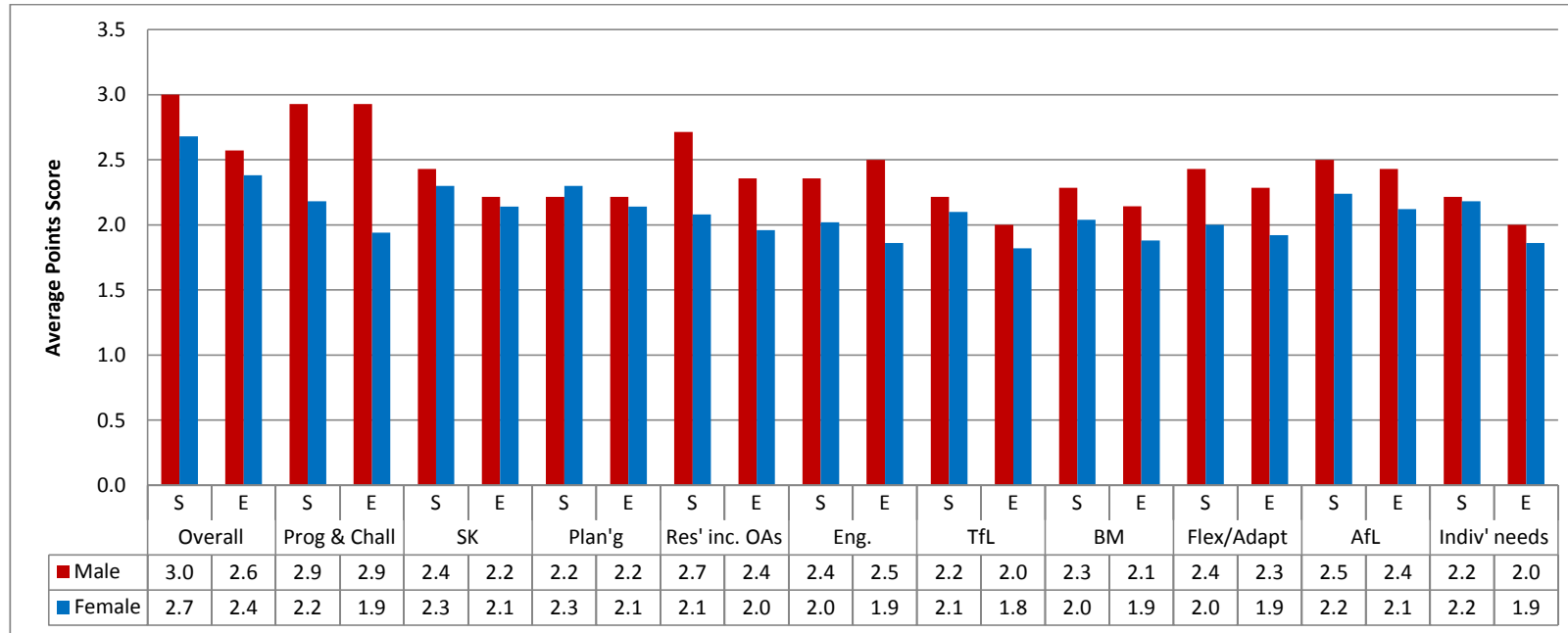
	Overall		Prog & Chall		SK		Plan'g		Res' inc. OAs		Eng.		TfL		BM		Flex/Adapt		AfL		Indiv' needs	
	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E
■ Male	3.0	2.6	2.9	2.9	2.4	2.2	2.2	2.2	2.7	2.4	2.4	2.5	2.2	2.0	2.3	2.1	2.4	2.3	2.5	2.4	2.2	2.0
■ Female	2.7	2.4	2.2	1.9	2.3	2.1	2.3	2.1	2.1	2.0	2.0	1.9	2.1	1.8	2.0	1.9	2.0	1.9	2.2	2.1	2.2	1.9

S= start of intervention, E= end of intervention.

Average point score by gender

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	Overall		Prog & Chall		SK		Plan'g		Res' inc. OAs		Eng.		TfL		BM		Flex/Adapt		AfL		Indiv' needs	
	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E
Minority Ethnic Group	2.9	2.5	2.9	2.5	3.0	3.0	2.9	2.9	2.4	2.5	2.8	2.5	1.9	2.1	1.8	1.6	2.5	2.3	2.9	2.9	3.0	2.4
White	2.7	2.4	2.3	2.1	2.2	2.0	2.2	2.1	2.2	2.0	2.0	1.9	2.2	1.8	2.1	2.0	2.0	2.0	2.2	2.1	2.1	1.8
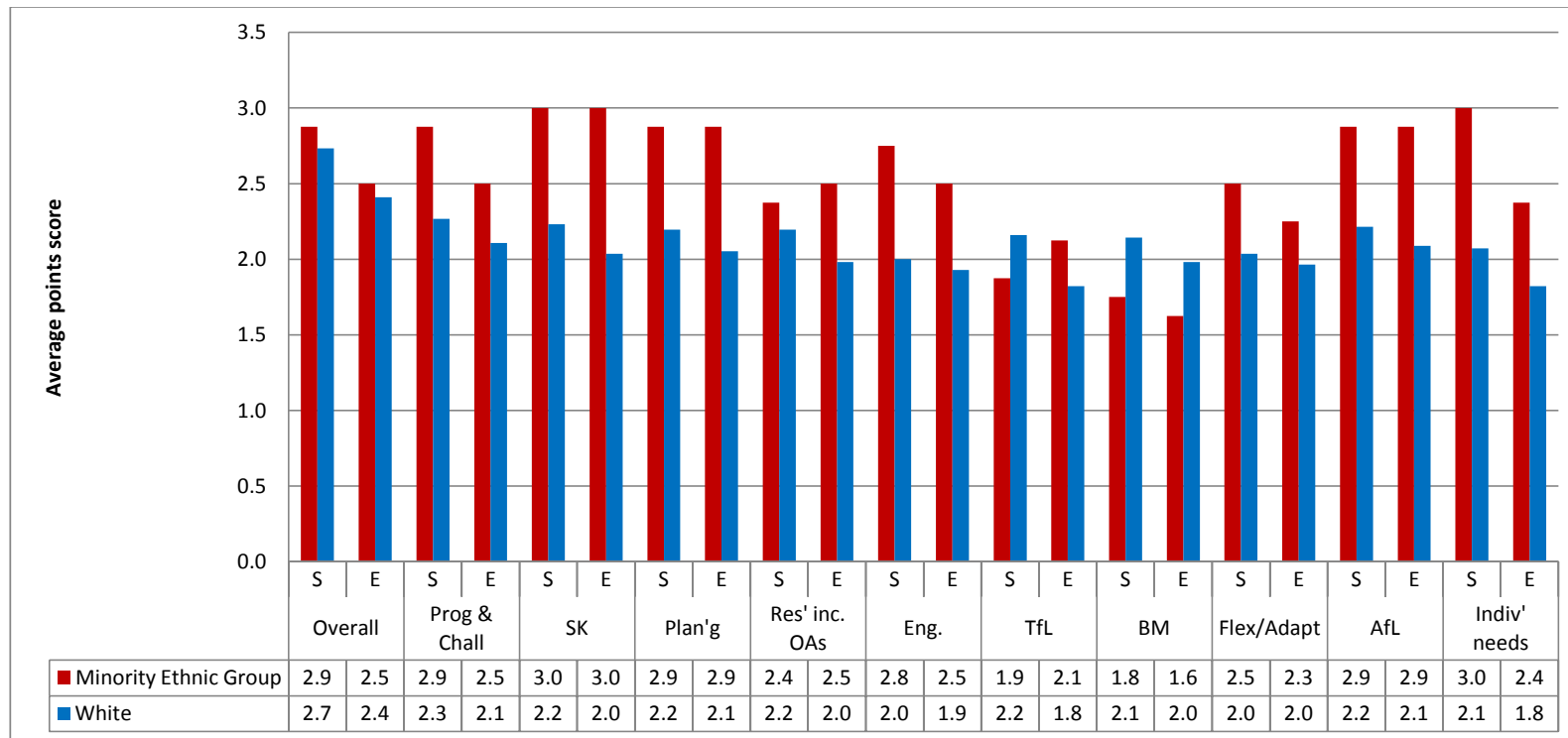
S= start of intervention, E= end of intervention.

Average point score by ethnicity

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	Over 25 years	Under 25 years

Chart: Average points score (y-axis 0.0 to 3.0)

		Overall		Prog & Chall		SK		Plan'g		Res' inc. OAs		Eng.		TfL		BM		Flex/Adapt		AfL		Indiv' needs
	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E
■ Over 25 years	2.6	2.5	2.5	2.4	2.6	2.4	2.5	2.3	2.5	2.3	2.2	2.2	2.5	2.2	2.3	2.3	2.4	2.4	2.6	2.5	2.4	2.2
■ Under 25 years	2.8	2.4	2.3	2.0	2.2	2.0	2.1	2.1	2.1	1.9	2.0	1.9	1.8	1.7	2.0	1.7	1.9	1.7	2.1	2.0	2.0	1.7

S= start of intervention, E= end of intervention.

Average point score by age

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	Overall		Prog & Chall		SK		Plan'g		Res' inc. OAs		Eng.		TfL		BM		Flex/Adapt		AfL		Indiv' needs	
	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E
■ SEND	3.0	3.0	3.0	3.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	1.5	1.5	1.5	1.5
■ No identified needs	2.7	2.4	2.3	2.1	2.4	2.2	2.3	2.2	2.3	2.1	2.1	2.0	2.2	1.9	2.1	2.0	2.1	2.0	2.4	2.2	2.2	1.9

S= start of intervention, E= end of intervention. For key to abbreviation see figure 5.5

Average point score by SEND

Appendices

	Overall		Prog & Chall		SK		Plan'g		Res' inc. OAs		Eng.		TfL		BM		Flex/Adapt		AfL		Indiv' needs	
	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E
■ Early Years	2.9	2.3	2.0	1.8	2.2	2.0	2.2	2.1	2.1	1.7	1.8	1.8	2.1	1.7	2.3	1.9	2.0	1.9	2.0	1.9	1.9	1.6
■ Primary	2.7	2.4	2.4	2.2	2.4	2.2	2.3	2.2	2.3	2.1	2.2	2.1	2.1	1.9	2.1	1.9	2.1	2.0	2.4	2.3	2.3	2.0

S= start of intervention, E= end of intervention.

Average point score by Route

Appendices

	Overall		Prog & Chall		SK		Plan'g		Res' inc. OAs		Eng.		TfL		BM		Flex/Adapt		AfL		Indiv' needs	
	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E
■ Grade 3 or below	3.0	2.3	3.0	2.7	3.0	2.7	3.0	2.7	2.7	2.3	2.5	2.7	1.8	1.8	2.0	2.0	2.3	2.2	3.0	3.0	3.0	2.3
■ Grade 2 or better	2.7	2.4	2.3	2.1	2.3	2.1	2.2	2.1	2.2	2.0	2.1	1.9	2.2	1.9	2.1	1.9	2.1	2.0	2.2	2.1	2.1	1.8

S= start of intervention, E= end of intervention.

Average point score by grade on course exit

Appendices